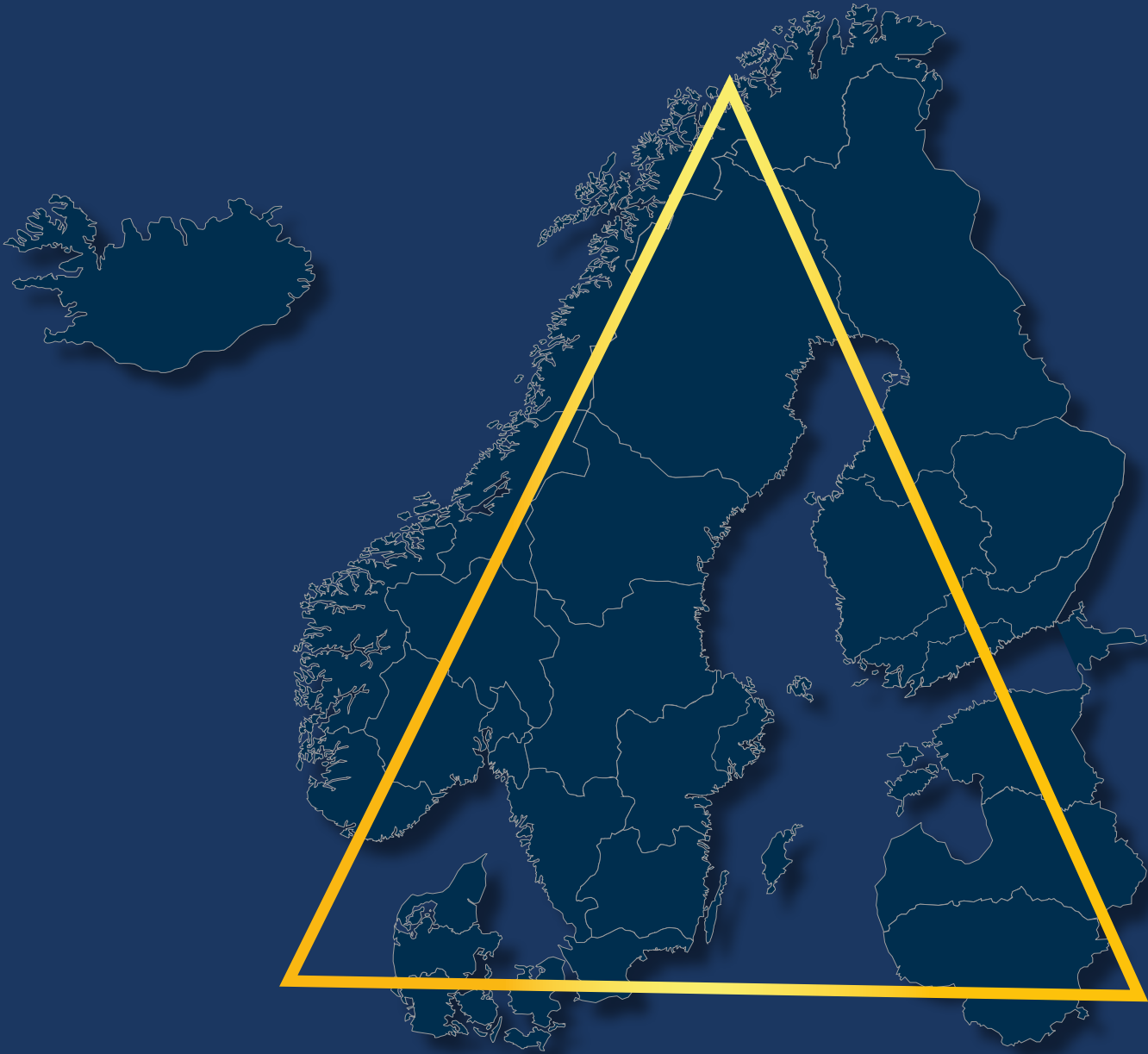


# Nordic Innovation Triangle 2023



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# **Nordic Innovation Triangle 2023**

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# Foreword by Saeid Esmaeilzadeh

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The Nordic Innovation Triangle studies the different regions that make up the Nordic region, to better understand the patterns of entrepreneurship. In practice, all the 27 larger regions that make up the Nordics, including the three Baltic states, are analysed, and various aspects of entrepreneurship are mapped out. One key aspect is how much is invested each year in each region – as investments are the blood life of entrepreneurship. As you can read, each 10 000 Euros more investment per adult is associated with a 1 percentage point lower unemployment rate, in comparison of the 27 Nordic regions.

One concise innovation brief has been written for each of the Nordic regions. These summarise key aspects of regional SME innovation activity, including which sector the successful new companies founded in the last five years belong to. The aim is to better understand the geography of successful new enterprises, as well as the innovation processes that are shaping the future of Nordic nations.

It is difficult, almost impossible, to be innovative on your own. New ideas and concepts are developed through interaction with our surroundings. Innovation does not occur in a vacuum, but through cooperation with others.

We see this cooperation in our daily work with innovation since those individuals and those firms that push for innovation in a city such as Stockholm do so through networks with other entrepreneurs. Nordic countries have uniquely high levels of trust, which facilitates cooperation between innovators. While Stockholm is certainly smaller than innovation hubs such as London, New York, or Silicon Valley, it still is a globally important innovation region, with progress happening in many diverse fields. The same is true also for Copenhagen, Oslo, and Helsinki.

Yet, while much is happening in the Nordic capital regions, to understand the true innovative strength of the Nordics, we must look at the whole picture. The Nordic Innovation Triangle includes all the Nordic regions—vibrant capitals like Stockholm, Oslo, Copenhagen, and Helsinki, as well as Iceland, and the three Baltic states which since the end of the Soviet Union have step by step moved towards becoming entrepreneurial and innovative economies.

Innovation is about an idea that is made real and used. Forms of innovation may include a product feature, a service, or method making it possible to create a more sustainable way of life. My own background in going from material research to working as an entrepreneur and investor has taught me about the importance of collaborating with others and finding solutions to hidden problems that exist in the market.

With the Nordic Innovation Triangle, we have built a methodology to better understand the investments and innovation processes of each Nordic region. Entrepreneurship and innovation are about making ideas happen, often resulting in solutions that ultimately benefit society. The Nordic region taken together is one of the most important regions for firm development and innovation in the world, particularly so when it comes to fostering the innovations needed for tackling the challenges of the future, such as reducing food waste and shifting towards more sustainable energy systems.

We hope that the Nordic Innovation Triangle, which is now published for the second year, can help in better understanding the patterns of firm development across the Nordics. The index is informative for decision-makers in both the public and private sectors and offers insight into how more investments and entrepreneurship can help reduce unemployment and foster development throughout the Nordics.

Much of the focus in global innovation has for the last decades been on how to replicate Silicon Valley, fostering urban regions with a strong concentration of firm innovation. But we need a broader focus, including innovation activity not only in urban regions but also regions with less population density and natural

resource wealth. The spread of technologies and work practices that allow distant work to be carried out is one of the big changes happening in the business world currently, and as a result, the possibilities to carry out business partnerships across countries and regions are increasing.



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**Through collaboration, the greater Nordic region has become a strong hub for attracting international investments. The high levels of trust and strong working ethics of the Nordic countries create a unique business environment, conducive to decentralized management, and to various forms of innovation.**

**- Dr. Saeid Esmaeilzadeh**

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The future of Nordic business and innovation is a collaboration between firms in different countries and regions, including the three Baltic states that are increasingly part of the greater Nordic region. Through collaboration, the greater Nordic region has become a strong hub for attracting international investments. The high levels of trust and strong working ethics of the Nordic countries create a unique business environment, conducive to decentralized management, and to various forms of innovation.

While we do live in a time of uncertainty, with the war in Europe, a recent pandemic, inflation, and rising interest rates, firms across the Nordics continue

to carry out their work and step by step introduce new ways of doing business. We want to learn more about the SMEs of the Nordics – how do they innovate, which sectors are they in, and how are the regions in which the SMEs grow faring in the competition for growth capital across the Nordics? This index adds knowledge, which we gladly share with others. A successful business is not a recipe to be kept secret, and we need to learn more together about the SME growth condition, across all 27 regions that make up a great Northern Innovation Triangle.

*Dr. Saeid Esmailzadeh*



*Saeid Esmaeilzadeh migrated at a young age from Iran to Sweden. At the age of 28, he became the youngest associate professor at Stockholm University, after defending his doctoral thesis in crystal chemistry. Two years later, he serendipitously discovered silicate glass, with unusual material properties. This became the start of Saeid's path to entrepreneurship, and he has since participated in founding several successful companies in areas such as polymers, medical technology products, biotechnology, advanced materials, clean technology, and information technology. Saeid is a board member, CEO & co-founder of Esmaeilzadeh Holding.*

*Esmaeilzadeh Holding was founded with the belief that our experiences as entrepreneurs make us better investors, and that our experiences as investors make us better entrepreneurs. The mission is to establish and develop entrepreneurial platforms to enable organic and acquisition-oriented growth in a variety of sectors.*



## Key findings

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- ◆ The Nordic Innovation Triangle studies various aspects of firm innovations across the greater Nordic region. Norway stands out as the Nordic country where the highest share of SMEs engages in various forms of innovations—Norwegian regions also have the most capital investments per adult.
- ◆ Swedish SMEs are strong in product innovations and business process innovations, but innovative businesses are not engaging in collaboration with others as much as the rest of the Nordics. The SMEs of Finland stand out by having strength in innovative businesses collaborating with others, and the same is true of Icelandic firms. Danish SMEs are focused on business process innovations. Baltic SMEs have a lower level of innovation activity overall—since they have fewer investments per adult—but are still surprisingly strong in product innovations.
- ◆ For each of the 27 greater Nordic regions, this study examines successful new businesses founded in the last five years. In Sweden, newly formed successful businesses are particularly focused on the services sector, and the same is also true of the Baltics. The new successful businesses in the regions that make up Norway and Denmark are often focused on platform ventures, a new and growing business sector in which companies provide software as service platforms. Finland's new successful businesses are focused on software development. (See summary in Table 1).
- ◆ There is a clear relation between investments per adult and regional unemployment. Each 10 000 Euros more per adult in yearly regional capital investment, is associated with 1 percentage point lower regional unemployment level.
- ◆ If investments per adult increased by a fifth in the various Nordic regions, unemployment would significantly be lowered. In Stockholm and Oslo, this is estimated to lead to a reduction of unemployment levels by 0.6 percentage points. In Helsinki and Copenhagen, an increase of capital investments by a fifth is estimated to lead to a reduced unemployment rate of 0.5 percentage points. Boosting investments is a key aspect of encouraging innovation and job growth throughout the Nordics and should be a priority for regional and national governments.

**Table 1. Most common sector of successful businesses founded in the last 5 years (share of successful new businesses in this sector)**

<b>Sweden</b>	Service (20%)
<b>Denmark</b>	Platform (24%)
<b>Finland</b>	Software (23%)
<b>Norway</b>	Platform (18%)
<b>Baltics</b>	Service (20%)

# Summary

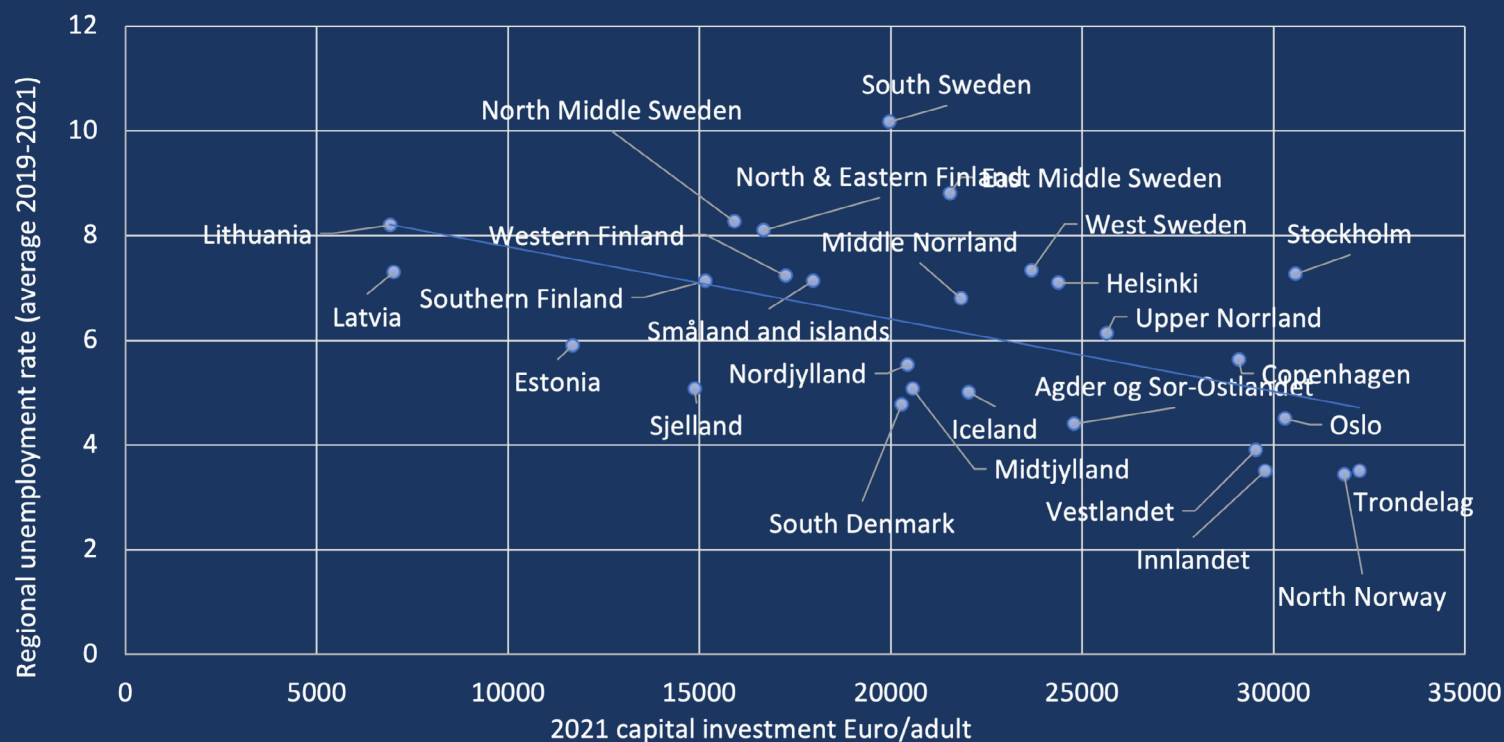
This summary focuses on comparing national characteristics of innovation in the Nordics, while later in this study a summary for each of the 27 regions making up the greater Nordics is shown. A key aspect of innovation is investments since capital is needed for businesses to develop and fund various innovation activities. A comparison of the 27 regions that make up the greater Nordic region, shows that there are significant differences in capital investments per capita. In the average region of Norway, close to 30 000 Euros in capital investments are made annually per adult, compared to 22 000 Euros in Sweden and Iceland, 21 000 Euros in Denmark, 18 000 Euros in Finland, and merely 8 500 Euros in the Baltics (Figure 1). These differences are associated with the level of economic development, with Norway having higher levels of investment due to the massive wealth in oil and natural gas resources that are invested in the economy, while the Baltic regions are still catching up to the rest of the Nordics in economic development. There is a clear relation between investments per adult and regional unemployment. Our analysis suggests that each 10 000 Euros more per adult in yearly capital investment is associated with a 1 percentage point lower regional unemployment level (Figure 2).

**Figure 1. Average regional capital formation per capita**



Source: Eurostat and own calculations. 2021 data on capital investments, Euro/adult (20-64 years old).

**Figure 2. Link between capital investments/adult and unemployment in Nordic regions**



Source: Eurostat and own calculations

It is important to look at total capital investments in a region as a key component of regional growth strategies. The reason is that investments in infrastructure, properties, and businesses go hand in hand – regions need to attract significant capital for investments to be carried out in all this, to not have bottlenecks for development. The Nordic Innovation Triangle studies different aspects of innovation amongst small and medium-sized businesses (SMEs) in the various regions of the greater Nordics. Product innovation is a process in which businesses utilize new technologies in their operations, either by selling new products or using them in their internal work processes. In the average region of Norway, 45 percent of firms are engaged in product innovations (Figure 3). Sweden follows in the second place, with 42 percent of SMEs in the average region engaged in product innovations, while the figure is 35 percent for Finland, 32 percent for the Baltics and for Denmark. Iceland has the lowest share, with 28 percent of firms

engaged in product innovations.

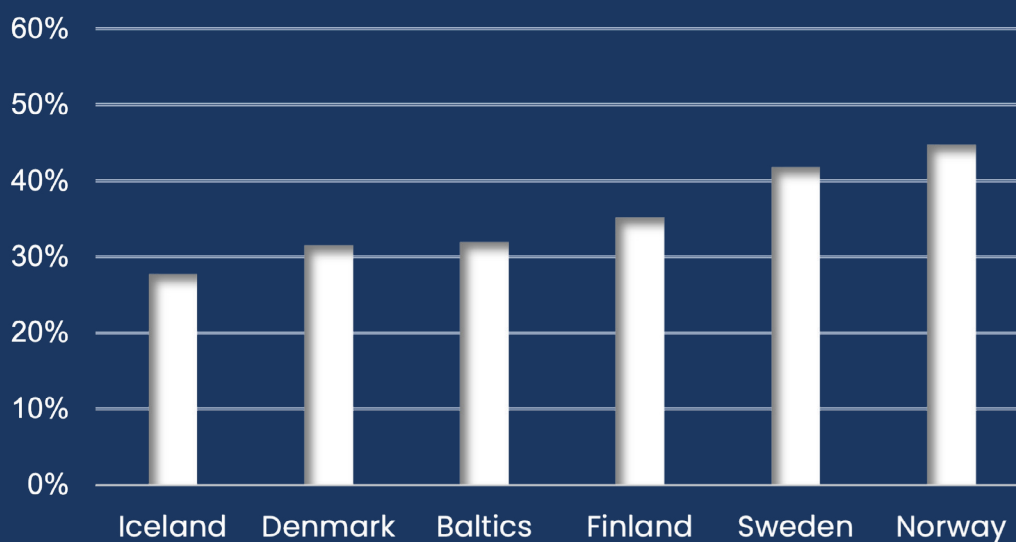
Innovation is not just about utilizing new product technology but can also be about how firms carry out internal work, and what services they provide to others. Business process innovations are a key part of long-term economic development. Some businesses are focused both on utilizing new products and novel business strategies in their ventures. A higher percentage of SMEs in the Nordic countries are engaged in business process innovations than product innovations.

The highest share of SMEs with business process innovations is found in Norway, where in the average region 52 percent of SMEs are relying on new business practices (Figure 4). Sweden shares second place with Finland, as 47 percent of businesses in the average region have business process innovations, with Denmark following closely behind with 46 percent. In Iceland, the same share is 42 percent, and in the Baltics 40 percent. The rate of business process innovations is more even amongst the Nordic countries, and an explanation is that, unlike product innovations that typically require capital investments, business process innovations are less reliant on capital and more on the adaptability and willingness of those involved with SMEs to try out new ways of organizing the work process.

The third form of SME innovation is innovative businesses collaborating with others, including other SMEs, larger companies, universities, and/or other institutional actors such as government entities. Much of innovation does happen through collaboration partnerships, where SMEs carry out a part of the innovation work that forms a greater whole. Norway is again topping the list, this time together with Finland, as 28 percent of innovative SMEs in the average region of both countries engage in collaborations with others (Figure 5). Iceland follows in third place, with 23 percent of innovative SMEs engaging in collaborations with others, followed by the Baltics with 16 percent, Sweden with 15 percent, and Denmark with 14 percent.

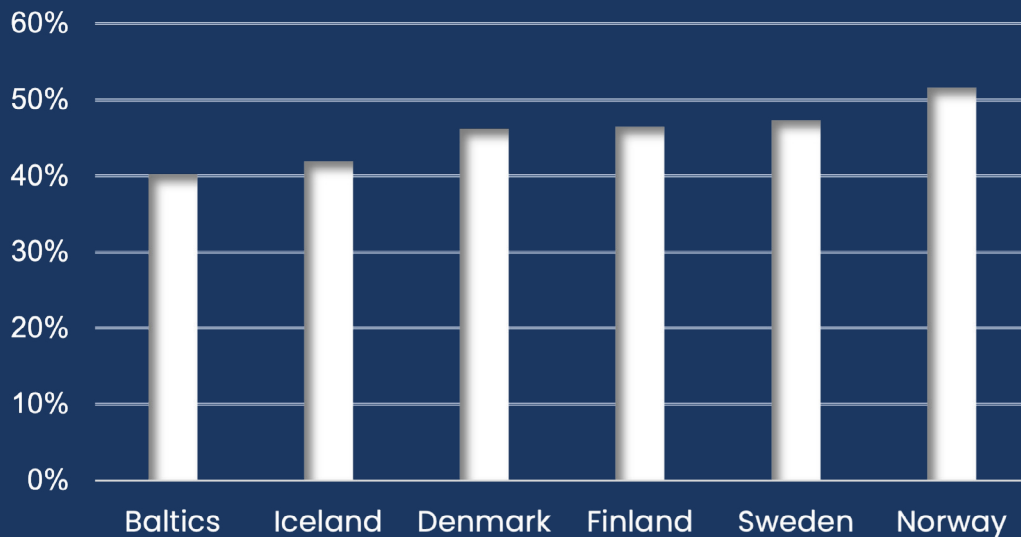
Norway stands out as the part of the Nordic regions where SMEs are most engaged in various forms of innovations, and this seems related to the fact that Norwegian regions have more capital investments per adult. Swedish SMEs are strong in product innovations and business process innovations, but not as much in innovative SMEs collaborating with others. The innovative SMEs of Finland stand out by often engaging in collaborations with others. Danish SMEs are strong in business process innovations, but otherwise behind the rest of the Nordic in innovation activity. Given that the Baltic nations have significantly lower levels of investments, their SMEs are still relatively strong in various forms of innovation. The innovative SMEs of Iceland, an unusual region given the large geographical distance from the rest of the world, are particularly prone to collaborate with others.

**Figure 3. Share of SMEs with product innovations**



Source: European commission, European Innovation Scoreboard, European Regional Innovation Scoreboard, own calculations.

**Figure 4. Share of SMEs with business process innovations**



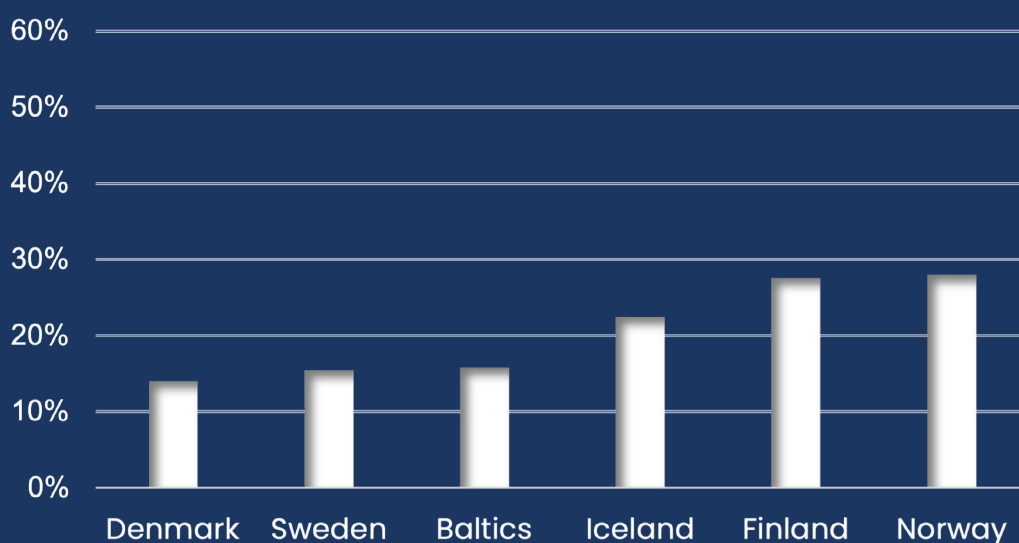
Source: European commission, European Innovation Scoreboard, European Regional Innovation Scoreboard, own calculations.

By studying successful businesses formed in the last 5 years for each region, it is found that in Sweden, novel successful businesses are particularly focused on services. The same is also true of the Baltics. The new successful businesses in the regions that make up Norway and Denmark are often focused on platform ventures. New successful firms in Finnish regions are particularly focused on software development.

For each of the 28 regions that make up the greater Nordics, an innovation brief is created, which includes information on the innovation activities of the local SMEs, sector focus of founded successful companies founded in the last five years, and investments per adult. Each innovation brief also includes a calculation, on how unemployment levels are estimated to change if the region could boost

investments per adult by a fifth. In the Swedish capital region of Stockholm and the Norwegian capital region of Oslo, this is estimated to lead to a reduction of unemployment levels by 0.6 percentage points. In the Finnish capital region of Helsinki and in the Danish capital region of Copenhagen, an increase of capital investments by a fifth is estimated to lead to a reduced unemployment rate by 0.5 percentage points. Boosting investments is a key aspect of encouraging innovation and job growth throughout the Nordics and should be a priority for regional and national governments.

**Figure 5. Share of innovative SMEs in collaboration with others**



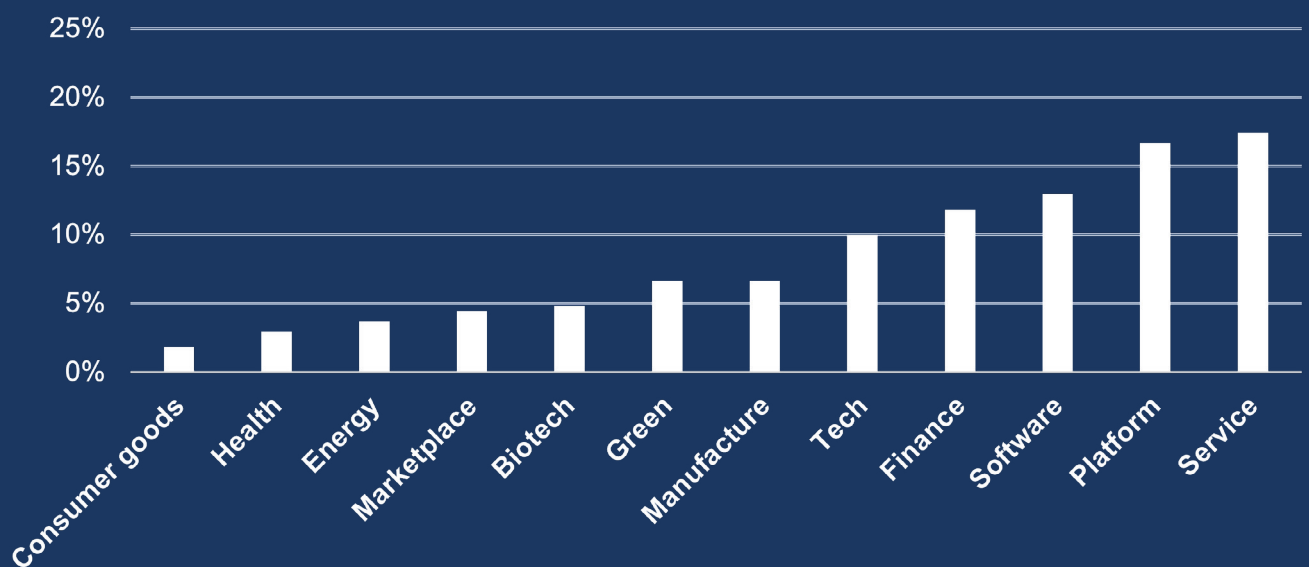
Source: European commission, European Innovation Scoreboard, European Regional Innovation Scoreboard, own calculations.



# Innovation focus of new successful Nordic firms

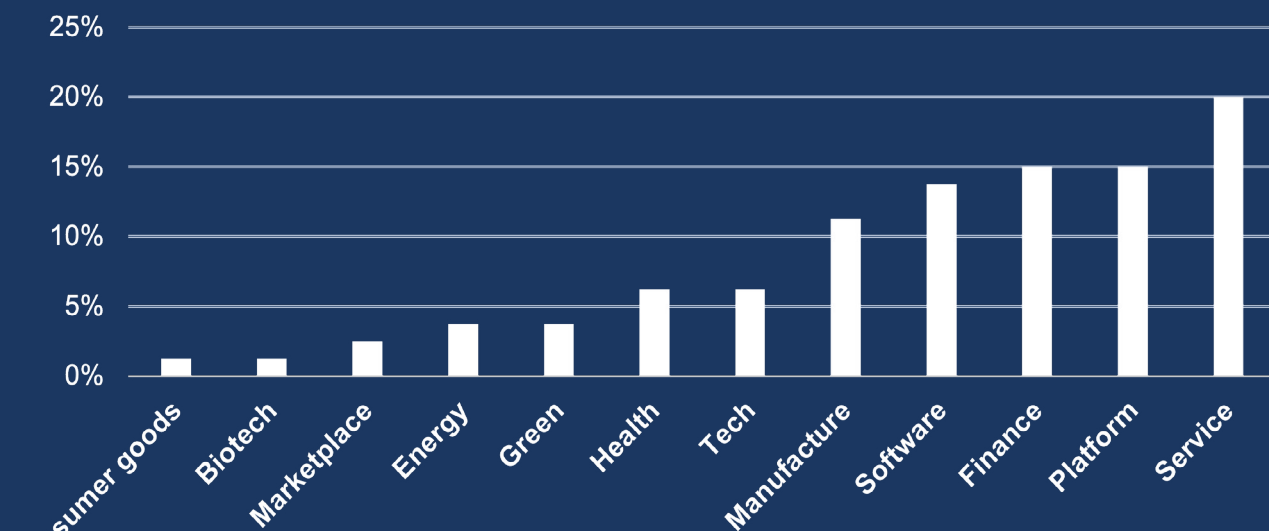
For each of the 28 regions that make up the greater Nordic region, the activity of the top-10 ranked companies founded in the last five years is studied, by looking at the Crunchbase rating of companies founded in 2018 or later. The most common sectors for these companies are service, platform, and software (Figure 6). New successful companies in Swedish regions, as well as in Danish regions, are often focused on either service, platform, or finance (Figures 7 and 8). The platform sector is a relatively new focus for companies, and it basically involves building a digital platform through which a service is provided. Successful new Danish companies have a particularly strong focus on platform businesses, with close to one-quarter of the new innovative companies having a platform business model. Finland similarly has a strong focus on software, as more than a fifth of the new successful companies are focused on software development (Figure 9).

Figure 6. **Nordic average**, sector of succesful businesses founded in 5 years



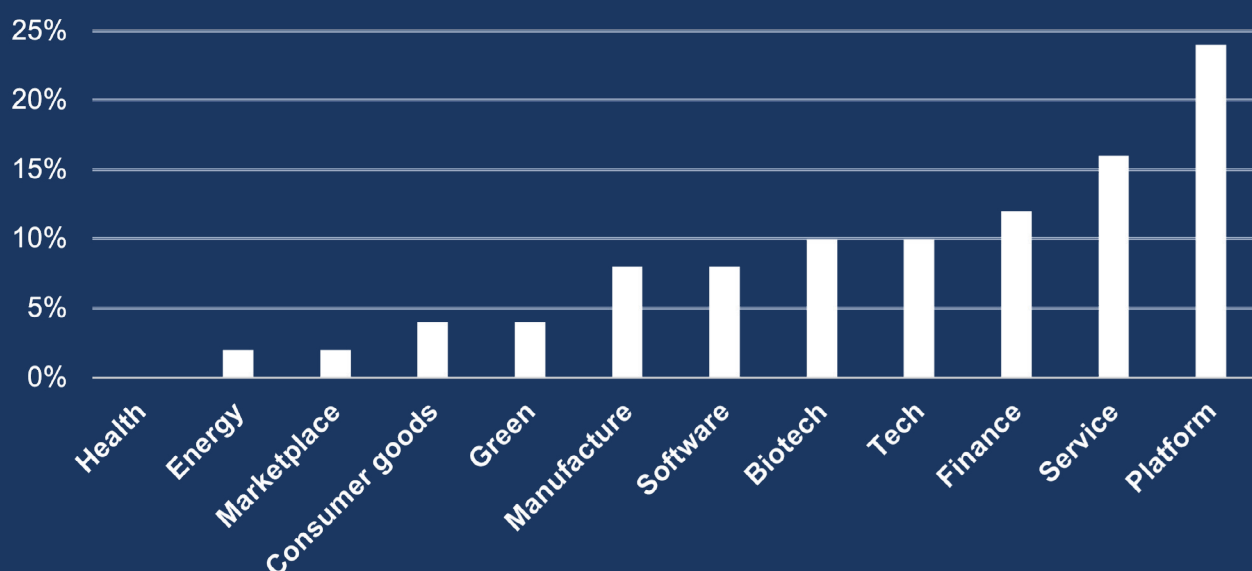
Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

Figure 7. **Sweden**, sector of succesful businesses founded in 5 years



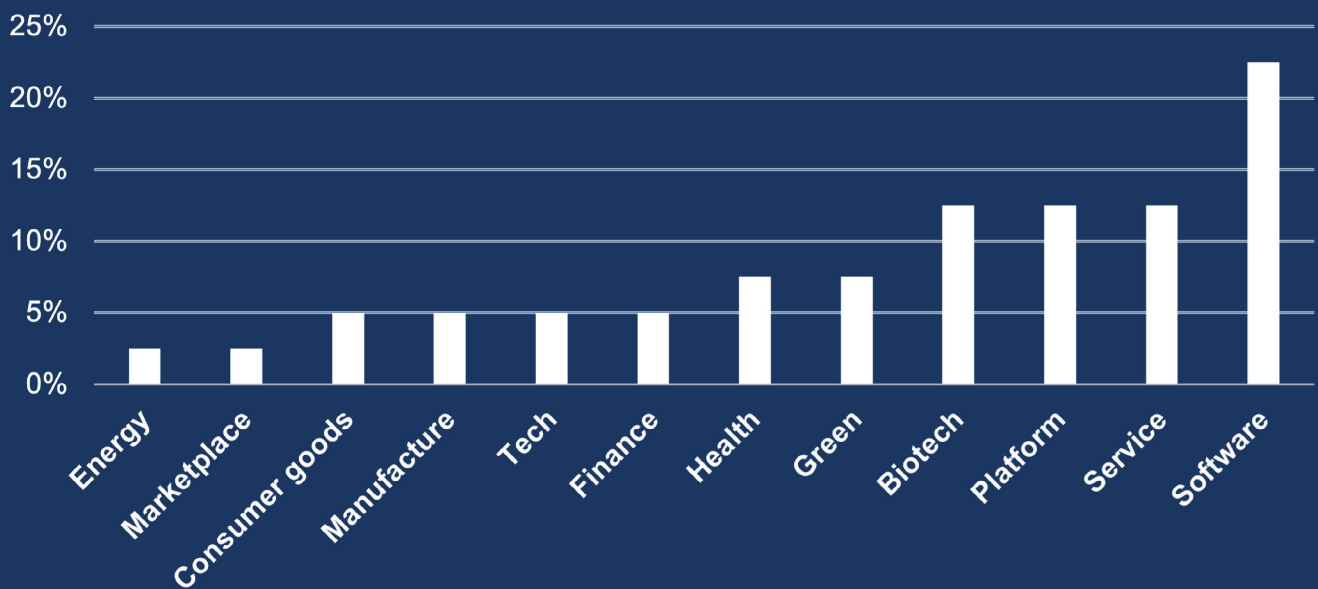
Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

Figure 8. **Denmark**, sector of succesful businesses founded in 5 years



Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

Figure 7. **Sweden**, sector of succesful businesses founded in 5 years



Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

The new successful companies of Norway are focused to platform, service, and tech (Figure 10). As Norway has significant activity in industries, including the oil and gas sector, a sixth of the new successful companies in the regions of Norway is focused on providing various technological solutions. In the rest of the Nordics, the tech sector is not a major focus for new innovative companies. One-fifth of the Baltic innovative companies are focused on providing various forms of services, while another fifth is found in the finance sector – often linked to various blockchain solutions (Figure 11).

More than one out of twenty new successful Nordic companies are found in the manufacturing sector, and the same share is also found in companies that offer various green solutions (green firms are those that offer environmentally friendly solutions or are engaged in food/forestry sectors). Nearly one out of twenty new

successful businesses are found in biotech, a field in which Denmark and Finland are particularly strong. Consumer goods, health, energy, and marketplace are the least common sectors for new successful companies in the Nordics. Marketplace businesses are relatively strong in the Baltics, while Sweden and Finland have relatively many companies in health.



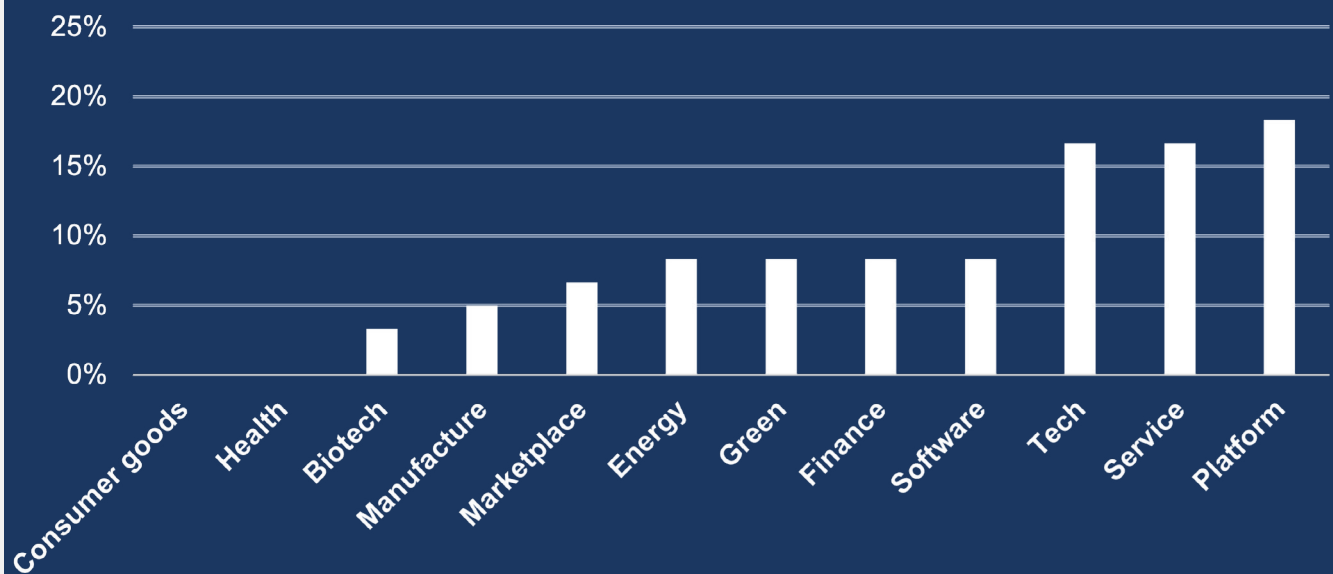
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**Taken together, the greater Nordic region has successful new innovative companies in all sectors. The 28 regions of the greater Nordics are taken together a key player in global innovation, and it is important to have a combined focus on these regions to truly understand their innovation capacity.**

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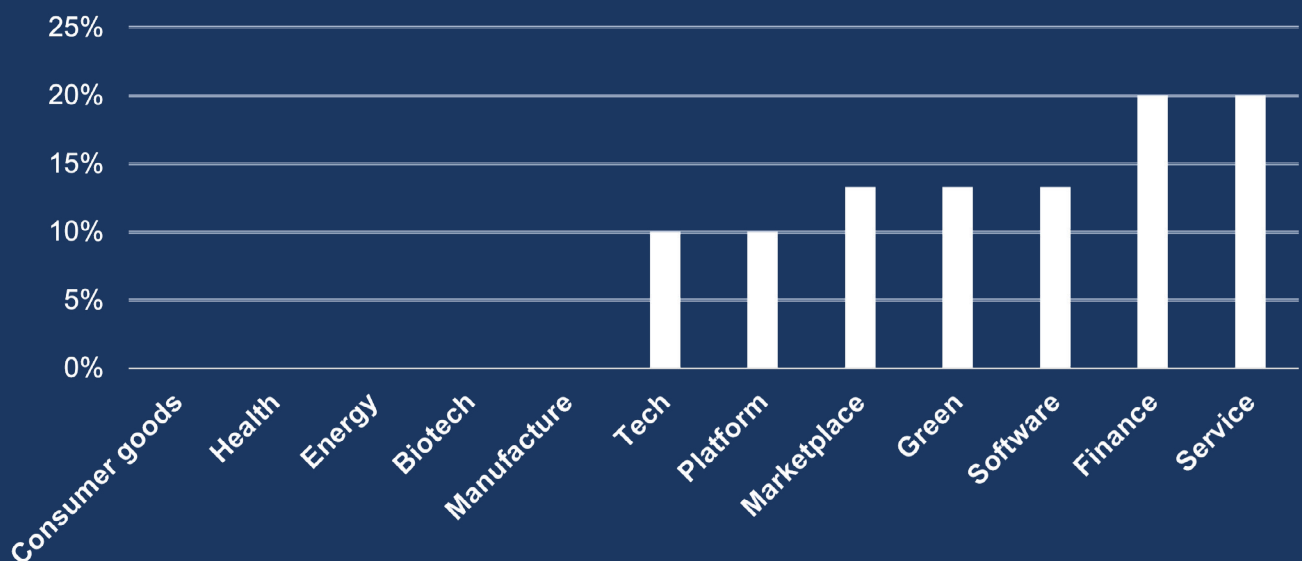
A clear pattern is that while the individual Nordic countries have relatively similar sector focus for new successful companies, there are also various forms of national specialization. Taken together, the greater Nordic region has successful new innovative companies in all sectors. The 27 regions of the greater Nordics are taken together a key player in global innovation, and it is important to have a combined focus on these regions to truly understand their innovation capacity.

Figure 10. **Norway**, sector of succesful businesses founded in 5 years



Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

Figure 11. **Baltics**, sector of succesful businesses founded in 5 years



Based on top-10 companies founded since 2018 ranked by Crunchbase, September 2022.

# Methodology

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Identifying and studying innovation-driven companies is a complex task, as traditional company databases provide incomplete information on the subject. The Nordic Innovation Triangle report uses a new methodology, which relies on Crunchbase. Crunchbase is a leading international company database, which includes information about companies' founders and key people, investments, industry trends, and innovations. Although Crunchbase is mainly used by investors and entrepreneurs, it has also been used in academic research. For example, in 2017, Jean-Michel Dalle, Matthijs den Besten, and Carlo Menoni published a study for the OECD on the possibilities of using Crunchbase for economic research and research in management. The authors noted that Crunchbase attracts interest from researchers in many fields, as it includes unique data on the start-up ecosystem.<sup>1</sup> Yuxian Eugene Liang and Soe-Tsy Daphne Yuan rely on Crunchbase to study investments in companies, on the grounds that Crunchbase is the largest database with a profile for the included companies.<sup>2</sup> Ross Brown and Augusto Rocha have used the database to study investors' actions during the uncertainty created by the covid-19 pandemic.<sup>3</sup> A crucial advantage of Crunchbase is that it allows for mapping out new successful firms, and makes it easier to understand their innovative activities. Data from Crunchbase is used to study the sector focus of the top-10 ranked companies, founded during the past five years (since 2018), in each of the Nordic regions.

Data on gross capital fixation have been gathered from Eurostat. Regional fixed capital formation data was used to identify the regional division of capital formation and coupled with national data to calculate the regional rate. Population data – needed to calculate capital investments per adult (20–64 years) – have been gathered via Eurostat. Investments in local currency other than Euro were calculated, based on the rate of national currencies to Euro at the end of September 2022. It is important to look at total capital investments in a region as a key component of regional growth strategies. The reason is that investments in infrastructure, properties and businesses, go hand in hand—regions need to attract significant capital for investments to be carried out in all this, to not have

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<sup>1</sup> Dalle, Den Besten & Menon (2017).

<sup>2</sup> Liang & Yuan (2016).

<sup>3</sup> Brown & Rocha (2016).

bottlenecks for development. Information on firm innovation for each region was gathered from the European innovation scoreboard, and the Regional Innovation Scoreboard, published by the European Commission. SME firm innovation data on a regional level is a new data source gathered by the European innovation scoreboard. Currently, the share of innovative SMEs engaged in collaborations with others is estimated to be at the same level for all regions of Finland, an example that suggests that the data can become more precise in future years. Regional unemployment data, given as the average for the latest available years 2019 to 2021, has been gathered from the Eurostat database.

# Stockholm

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Stockholm is the capital city of Sweden and an innovation centre of global importance. Leading new companies of the region are focused to finance, health, and manufacture. Investments amount to 30 560 Euros (332 200 SEK) annually, per adult, which is 43 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this relation an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of Stockholm from 7.3 to 6.3 percent, or by 0.6 percentage points.

Fully 50 percent of the SMEs in the region have product innovations, 12 percentage points more than the average Nordic region. The share of SMEs with business process innovations is 55 percent in the region, 8 percentage points higher than the Nordic average. However, only 16 percent of innovative SMEs are engaged in collaborations with others, 4 percentage points lower than the Nordic average.



## Stockholm innovation brief

2021 capital investment per adult	<b>30 560 Euro</b> <b>332 200 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>+43%</b>
Regional unemployment level (average 2019–21)	<b>7.3%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.7%</b>
Product innovators, share % SMEs	<b>50%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+12%</b>
Business process innovators, share % SMEs	<b>55%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+8%</b>
Innovative businesses collaborating with others, share % SMEs	<b>16%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-4%</b>
Leading new companies focused in following sectors	<b>Finance Health Manufacture</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# West Sweden

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West Sweden is where Sweden's second-largest city, Gothenburg, is located. It is a region with a strong manufacturing tradition. Leading new companies of the region are focused to finance, manufacture, and software. Investments amount to 23 670 Euros (257 300 SEK) annually, per adult, which is 11 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of West Sweden from 7.3 to 6.9 percent, or by 0.4 percentage points.

46 percent of the SMEs in the region have product innovations, 8 percentage points more than the average Nordic region. The share of SMEs with business process innovations is 48 percent in the region, 1 percentage points higher than the Nordic average. However, only 13 percent of SMEs are innovation collaborators, 7 percentage points lower than the Nordic average.

## West Sweden innovation brief

2021 capital investment per adult	<b>23 670 Euro</b> <b>257 300 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>+11%</b>
Regional unemployment level (average 2019-21)	<b>7.3%</b>
Regional unemployment level if capital investments/ adult increased by 20%*	<b>6.9%</b>
Product innovators, share % SMEs	<b>46%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+8%</b>
Business process innovators, share % SMEs	<b>48%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+1%</b>
Innovative businesses collaborating with others, share % SMEs	<b>13%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-7%</b>
Leading new companies focused in following sectors	<b>Finance Manufacture Software</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

## South Sweden

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South Sweden is where Sweden's third-largest city, Malmö, is located. The region also has several other important innovative centres, such as the university city of Lund, as well as Helsingborg and Hässleholm. Leading new companies of the region are focused to platform solutions and health. Investments amount to 19 660 Euros (217 000 SEK) annually, per adult, which is 6 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of South Sweden from 10.2 to 9.8 percent, or by 0.4 percentage points.

49 percent of the SMEs in the region have product innovations, 11 percentage points more than the average Nordic region. The share of SMEs with business process innovations is fully 52 percent in the region, 5 percentage points higher than the Nordic average. However, only 16 percent of SMEs are innovation collaborators, 4 percentage points lower than the Nordic average.

## South Sweden innovation brief

2021 capital investment per adult	<b>19 960 Euro</b> <b>217 000 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>-6%</b>
Regional unemployment level (average 2019-21)	<b>10.2%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>9.8%</b>
Product innovators, share % SMEs	<b>49%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+11%</b>
Business process innovators, share % SMEs	<b>52%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+5%</b>
Innovative businesses collaborating with others, share % SMEs	<b>16%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-4%</b>
Leading new companies focused in following sectors	<b>Platform Health</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# East Middle Sweden

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In the East Middle Sweden region, novel innovation firms can be found spread over medium-sized cities such as Uppsala, Örebro, Linköping, and Norrköping. Leading new companies of the region are focused to energy, manufacture, and platform solutions. Investments amount to 21 550 Euros (234 200 SEK) annually, per adult, which is 1 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of East Middle Sweden from 8.8 to 8.4 percent, or by 0.4 percentage points.

36 percent of the SMEs in the region have product innovations, 2 percentage points lower than the average Nordic region. The share of SMEs with business process innovations is fully 51 percent in the region, 3 percentage points higher than the Nordic average. However, only 15 percent of SMEs are innovation collaborators, 5 percentage points lower than the Nordic average.

## East Middle Sweden innovation brief

2021 capital investment per adult	<b>21 500 Euro</b> <b>234 200 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>+1%</b>
Regional unemployment level (average 2019–21)	<b>8.8%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>8.4%</b>
Product innovators, share % SMEs	<b>36%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-2%</b>
Business process innovators, share % SMEs	<b>51%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+3%</b>
Innovative businesses collaborating with others, share % SMEs	<b>15%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-5%</b>
Leading new companies focused in following sectors	<b>Energy Manufacture Platform</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

## Småland and islands

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The Småland and the islands region has novel innovation firms spread out across several cities, such as Jönköping, Växjö, Kalmar, and Bodafors. Leading new companies of the region are focused to service, and platform solutions. Investments amount to 17 960 Euros (195 300 SEK) annually, per adult, which is 16 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Småland and island region from 7.1 to 6.8 percent, or by 0.3 percentage points.

44 percent of the SMEs in the region have product innovations, 6 percentage points higher than the average Nordic region. The share of SMEs with business process innovations is 48 percent in the region, 1 percentage point higher than the Nordic average. However, only 17 percent of SMEs are innovation collaborators, 3 percentage points lower than the Nordic average.



## Småland and islands innovation brief

2021 capital investment per adult	<b>17 960 Euro</b> <b>195 300 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>-16%</b>
Regional unemployment level (average 2019-21)	<b>7.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.8%</b>
Product innovators, share % SMEs	<b>44%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+6%</b>
Business process innovators, share % SMEs	<b>48%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+1%</b>
Innovative businesses collaborating with others, share % SMEs	<b>17%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-3%</b>
Leading new companies focused in following sectors	<b>Service Platform</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# North Middle Sweden

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North Middle Sweden is a region where novel innovation firms are found in several cities, including Gävle, Karlstad, Falun, Borlänge, and Arvika. Leading new companies of the region are focused to services. Investments amount to 15 910 Euros (172 900 SEK) annually, per adult, which is 25 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the North Middle Sweden region from 8.3 to 7.9 percent, or by 0.4 percentage points.

34 percent of the SMEs in the region have product innovations, 4 percentage points lower than the average Nordic region. The share of SMEs with business process innovations is 44 percent in the region, 4 percentage points lower than the Nordic average. 14 percent of SMEs are innovation collaborators, 6 percentage points lower than the Nordic average.

## North Middle Sweden innovation brief

2021 capital investment per adult	<b>15 910 Euro</b> <b>172 900 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>-25%</b>
Regional unemployment level (average 2019-21)	<b>8.3%</b>
Regional unemployment level if capital investments/ adult increased by 20%*	<b>7.9%</b>
Product innovators, share % SMEs	<b>34%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-4%</b>
Business process innovators, share % SMEs	<b>44%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-4%</b>
Innovative businesses collaborating with others, share % SMEs	<b>14%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-6%</b>
Leading new companies focused in following sectors	<b>Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Middle Norrland

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In the Middle Norrland region of Sweden, novel innovation firms can be found in cities such as Östersund, Sundsvall, Sollefteå, Örnsköldsvik, Näsåker, and Åre. Leading new companies of the region are focused to software, and to services. Investments amount to 21 830 Euros (237 300 SEK) annually, per adult, which is 2 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Middle Norrland region from 6.8 to 6.4 percent, or by 0.4 percentage points.

37 percent of the SMEs in the region have product innovations, 1 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 38 percent in the region, 10 percentage points lower than the Nordic average. 14 percent of SMEs are innovation collaborators, 6 percentage points lower than the Nordic average.

## Middle Norrland innovation brief

2021 capital investment per adult	<b>21 830 Euro</b> <b>237 300 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>+2%</b>
Regional unemployment level (average 2019–21)	<b>6.8%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.4%</b>
Product innovators, share % SMEs	<b>37%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-1%</b>
Business process innovators, share % SMEs	<b>38%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-10%</b>
Innovative businesses collaborating with others, share % SMEs	<b>14%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-6%</b>
Leading new companies focused in following sectors	<b>Software Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Upper Norrland

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The Upper Norrland region has novel innovation firms in several cities, such as Umeå, Skellefteå, Gällivare, Luleå, and Kangos. Leading new companies in the region are focused to services, software, and tech. Investments amount to 25 640 Euros (278 700 SEK) annually, per adult, which is 20 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Upper Norrland region from 6.1 to 5.6 percent, or by 0.5 percentage points.

40 percent of the SMEs in the region have product innovations, 2 percentage points higher than the average Nordic region. The share of SMEs with business process innovations is 39 percent in the region, 8 percentage points lower than the Nordic average. 15 percent of SMEs are innovation collaborators, 5 percentage points lower than the Nordic average.

## Upper Norrland innovation brief

2021 capital investment per adult	<b>25 640 Euro</b> <b>278 700 SEK</b>
Capital investment relative to Nordic average (% difference)	<b>+20%</b>
Regional unemployment level (average 2019-21)	<b>6.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>5.6%</b>
Product innovators, share % SMEs	<b>40%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+2%</b>
Business process innovators, share % SMEs	<b>39%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-8%</b>
Innovative businesses collaborating with others, share % SMEs	<b>15%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-5%</b>
Leading new companies focused in following sectors	<b>Service Software Tech</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Helsinki

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The Helsinki Capital region is home to novel innovative firms in many different sectors. Leading new companies of the region are focused to software, platform, and services. Investments amount to 24 360 Euros annually, per adult, which is 14 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Helsinki region from 7.1 to 6.6 percent, or by 0.5 percentage points.

39 percent of the SMEs in the region have product innovations, 1 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is 56 percent in the region, 8 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.



## Helsinki innovation brief

2021 capital investment per adult	<b>24 360 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>+14%</b>
Regional unemployment level (average 2019–21)	<b>7.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.6%</b>
Product innovators, share % SMEs	<b>39%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+1%</b>
Business process innovators, share % SMEs	<b>56%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+8%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Software Platform Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Western Finland

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In the West Finland region, many novel innovation firms are focused to Tampere. Leading new companies of the region are focused to biotech, software, and services. Investments amount to 17 240 Euros annually, per adult, which is 19 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Western Finland region from 7.2 to 6.9 percent, or by 0.3 percentage points.

37 percent of the SMEs in the region have product innovations, 1 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 55 percent in the region, 7 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.

## Western Finland innovation brief

2021 capital investment per adult	<b>17 240 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-19%</b>
Regional unemployment level (average 2019-21)	<b>7.2%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.9%</b>
Product innovators, share % SMEs	<b>37%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-1%</b>
Business process innovators, share % SMEs	<b>55%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+7%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Biotech Software Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Southern Finland

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In the Southern Finland region, many novel innovation firms are focused to Turku. Leading new companies of the region are focused to biotech, finance, and software. Investments amount to 15 160 Euros annually, per adult, which is 29 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Southern Finland region from 7.1 to 6.8 percent, or by 0.3 percentage points.

32 percent of the SMEs in the region have product innovations, 6 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 46 percent in the region, 2 percentage points lower than the Nordic average. As in the rest of Finland, 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.

## Southern Finland innovation brief

2021 capital investment per adult	<b>15 160 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-29%</b>
Regional unemployment level (average 2019-21)	<b>7.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>6.8%</b>
Product innovators, share % SMEs	<b>32%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-6%</b>
Business process innovators, share % SMEs	<b>46%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-2%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Biotech Finance Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# North and Eastern Finland

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North and Eastern Finland is a large and sparsely populated part of the country, with many novel innovation firms focused to Oulu. Leading new companies of the region are focused to the green, health, and tech sectors. Investments amount to 16 670 Euros annually, per adult, which is 22 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the North and Eastern Finland region from 8.1 to 7.8 percent, or by 0.3 percentage points.

30 percent of the SMEs in the region have product innovations, 8 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 45 percent in the region, 2 percentage points lower than the Nordic average. As in the rest of Finland, 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.

## North & Eastern Finland innovation brief

2021 capital investment per adult	<b>16 670 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-22%</b>
Regional unemployment level (average 2019-21)	<b>8.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>7.8%</b>
Product innovators, share % SMEs	<b>30%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-8%</b>
Business process innovators, share % SMEs	<b>45%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-2%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Green Health Tech</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Copenhagen

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Copenhagen is the Danish capital region, closely connected to Sweden's third-largest city Malmö by the Öresund bridge, and a leading European innovation centre. Leading new companies of the region are focused to the platform, finance, and green sectors. Investments amount to 29 090 Euros (216 400 DKK) annually, per adult, which is 37 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Copenhagen region from 5.6 to 5.1 percent, or by 0.5 percentage points.

35 percent of the SMEs in the region have product innovations, 3 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is fully 58 percent in the region, 10 percentage points higher than the Nordic average. 15 percent of SMEs are innovation collaborators, 5 percentage points lower than the Nordic average.



## Copenhagen innovation brief

2021 capital investment per adult	<b>29 090 Euro</b> <b>216 400 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+37%</b>
Regional unemployment level (average 2019-21)	<b>5.6%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>5.1%</b>
Product innovators, share % SMEs	<b>35%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-3%</b>
Business process innovators, share % SMEs	<b>58%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+10%</b>
Innovative businesses collaborating with others, share % SMEs	<b>15%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-5%</b>
Leading new companies focused in following sectors	<b>Platform Finance Green</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Sjælland

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The Sjælland region of Denmark has innovation firms spread across several cities, such as Nykøbing Falster, Roskilde, Vesterborg, Korsør and Viby. Leading new companies of the region are focused to the platform, service, and manufacture sectors. Investments amount to 14 870 Euros (110 600 DKK) annually, per adult, which is 30 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Sjælland region from 5.1 to 4.8 percent, or by 0.3 percentage points.

28 percent of the SMEs in the region have product innovations, 10 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 33 percent in the region, 14 percentage points lower than the Nordic average. 13 percent of SMEs are innovation collaborators, 7 percentage points lower than the Nordic average.

## Sjælland innovation brief

2021 capital investment per adult	<b>14 870 Euro</b> <b>110 600 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>-30%</b>
Regional unemployment level (average 2019-21)	<b>5.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>4.8%</b>
Product innovators, share % SMEs	<b>28%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-10%</b>
Business process innovators, share % SMEs	<b>33%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-14%</b>
Innovative businesses collaborating with others, share % SMEs	<b>13%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-7%</b>
Leading new companies focused in following sectors	<b>Platform Service</b> <b>Manufacture</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# South Denmark

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The South Denmark region has novel innovative companies in cities such as Odense, the third-largest city in the country, and Kobenhoved, Ullerslev, Kolding and Højbjerg. Leading new companies of the region are focused to the platform, biotech, and tech sectors. Investments amount to 20 270 Euros (150 800 DKK) annually, per adult, which is 5 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the South Denmark region from 4.8 to 4.4 percent, or by 0.4 percentage points.

27 percent of the SMEs in the region have product innovations, 11 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 39 percent in the region, 9 percentage points lower than the Nordic average. 14 percent of SMEs are innovation collaborators, 6 percentage points lower than the Nordic average.

## South Denmark innovation brief

2021 capital investment per adult	<b>20 270 Euro</b> <b>150 800 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>-5%</b>
Regional unemployment level (average 2019-21)	<b>4.8%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>4.4%</b>
Product innovators, share % SMEs	<b>27%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-11%</b>
Business process innovators, share % SMEs	<b>39%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-9%</b>
Innovative businesses collaborating with others, share % SMEs	<b>14%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-6%</b>
Leading new companies focused in following sectors	<b>Platform Biotech Tech</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Midtjylland

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The Midtjylland region of Denmark has many innovation firms in Aarhus, the second-largest city of Denmark and an important innovation centre. Leading new companies of the region are focused to the finance, and service sectors. Investments amount to 20 570 Euros (153 000 DKK) annually, per adult, which is 3 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Midtjylland region from 5.1 to 4.7 percent, or by 0.4 percentage points.

34 percent of the SMEs in the region have product innovations, 4 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is fully 52 percent in the region, 5 percentage points higher than the Nordic average. 15 percent of SMEs are innovation collaborators, 5 percentage points lower than the Nordic average.

## Midtjylland innovation brief

2021 capital investment per adult	<b>20 570 Euro</b> <b>153 000 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>-3%</b>
Regional unemployment level (average 2019-21)	<b>5.1%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>4.7%</b>
Product innovators, share % SMEs	<b>34%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-4%</b>
Business process innovators, share % SMEs	<b>52%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+5%</b>
Innovative businesses collaborating with others, share % SMEs	<b>15%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-5%</b>
Leading new companies focused in following sectors	<b>Finance Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Nordjylland

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The novel innovation firms of the Nordjylland region are mainly found in Aalborg, Denmark's fourth-largest city, and Vodskov and Norresundby. Leading new companies of the region are focused to the tech, and service sectors. Investments amount to 20 430 Euros (152 000 DKK) annually, per adult, which is 4 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Nordjylland region from 5.5 to 5.1 percent, or by 0.4 percentage points.

35 percent of the SMEs in the region have product innovations, 3 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 48 percent in the region, same as the Nordic average. 13 percent of SMEs are innovation collaborators, 7 percentage points lower than the Nordic average.



## Nordjylland innovation brief

2021 capital investment per adult	<b>20 430 Euro</b> <b>152 000 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>-4%</b>
Regional unemployment level (average 2019-21)	<b>5.5%</b>
Regional unemployment level if capital investments/ adult increased by 20%*	<b>5.1%</b>
Product innovators, share % SMEs	<b>35%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-3%</b>
Business process innovators, share % SMEs	<b>48%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>Same as average</b>
Innovative businesses collaborating with others, share % SMEs	<b>13%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-7%</b>
Leading new companies focused in following sectors	<b>Tech Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Oslo

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Oslo is the capital region of Norway, and an important European centre for entrepreneurship and business. Leading new companies of the region are focused to the platform and tech sectors. Investments amount to 30 280 Euros (310 700 NOK) annually, per adult, which is 42 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Oslo region from 4.5 to 3.9 percent, or by 0.6 percentage points. Oslo however already has significant investments per adult and a low unemployment rate.

49 percent of the SMEs in the region have product innovations, 11 percentage points higher than the average Nordic region. The share of SMEs with business process innovations is fully 56 percent in the region, 9 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.

## Oslo innovation brief

2021 capital investment per adult	<b>30 280 Euro</b> <b>310 700 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+42%</b>
Regional unemployment level (average 2019-21)	<b>4.5%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>3.9%</b>
Product innovators, share % SMEs	<b>49%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+11%</b>
Business process innovators, share % SMEs	<b>56%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+9%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Platform Tech</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Innlandet

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Innlandet is the only landlocked region of Norway, with Hammar as the largest city. Leading new companies of the region are focused to the service sector. Investments amount to 29 770 Euros (305 500 NOK) annually, per adult, which is 40 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Innlandet region from 3.5 to 2.9 percent, or by 0.6 percentage points. Innlandet however already has significant investments per adult, and also a very low unemployment rate.

49 percent of the SMEs in the region have product innovations, 11 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is fully 53 percent in the region, 5 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, as in the rest of Norway 8 percentage points higher than the Nordic average.

## Innlandet innovation brief

2021 capital investment per adult	<b>29 770 Euro</b> <b>305 500 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+40%</b>
Regional unemployment level (average 2019–21)	<b>3.5%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>2.9%</b>
Product innovators, share % SMEs	<b>49%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+11%</b>
Business process innovators, share % SMEs	<b>53%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+5%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Trondelag

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The Trondelag region of Norway is a central part of the country, and includes the city of Trondheim, the fourth largest city in the country. Leading new companies of the region are focused to the tech sector. Investments amount to 32 240 Euros (330 800 NOK) annually, per adult, which is 51 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Trondelag region from 3.5 to 2.9 percent, or by 0.6 percentage points. Trondelag however already has significant investments per adult, and combines this with a very low unemployment rate.

49 percent of the SMEs in the region have product innovations, 11 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is fully 60 percent in the region, 13 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, as in the rest of Norway 8 percentage points higher than the Nordic average.

## Trondelag innovation brief

2021 capital investment per adult	<b>32 240 Euro</b> <b>330 800 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+51%</b>
Regional unemployment level (average 2019-21)	<b>3.5%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>2.9%</b>
Product innovators, share % SMEs	<b>49%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+11%</b>
Business process innovators, share % SMEs	<b>60%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+13%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Tech</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# North Norway

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The novel innovative companies of the North Norway region are mainly found in Tromsø, but also places such as Bodø, Nordfjordnes, and Narvik. Leading new companies of the region are focused to the energy, platform, and software sectors. Investments amount to 31 840 Euros (326 700 NOK) annually, per adult, which is 49 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the North Norway region from 3.4 to 2.8 percent, or by 0.6 percentage points. Like other regions of Norway, North Norway however already has significant investments per adult, and combines this with a low unemployment rate.

33 percent of the SMEs in the region have product innovations, 6 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 39 percent in the region, 8 percentage points lower than the Nordic average. 28 percent of SMEs are innovation collaborators, as in the rest of Norway 8 percentage points higher than the Nordic average.



## North Norway innovation brief

2021 capital investment per adult	<b>31 840 Euro</b> <b>326 700 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+49%</b>
Regional unemployment level (average 2019-21)	<b>3.4%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>2.8%</b>
Product innovators, share % SMEs	<b>33%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-6%</b>
Business process innovators, share % SMEs	<b>39%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-8%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Energy Platform Software</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Agder and Sor-Ostlandet

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The Agder and Sor-Ostlandet region of Norway includes southern and eastern Norway, and cities such as Kristianstad, Arendal, and Skien. Leading new companies of the region are focused to the service, manufacture, and energy sectors. Investments amount to 24 790 Euros (254 300 NOK) annually, per adult, which is 16 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Agder and Sor-Ostlandet region from 4.4 to 3.9 percent, or by 0.5 percentage points.

44 percent of the SMEs in the region have product innovations, 6 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is fully 52 percent in the region, 4 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, as in the rest of Norway 8 percentage points higher than the Nordic average.

## Agder and Sor-Ostlandet innovation brief

2021 capital investment per adult	<b>24 790 Euro</b> <b>254 300 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+16%</b>
Regional unemployment level (average 2019-21)	<b>4.4%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>3.9%</b>
Product innovators, share % SMEs	<b>44%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+6%</b>
Business process innovators, share % SMEs	<b>52%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+4%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Service Manufacture Energy</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Vestlandet

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The novel innovative companies of the Norwegian Vestlandet region are mainly found in Bergen, the second-largest city in Norway and an essential seat for innovation. Leading new companies of the region are focused to the service, tech, and platform sectors. Investments amount to 29 530 Euros (303 100 NOK) annually, per adult, which is 39 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of the Vestlandet region from 3.9 to 3.3 percent, or by 0.6 percentage points. Like other regions of Norway, Vestlandet however already has significant investments per adult, and combines this with a low unemployment rate.

46 percent of the SMEs in the region have product innovations, 7 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is fully 52 percent in the region, 4 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, as in the rest of Norway 8 percentage points higher than the Nordic average.

## Vestlandet innovation brief

2021 capital investment per adult	<b>29 530 Euro</b> <b>303 100 DKK</b>
Capital investment relative to Nordic average (% difference)	<b>+39%</b>
Regional unemployment level (average 2019-21)	<b>3.9%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>3.3%</b>
Product innovators, share % SMEs	<b>46%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+7%</b>
Business process innovators, share % SMEs	<b>52%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+4%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Service Tech Platform</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Iceland

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Iceland is a Nordic island nation, with some distance between it and the other Nordic nations and a more remote cold climate. While small, the nation is known for its innovative start-up environment. Leading new companies are focused to the tech, platform, and software sectors. Investments amount to 22 030 Euros annually, per adult, which is 3 percent higher than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of Iceland from 5.0 to 4.6 percent, or by 0.4 percentage points.

28 percent of the SMEs in the region have product innovations, 10 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 42 percent in the region, 6 percentage points lower than the Nordic average. 23 percent of SMEs are innovation collaborators, 3 percentage points higher than the Nordic average.

## Iceland innovation brief

2021 capital investment per adult	<b>22 030 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>+3%</b>
Regional unemployment level (average 2019-21)	<b>5.0%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>4.6%</b>
Product innovators, share % SMEs	<b>28%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-10%</b>
Business process innovators, share % SMEs	<b>42%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-6%</b>
Innovative businesses collaborating with others, share % SMEs	<b>23%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+3%</b>
Leading new companies focused in following sectors	<b>Tech Platform Software</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Estonia

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Estonia has over the last three decades evolved into a strong start-up economy. Leading new companies are focused to the finance, green, and software sectors. Investments amount to 11 690 Euros annually, per adult, which is 45 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of Estonia from 5.9 to 5.7 percent, or by 0.2 percentage points.

49 percent of the SMEs in the region have product innovations, 11 percentage point higher than the average Nordic region. The share of SMEs with business process innovations is fully 53 percent in the region, 5 percentage points higher than the Nordic average. 28 percent of SMEs are innovation collaborators, 8 percentage points higher than the Nordic average.



## Estonia innovation brief

2021 capital investment per adult	<b>11 690 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-45%</b>
Regional unemployment level (average 2019-21)	<b>5.9%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>5.7%</b>
Product innovators, share % SMEs	<b>49%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>+11%</b>
Business process innovators, share % SMEs	<b>53%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>+5%</b>
Innovative businesses collaborating with others, share % SMEs	<b>28%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>+8%</b>
Leading new companies focused in following sectors	<b>Finance Green Software</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Latvia

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Latvia has like its Baltic neighbours had a strong economic development over the last three decades, following independence. Leading new companies are focused to the marketplace, tech, and platform sectors. Investments amount to 7 010 Euros annually, per adult, which is 67 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of Latvia from 7.3 to 7.2 percent, or by 0.1 percentage points.

17 percent of the SMEs in the region have product innovations, 22 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 25 percent in the region, 23 percentage points lower than the Nordic average. 6 percent of SMEs are innovation collaborators, 14 percentage points lower than the Nordic average. Overall Latvia has relatively limited innovation activity amongst its SMEs.

## Latvia innovation brief

2021 capital investment per adult	<b>7 010 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-67%</b>
Regional unemployment level (average 2019-21)	<b>7.3%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>7.2%</b>
Product innovators, share % SMEs	<b>17%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-22%</b>
Business process innovators, share % SMEs	<b>25%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-23%</b>
Innovative businesses collaborating with others, share % SMEs	<b>6%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>-14%</b>
Leading new companies focused in following sectors	<b>Marketplace Tech Platform</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

# Lithuania

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Lithuania has like Estonia and Latvia had an impressive economic development the last three decades, after becoming independent from the Soviet Union. Leading new companies are focused to the marketplace, finance, and service sectors. Investments amount to 6 920 Euros annually, per adult, which is 68 percent lower than the Nordic average.

Nordic regions which have more capital investments tend to have lower unemployment rates. Based on this link an increase of capital investments per adult by one-fifth, would reduce the unemployment rate of Lithuania from 8.2 to 8.1 percent, or by 0.1 percentage points.

30 percent of the SMEs in the region have product innovations, 8 percentage point lower than the average Nordic region. The share of SMEs with business process innovations is 43 percent in the region, 4 percentage points lower than the Nordic average. 14 percent of SMEs are innovation collaborators, 7 percentage points lower than the Nordic average.

## Lithuania innovation brief

2021 capital investment per adult	<b>6 920 Euro</b>
Capital investment relative to Nordic average (% difference)	<b>-68%</b>
Regional unemployment level (average 2019-21)	<b>8.2%</b>
Regional unemployment level if capital investments/adult increased by 20%*	<b>8.1%</b>
Product innovators, share % SMEs	<b>30%</b>
Share of SMEs with product innovations, relative to Nordic average (%-points difference)	<b>-8%</b>
Business process innovators, share % SMEs	<b>43%</b>
Share of SMEs with business process innovation, relative to Nordic average (%-points difference)	<b>-4%</b>
Innovative businesses collaborating with others, share % SMEs	<b>14%</b>
Share of innovative SMEs collaborating with others, relative to Nordic average (%-points difference)	<b>7%</b>
Leading new companies focused in following sectors	<b>Marketplace Finance Service</b>

\* Based on the relation in Nordic regions, in which 10 000 Euros additional capital investment per adult is associated with 1 percentage points lower regional unemployment level.

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