

ENGLISH SUMMARY

INNOVATION MONITOR:
INNOVATION POTENTIAL AND
PERFORMANCE. A REGIONAL
COMPARISON

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A photograph of a man in a blue polo shirt operating a control panel in a factory setting. The panel has a screen displaying data and several buttons. The background is a blurred industrial environment.

Innovations- Monitoring Berlin

Berlins Innovationspotenziale und -leistungen
im regionalen Vergleich
Gesa Koglin

Report 2014

In a comparative study of all the German federal states, Berlin ranks at the top of many innovation indicators. One of Berlin's key strengths is in the 'Talents' area. In innovation research, graduates are considered an important input indicator, measuring the extent to which the required highly qualified personnel will be available in future. The 'Human resources devoted to science and technology' (HRST) indicator conveys an accurate picture of the current supply and the demand for suitable employees. The 'R&D personnel' indicator records the number of people who work directly in the area of research & development. In 2011 and 2012, the years studied, Berlin had over 18,000 graduates, 1.2 million personnel who meet the HRST criteria and 30,200 researchers and developers. In the federal state rankings, Berlin had a place in the top range in all three indicators. The capital city was even no. 1 for highly qualified personnel.

Berlin's unique science landscape is also evident in the sector analysis of the two most important indicators for research & development (R&D), R&D personnel and R&D expenditures. In Berlin, R&D is more strongly associated with public research than it is in other regions. A total of 60% of the researchers in Berlin work for universities and public research institutions, whereas only 40% of the R&D personnel work for commercial businesses. The same ratio applies for R&D expenditures in Berlin.

On the national level, this ratio is reversed. German businesses employ 60% of the R&D personnel and are responsible for 70% of the total R&D expenditures. Business' total research expenditures in Berlin (€1.4 billion) are primarily concentrated in the high technology industry and high-knowledge market services. In 2011, Berlin's businesses spent almost 80% of R&D expenditures (around €1 billion) in these areas. Taking the percentages into consideration, this means that the money spent in Berlin on R&D in high tech and high knowledge market services was twice as high as the national average. Berlin's economy is not only unique with regard to R&D distribution by sector and technology class, but also with regard to R&D distribution by company size. While large companies are responsible for most of the R&D in Germany (80%) and small and medium-sized companies (SME) for only 20%, the SME in the capital are responsible for a 40% share of the expenditures - almost twice as high as the national figure. The characteristics of Berlin's innovation landscape - public research as a strong engine of R&D, an above-average share of SME doing research and the concentration of industry resources on knowledge-based business sectors - have become more pronounced since 2007.

Berlin's companies are particularly innovative. Between 2010 and 2012, almost 60% of the companies in Berlin successfully launched new, innovative products and services. The German average is only 50%. Yet another of Berlin's key strengths becomes apparent here: in Germany, the share of companies with innovative products significantly increases with company size, but this correlation is not as strong in Berlin. In the capital, companies with up to 49 employees produce an above-average amount of innovation, while the corporations in Berlin with over 1,000 employees are less innovative than the national average. The stronger orientation to innovation of the companies in Berlin is the direct result of the city's SMEs and their greater readiness to innovate. Companies do not always have the capacity or special knowledge required to perform the development required themselves. This is why new products are not only developed in-house, but also within networks and partnerships in which knowledge is shared and pooled for the production of novel, innovative products and services.

Between 2010 and 2013, one-third of the actively innovating companies in Berlin developed new products or services in cooperation with external partners. In Germany as a whole, the figure is one-fourth. Here as well, the share of SMEs with innovation partnerships in Berlin is higher than that of the group in the national comparison.

The public authorities provide funding for innovation via subsidies, loans, equity or loan guarantees, for example. In comparison to companies Germany-wide, in Berlin the companies are much more successful at acquiring public monies for funding research and development. One-quarter of the actively innovating companies in Germany took advantage of public funding in 2012, whereas in Berlin the share was 35%.

There are also very different levels of internationalization within the various company size classes for both cooperative behaviour and the use of public innovation funding. For example, large companies cooperate with international partners as a rule when developing innovative products, while SMEs tend not to take advantage of the know-how of others (less than 5% do). In the same vein, one-third of the large companies used the EU's research funding in 2013. This funding did not play any role at all for very small companies with up to nine employees and very few companies with up to 49 employees took advantage of it either (approx. 10%).

In 2012, around 11,300 original, active start-ups were registered. Of them, 930 were high tech start-ups. That year, no other federal state registered as many high tech start-ups per 1,000 working adults as Berlin. At the same time, venture capital worth over €180 million flowed into the city - an amount equal to one-third of the total venture capital in Germany. Almost

80% of this sum, €140 million, was invested in internet and IT companies in Berlin. When looking at the national situation, however, remember that venture capital financing in Germany still trails in the international field. For example, Berlin's start-ups receive an average of 80% less capital than start-ups in Silicon Valley.

Berlin's businesses have a comparatively young, innovative product spectrum. In 2011, the companies earned 20% of their revenues with new products. On the national level, the share was 18%. The Berlin-based companies in the high tech area were particularly successful in the market with product improvements: they generated one-third of their revenues with improved products in 2011. On the national level, comparable companies were less successful (22%). In 2012, Berlin exported high tech goods valued at €7.6 billion - every other euro that Berlin's companies earn abroad is obtained with high tech products. This share is approximately equal to the German average. However, in this context remember that overall, the Berlin economy is less export-oriented.

Overview of Berlin's strengths in innovation

- Extensive pool of well-educated, creative people
- Strong science location
- Above-average share of actively researching, innovative SMEs
- profile as the location of a knowledge-based, technology-oriented economy
- Young, innovative product spectrum
- High proportion of start-ups in high tech sector

The study is available in German.

www.technoestiftung-berlin.de/publikationen

Contact:

Technoestiftung Berlin, Dr. Christian Hammel, Fasanenstraße 85, 10623 Berlin, +49 30 46 302 559, hammel@technoestiftung-berlin.de