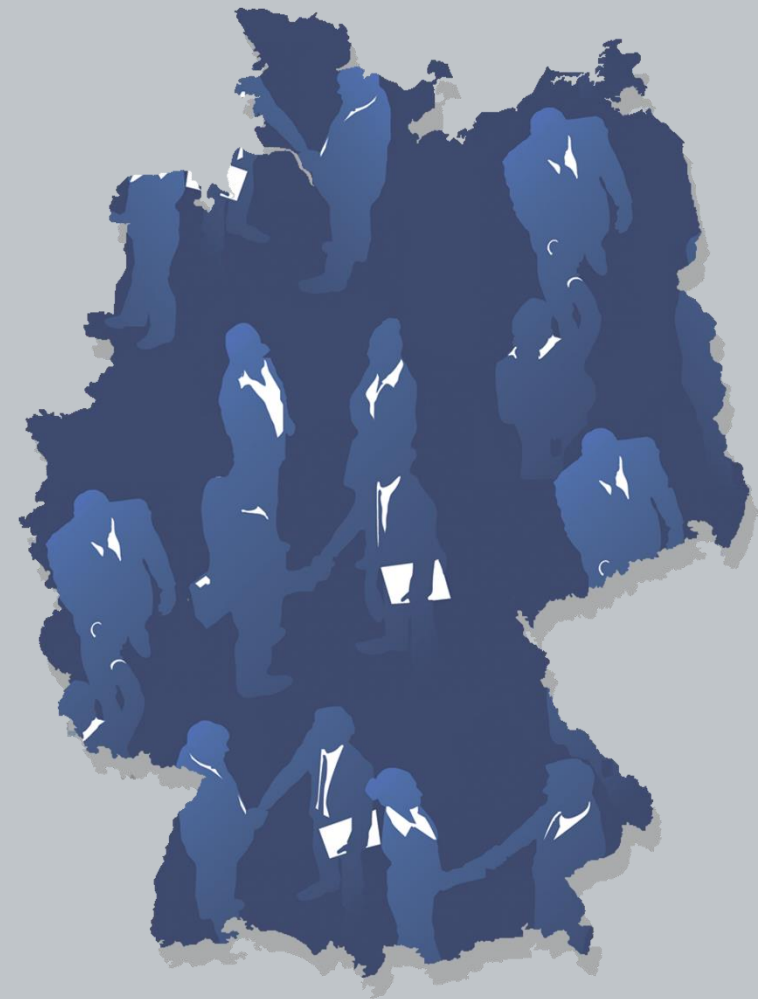


# State of University- Business Cooperation

# GERMANY

## Business Perspective

Study on the cooperation between  
higher education institutions and  
public and private organisations





## The State of German University-Business Cooperation: the business perspective

### Partners



**Authors:** Todd Davey, Thomas Baaken, Victoria Galán-Muros, Arno Meerman, Balzhan Orazbayeva, Sue Rossano, María Paula Troutt and Mihai Melonari.

For further information about the State of European University-Business Cooperation project, national reports or the Global Engagement Monitor, please contact Todd Davey ([davey@uiin.org](mailto:davey@uiin.org)) or Arno Meerman ([meerman@uiin.org](mailto:meerman@uiin.org))



# Executive summary

## Summary

This report aims at contributing to our understanding of the business perspective on university-business cooperation (UBC) in Germany. Examining the perceptions of a wide range of businesses provides positive signs for the future, with 98% of German businesses that already established relationships with universities planning to maintain or increase their cooperation in the future.

Yet, more can be done, for example in supporting businesses with the development of activities that facilitate their cooperation efforts beyond research initiatives, as well as in developing capabilities particularly of those businesses not currently engaged in cooperation.

## About the study

The results presented in this report reflect the perceptions of business representatives in Germany with respect to cooperation between universities and business. Data was collected by means of an online survey sent out via email to a European business database that was developed from publicly available information for 33 countries during October-November 2016, leading to a total of 325 German business responses. The study measured the perceptions of respondents with respect to their businesses and cooperation efforts.

## University-Business Cooperation

German businesses engage mostly in joint R&D. Half of the respondents indicated high extent of collaboration in this activity and its development is above the European average. As for UBC in education, mobility of students is reported to be the most developed activity, followed by dual education programmes. Particularly low is the activity of curriculum co-design. Valorisation and management activities are less developed with more than 50% of businesses in Germany not undertaking any of them at all.

German businesses perceive themselves as the major initiators reaching out for collaboration. They also see individual academics and university alumni as proactive actors in starting UBC. On the contrary, intermediaries (both internal and external) are identified as those stakeholders that less often initiate UBC.

## A matter of culture

The strongest barriers identified by respondents relate to cultural differences. The differing time horizons and differing motivations between universities and businesses are identified as the major barriers from the business' perspective. Furthermore, the university focus on producing scientific outcomes and bureaucracy related to UBC also hinder cooperation. German businesses also recognise a lack of their own funding for UBC as a barrier.

**NOTE:** This report provides a business perspective on university-business cooperation UBC, drawing on a survey of European higher education institutions, academics and businesses. While acknowledging limitations relating to the generalisability of the results due to the non-random nature of the sample, the results provide positive signs both of the present and for the future, while also providing an indication as to areas that require future development.

### **Relationships matter**

While funding to undertake cooperation emerges as one of the top five facilitators, factors related to the relationship are seen to be of even higher importance. It is the existence of trust, a shared goal, and mutual commitment that facilitate cooperation. These results indicate that any effort towards enabling cooperation between businesses and universities should focus on relationship development as the basis for fruitful collaboration. Furthermore, attractive IP conditions also play an important role in facilitating UBC for German businesses.

### **Pragmatic approach to UBC**

When engaging in cooperation with HEIs, German businesses are mainly driven by innovation and competitiveness motivations. Enhancing their innovation capacity, getting access to new technologies and discoveries as well as to better qualified graduates and obtaining a customised solution for their business are those motivators that stimulate cooperation for German companies. Notably, the willingness to impact society through collaboration is not considered as a motivation by German businesses.

### **UBC infrastructure to be advanced**

Although a strong emphasis has been placed on the development of UBC supporting mechanisms by universities, little is known about such mechanisms in the business realm. This study indicates that the

strategies are those mechanisms that reached the highest level of development, with a top-level management committed to UBC and a defined strategy for collaborating with HEIs being the most advanced. The mechanisms related to the allocation of resources to support UBC and the practise of recruiting PhD students are also common for over 40% of business respondents.

On the other hand, businesses represented in the sample are less involved in student and academic idea-competition activities as well as in lifelong learning programmes. Dedicated infrastructure is also less commonly adopted, with co-working spaces being among the least developed supporting UBC mechanisms.

### **Room for improvement in education activities**

German businesses perceive they are supportive towards UBC. Particularly, they recognise the important role of HEIs that they can play in their innovation efforts. Furthermore, businesses state they have the capability to absorb knowledge and technology from universities.

Yet, German businesses are less supportive towards UBC in education and find themselves least inclined towards taking the responsibility to collaborate with universities in this category. Similarly, they are significantly less satisfied with collaboration in education than with UBC in research.

# Introduction

## About the study

The study focuses on the cooperation between higher education institutions (HEIs) and public and private organisations in the 28 European Union Member States and 5 associated countries.

The State of European university-business cooperation (UBC) study is executed for the DG Education and Culture at the European Commission (EAC/10/2015) by a consortium led by the Science-to-Business Marketing Research Centre (S2BMRC), in Germany from January 2016 until November 2017.

The aim of the study is to get a more profound, comprehensive and up to date understanding of the state of UBC in Europe: what is the state of play of a wide range of UBC activities in the different countries, what are the main drivers and barriers for the different stakeholders and at what levels; what is the regulatory framework and socio-economic conditions and what kind of measures/initiatives exist on a national level to support the development of UBC. The project investigates UBC from the perspective of both university and business.

## Main activities

The main components of the project were a series of expert interviews with 23 recognised UBC experts, 52 good practice case studies, a UBC policy and indicators review as well as a major quantitative survey of stakeholders within both HEIs and business. The survey was translated into 25 languages and sent to all registered European HEIs (numbering over 3,000) in the 33 countries during

October-November 2016. Through this, a final sample of 17,410 representatives from within HEIs and business was achieved. This makes the study the largest international study into cooperation between HEIs and business yet completed.

## Why care about university-business cooperation?

- UBC is considered to be the engine towards knowledge-based societies and economies
- UBC is specially needed in the European context, threatened by increased global competition, with ongoing economic and social problems and high levels of youth unemployment
- UBC helps to create a more connected and functioning relationship between government, business and HEIs, which is at the core of EU funding schemes, such as Horizon 2020 and Erasmus+.
- UBC direct outcomes include:
  - improving the competitiveness of business,
  - increasing the relevance and innovativeness of research and teaching in HEIs,
  - improving the future job prospects of students and graduates,which can in the longer term:
  - create jobs,
  - stimulate economic growth,
  - increase living standards,
  - reduce hindrances to good living.

## Study Objectives

The specific objectives for the study are:

- Chart the current state of play and provide an in-depth analysis of UBC in the countries covered by this study, from the HE and business perspectives;
- Deliver 50 case studies of UBC (representative sample, balanced distribution among countries and organisations, balanced distribution of HEI and business led cases);
- Review indicators measuring UBC and propose possible scenarios for the implementations of UBC monitoring in Europe;
- Provide policy conclusions and recommendations for the furthering of UBC and the best approaches to take.



**UNIVERSITY-BUSINESS**  
COOPERATION IN EUROPE

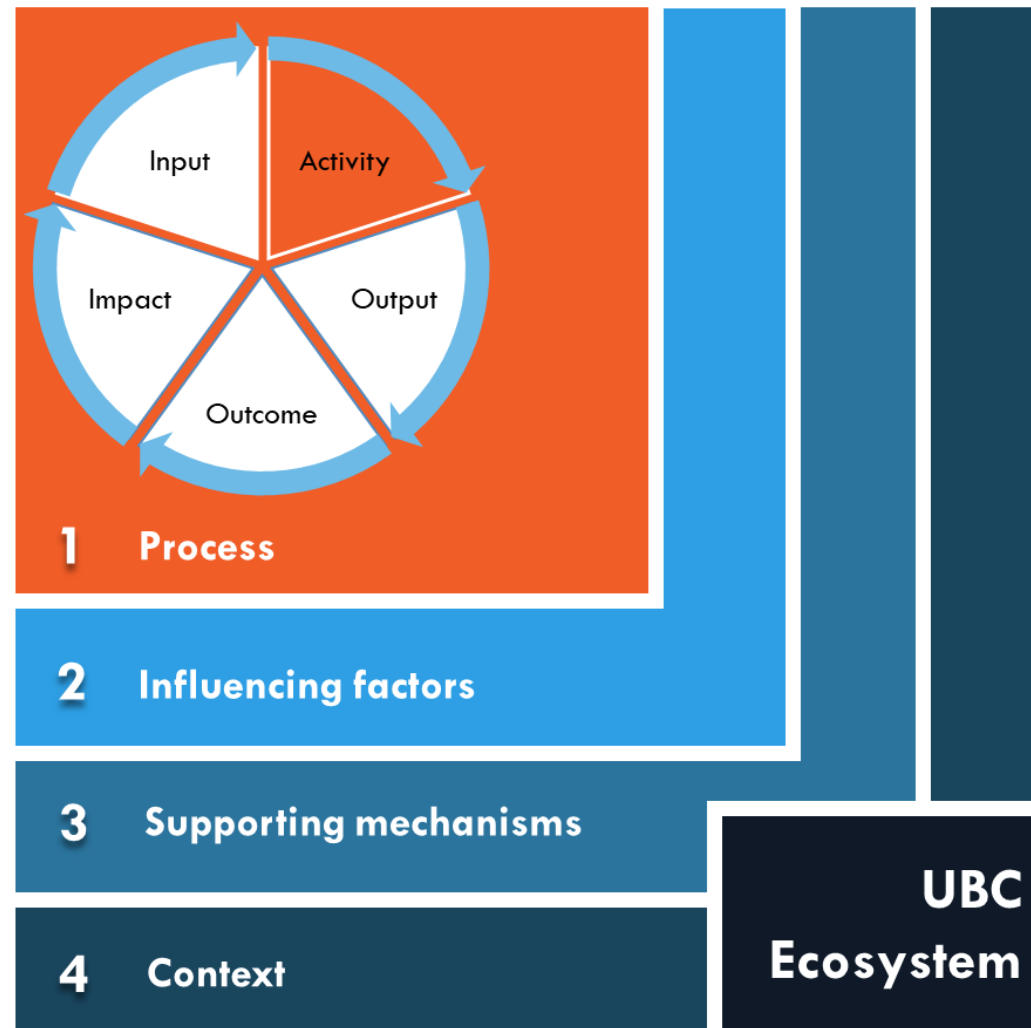
# UBC activities

## UBC Ecosystem Framework™

In order to best organise the project results, a project conceptual framework was chosen.

The UBC Ecosystem Framework possess a number of interrelated elements including the process of undertaking UBC, factors that are influencing UBC, mechanisms supporting UBC and finally the context in which UBC occurs.

The framework ties together the respective project activities, providing a common thread for reporting results and making recommendations.



Source: Galán-Muros, V.; Davey, T. (2017) *The UBC Ecosystem: Putting together a comprehensive framework for university-business cooperation*. *Journal of Technology Transfer*. <https://doi.org/10.1007/s10961-017-9562-3>



# UBC activities

Fourteen UBC activities are recognised, commonly categorised into the areas of education, research, valorisation and management.

Area	Activities
<b>Education</b>	<ol style="list-style-type: none"><li>1. curriculum co-<u>design</u></li><li>2. curriculum co-<u>delivery</u> (e.g. guest lectures)</li><li>3. mobility of students (i.e. student internships/placements)</li><li>4. dual education programmes (i.e. part theory, part practical)</li><li>5. lifelong learning for people from business (e.g. executive education, industry training and professional courses)</li></ol>
<b>Research</b>	<ol style="list-style-type: none"><li>6. joint R&amp;D (incl. joint funded research)</li><li>7. consulting to business (incl. contract research)</li><li>8. mobility of professionals (i.e. temporary mobility of academics to business and vice versa)</li></ol>
<b>Valorisation</b>	<ol style="list-style-type: none"><li>9. commercialisation of R&amp;D results (e.g. licencing/patenting)</li><li>10. academic entrepreneurship (e.g. spin offs)</li><li>11. student entrepreneurship (e.g. start-ups)</li></ol>
<b>Management</b>	<ol style="list-style-type: none"><li>12. governance (e.g. participation of academics on business boards and businesspeople participation in university board)</li><li>13. shared resources (e.g. infrastructure, personnel, equipment)</li><li>14. industry support (e.g. endowments, sponsorship and scholarships)</li></ol>

# Development of UBC activities

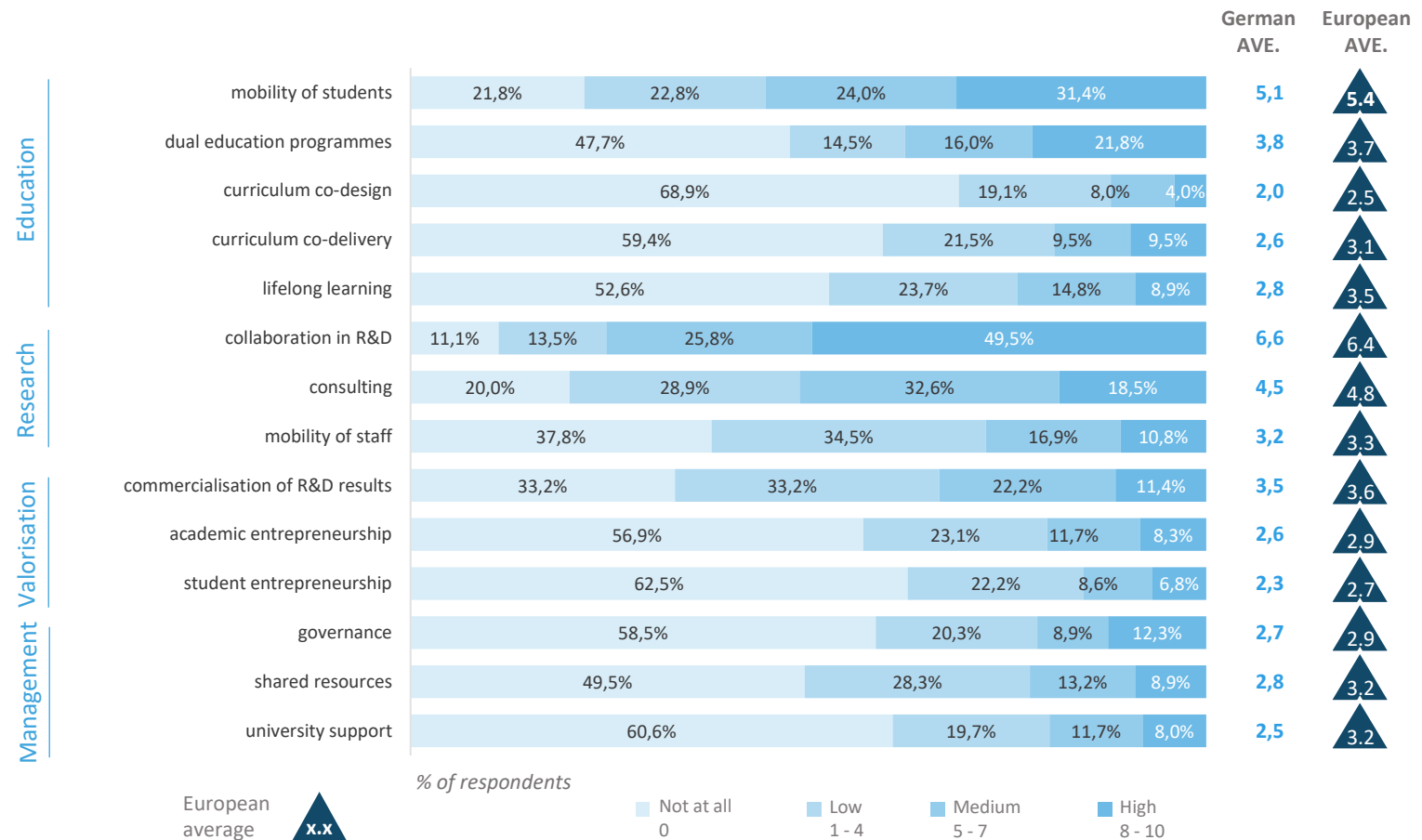
German businesses engage mostly in collaboration in R&D (6.6) and mobility of students (5.1), which are seen as traditional cooperation forms in the German context. Other activities are less known or less developed as German businesses have generally less experience in them. Overall, compared to European average the extent of German UBC is very similar.

In particular, the least developed are the activities of curriculum co-design, student entrepreneurship and university support.

Over 50% of businesses do not undertake any management or valorisation related collaboration (with the exception of commercialisation of R&D results and shared resources).

## UBC activities development

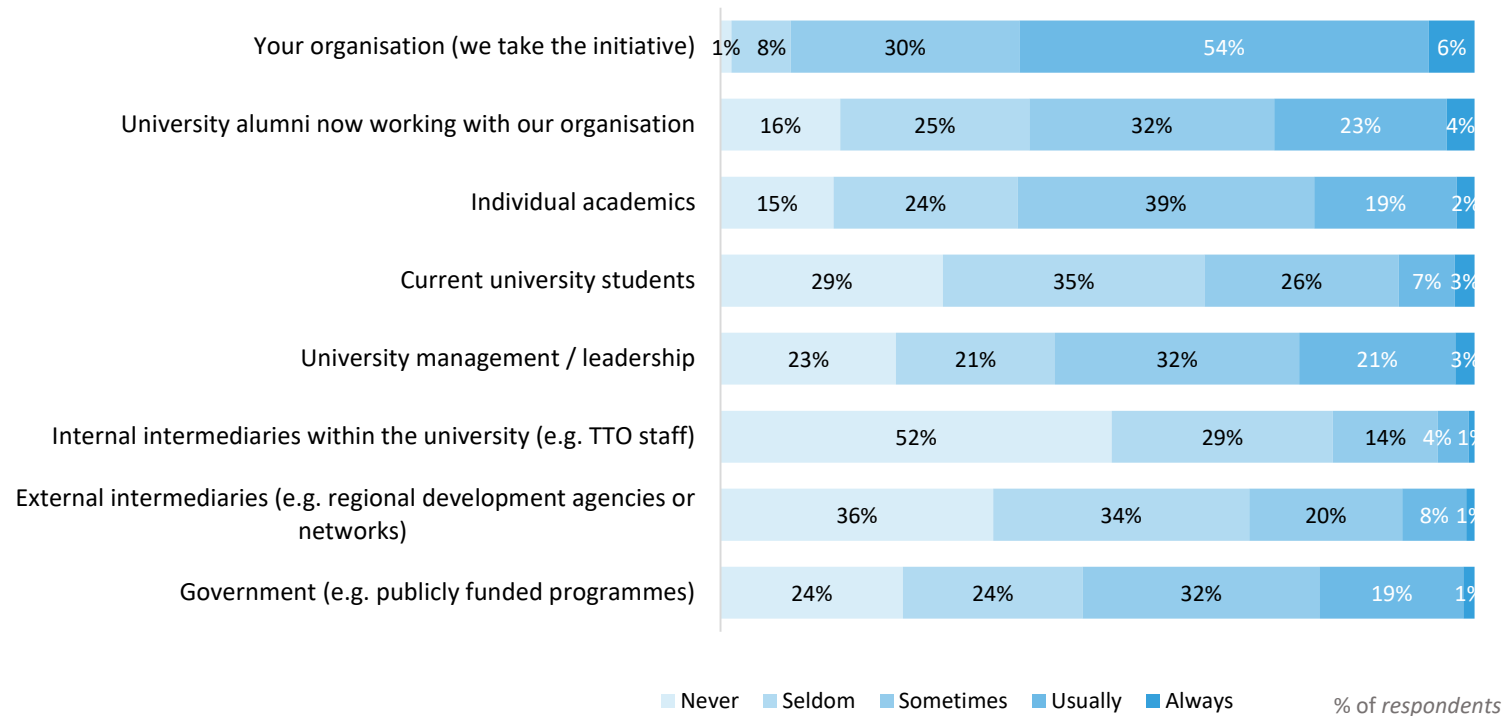
*'Which UBC activities do you collaborate with universities in?'*



# Initiation of UBC

## How UBC is initiated

*'How often various stakeholders initiate UBC activities'*



German businesses clearly see themselves as the main initiators of cooperation with universities. 60% of business state that their organisation always or usually initiates UBC.

Individual academics and university alumni working with their organisation are also received by German businesses to have an active role in initiating cooperation, although to a lesser extent.

Both internal and external intermediaries are perceived as passive in UBC initiation. 81% and 70% of the businesses respectively report that they never or seldom undertake any first actions towards UBC initiation. Currently, these organisations or individuals still lack necessary knowledge and competencies to act as a bridge between business and academia in the German context.

Similarly, 63% and 44% of business perceive that current university students and university managers respectively never or seldom initiate UBC.

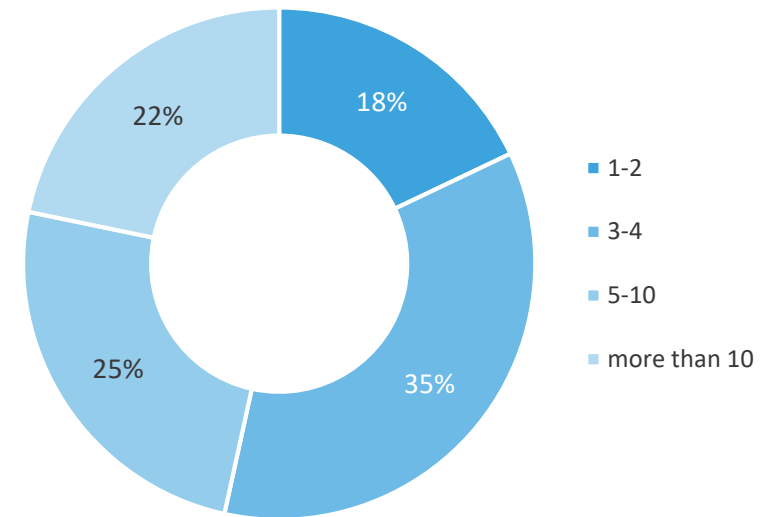
# Geographical location still matters

## Location of university partners

Percentage of cooperating businesses with...	
universities in their region	94%
universities in their country	94%
universities outside their country	76%

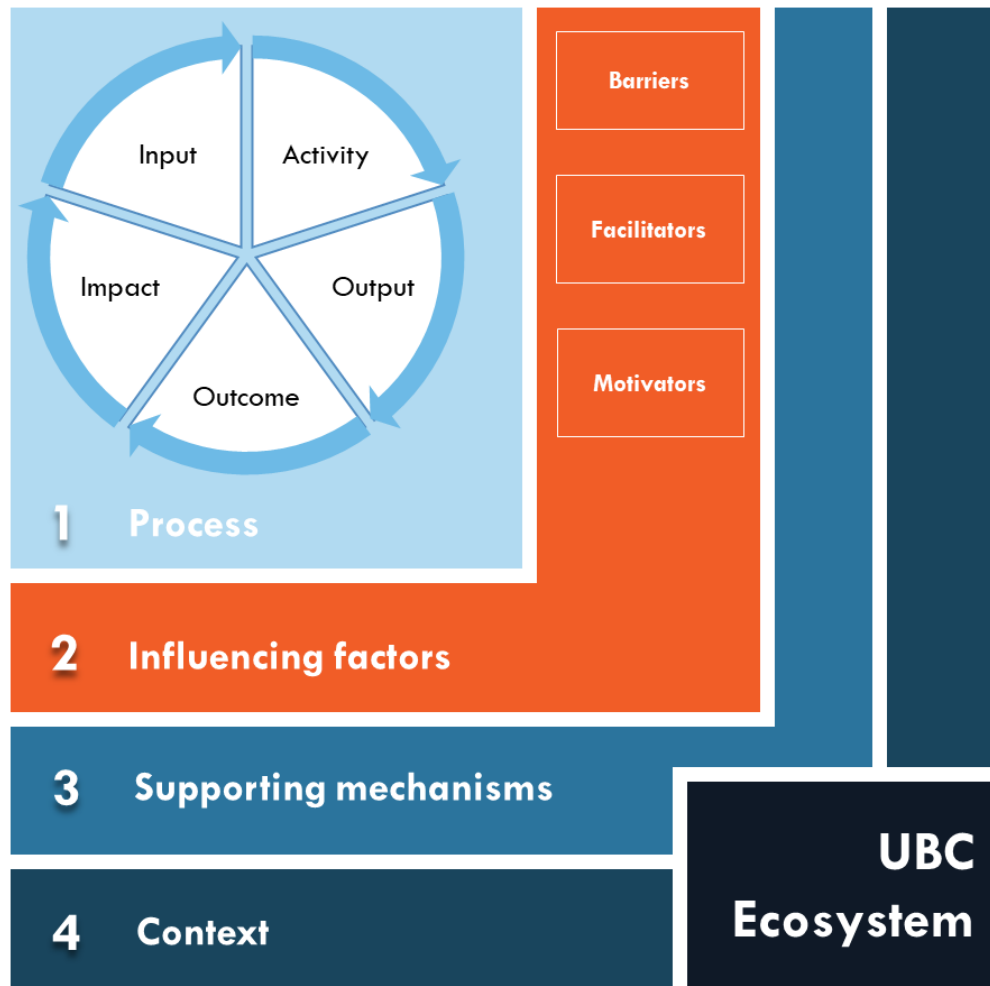
While most German businesses cooperate with German universities (94%) and with partners from the region (94%) they also cooperate with universities outside Germany (76%).

## Number of university partners



More than half (53%) of the German businesses cooperate with less than 4 university partners. While 25% have established relations with 5-10 partners, 22% cooperate with over 10 universities.

# Factors influencing UBC



This section outlines the extent to which various factors affect UBC.

Generally, a barrier provides a hindrance or obstacle to do something. Drivers comprise facilitators, which enable or ease the process, and the motivators, which triggers the starting of an activity and are often related to the expected outcome(s).

At the European level, this study has found that removing a barrier does not necessarily create UBC but rather it makes UBC possible. Instead, it is the facilitators and motivators (drivers) that initiate UBC.

For example, even when a lack of funds is often named as a major barrier to cooperation, the presence of funds may not be enough for cooperation to happen if the perceived facilitators or motivators are not sufficient.

# Barriers hindering UBC

The main five factors inhibiting German businesses to cooperate with universities are diverse.

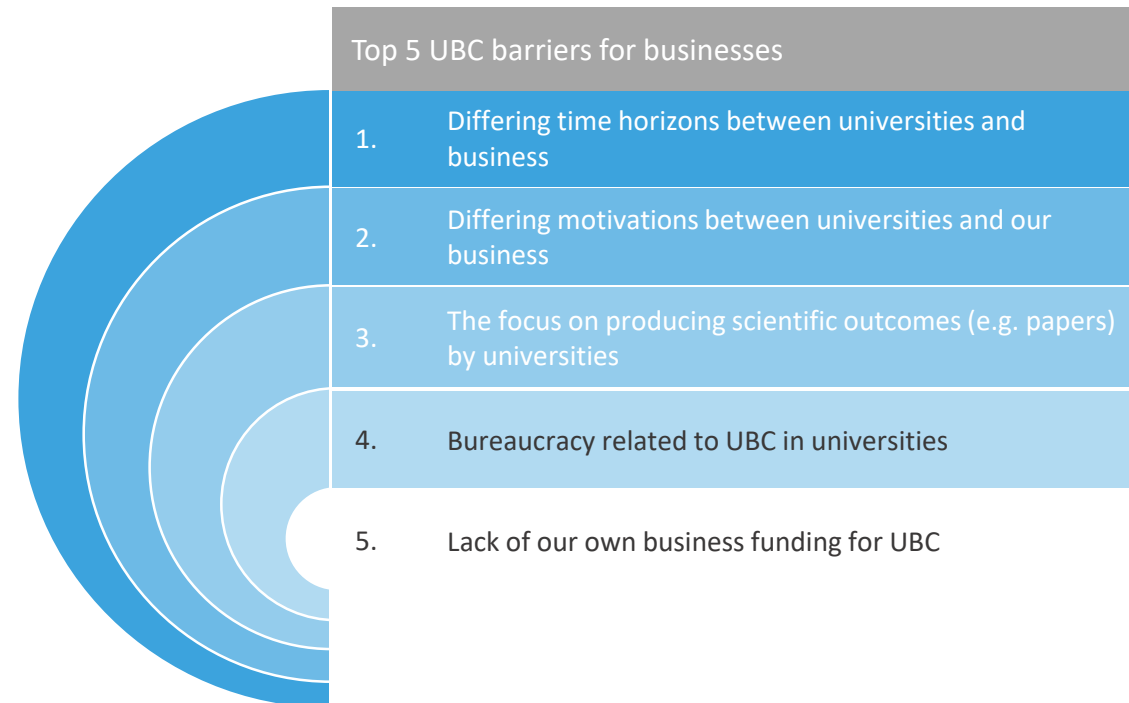
The main ones are related to cultural differences, such as the differing time horizons and the differing motivation between universities and business.

The focus on producing scientific outcomes by universities as well as the bureaucracy related to UBC in universities are also important barriers for businesses. There is a gap between the basic and blue sky research of the traditional universities and the ability to utilise these results. There tends to be a difference, however, when collaborating with technological universities and universities of applied sciences that are traditionally more applied in nature.

The lack of the own funding for UBC is the fifth most inhibiting barrier and the only financial barrier in the top five according to German business.

## Barriers

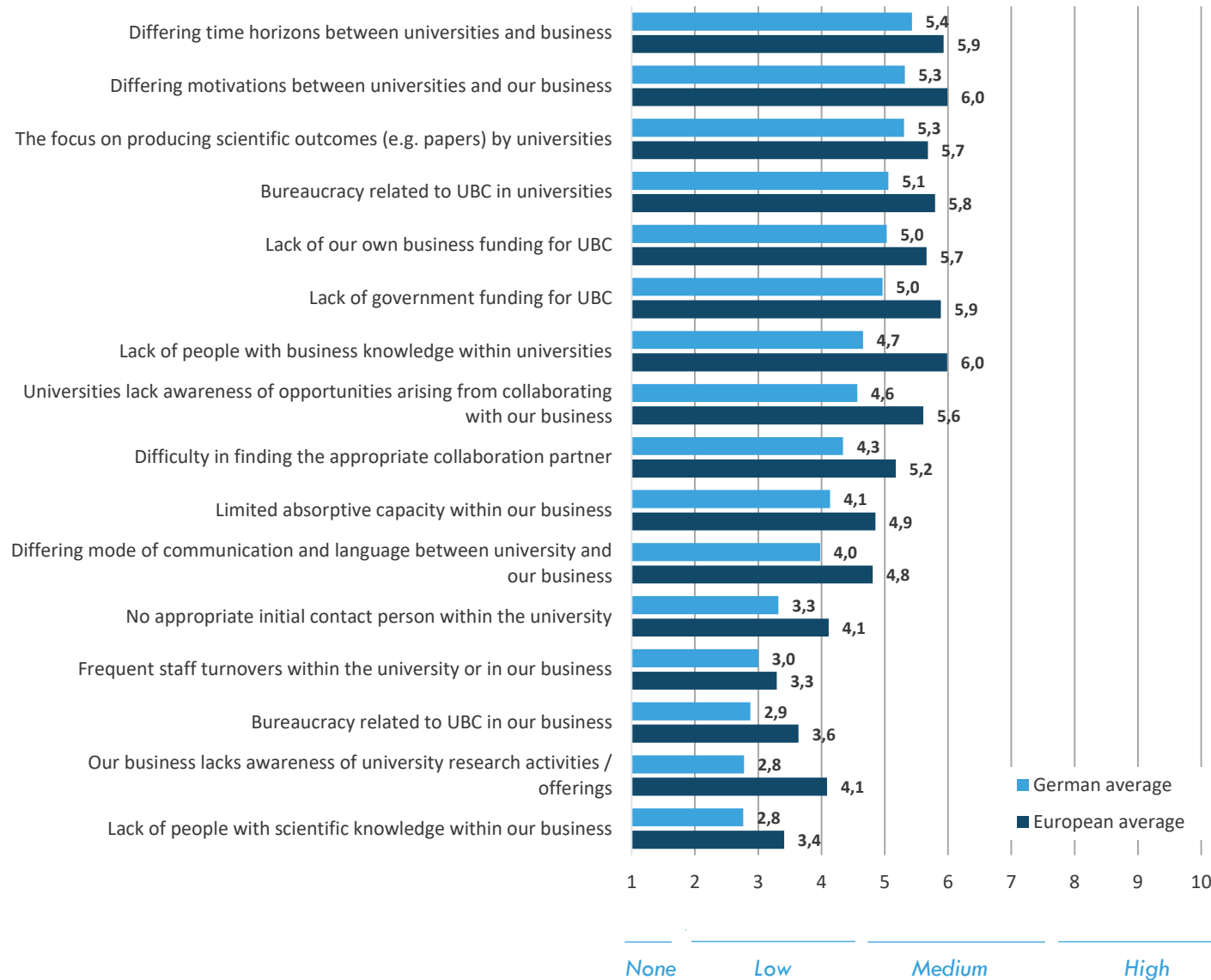
*'What is inhibiting your cooperation with universities?'*



# Barriers hindering UBC

## Barriers

'What is inhibiting your cooperation with universities?'



German businesses perceive barriers to UBC to be lower than their European counterparts.

The lack of awareness of both university and businesses and the lack of people with business knowledge within HEIs are significantly stronger barriers for European businesses than they are for German businesses. If cultures and expectations of involved organisations clash, the risk of failing the cooperation is high. Therefore, in the first place, there is need for significantly more time to align interests and objectives.

Thus the two strongest barriers emerged for both groups are related to the cultural issues such as differing time horizons and differing motivations between cooperating organisations.

Lack of people with scientific knowledge within business is the weakest barrier perceived by the German businesses.

# Drivers stimulating UBC

The main factors that facilitate German business cooperation with universities are related to their personal relationships.

A relationship based on trust, shared goal and mutual commitment highly facilitate cooperation for German businesses, resulting in a smoother and more successful collaboration with universities.

The existence of funding to undertake UBC as well as attractive IP conditions for business are also likely to play an important role in facilitating UBC. German organisations want to have a clear and common understanding on their rights and opportunities in order to engage in UBC.

*Drivers* are those factors that encourage businesses, academics or HEIs to engage in UBC. Drivers of UBC are divided into two factors:

1. **Facilitators** – factors that enable or ease cooperation
2. **Motivators** – incentives or benefits that the respective stakeholders would like from the cooperation

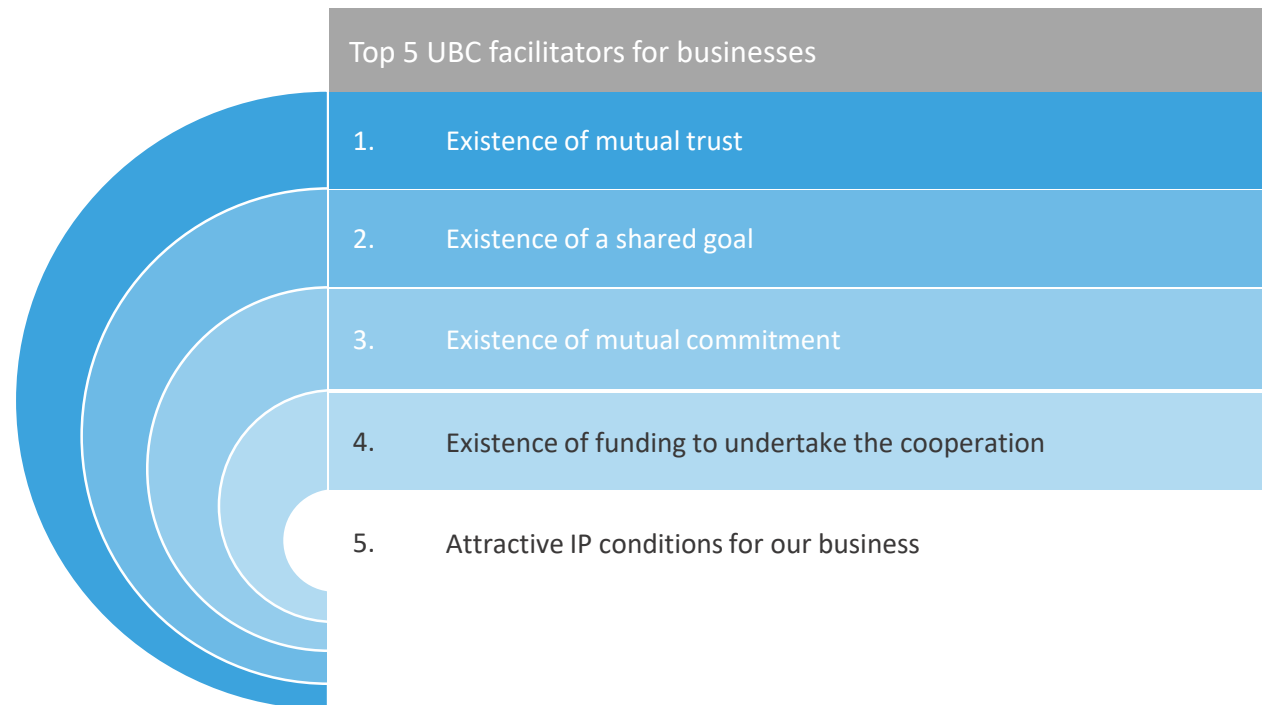
Together, these two factors provide a

comprehensive picture of what compels businesses to cooperate.

The 2010-11 State of European UBC study showed that for European universities the existence of strong UBC drivers can overcome the presence of barriers to UBC.

## Facilitators enabling UBC

*'What is facilitating your cooperation with universities?'*

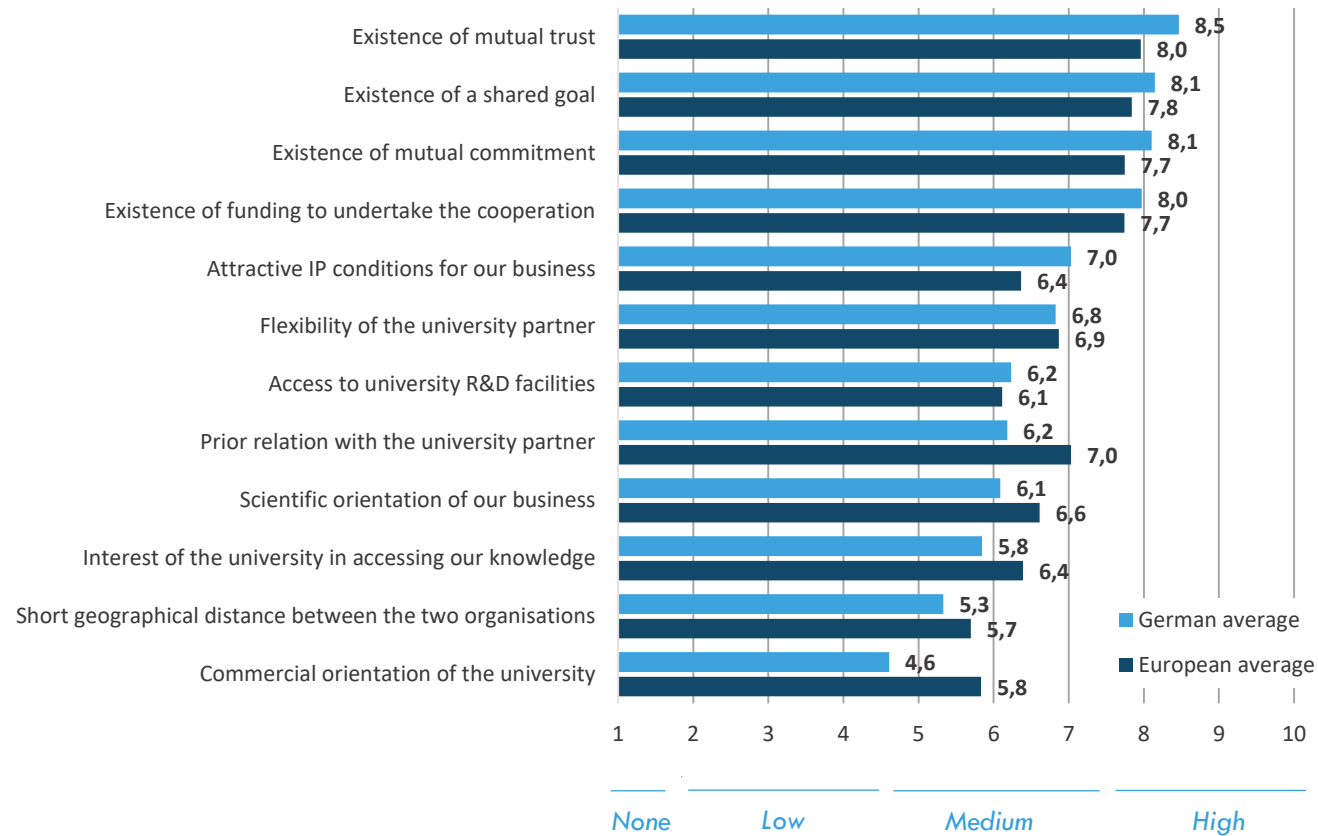




# Drivers stimulating UBC

## Facilitators

*'What is facilitating your cooperation with universities?'*



The majority of facilitators are perceived higher by German businesses, compared to the European average. This is the case for those personal relationship drivers, which bear great importance in the advance of UBC in Germany (and also in the European context).

The existence of funding to undertake cooperation also facilitates UBC for German businesses to a larger extent. This applies particularly to the cooperation with traditional universities, which strive for basic and blue sky research. In the case of more applied research, which is more common for technological universities and universities of applied sciences, funding and financial resources are generally welcomed but are less likely to inhibit UBC.

The five weakest facilitators identified by German businesses are perceived considerably lower compared to the European average. Thus, the commercial orientation of the university is the least relevant factor facilitating cooperation for German businesses.

# Drivers stimulating UBC

The main motivators for German businesses to undertake UBC are related to innovation and competitiveness.

Businesses cooperate with universities primarily to improve their own innovation capacity and to get access to new technologies and knowledge.

German businesses are also motivated to access new discoveries at an early stage and better qualified graduates.

A less important but still relevant motivation is to obtain a customised solution for their business.

*Motivations for UBC* are the reasons why businesses collaborate with university.

They provide key information about the outcomes that the businesses seek from their collaborative activities relating to education, research, valorisation and management.

The ability of the collaboration to achieve these outcomes will have a substantial influence on the businesses' assessment of the success of their collaboration.

## Motivators

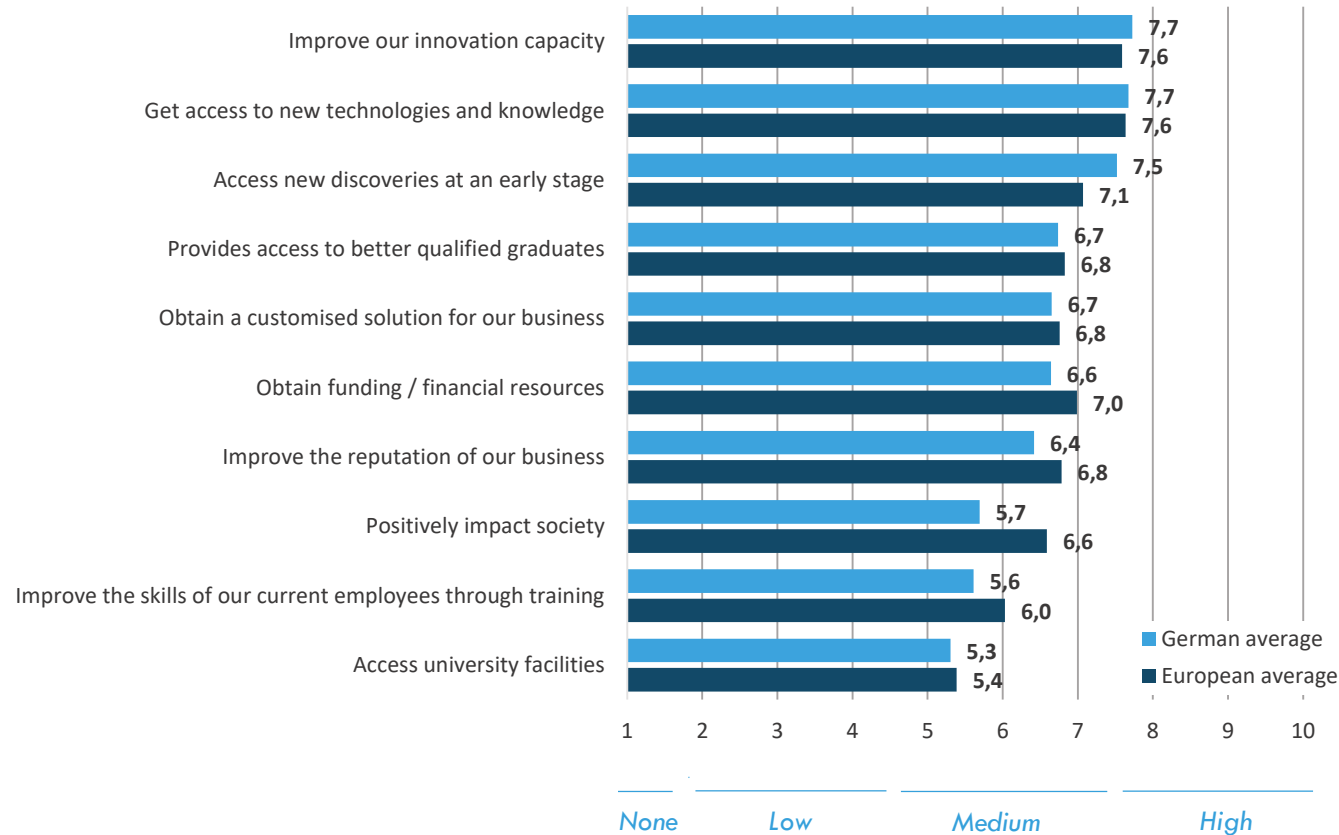
*'What motivates you to cooperate with universities?'*



# Drivers stimulating UBC

## Motivators

'What motivates you to cooperate with universities?'



Overall, German and European businesses rate different motivations similarly.

European and German businesses cooperate with universities primarily to improve their own innovation capacity and to get access to new technologies and knowledge.

On the other hand, German businesses are significantly less motivated than their European counterparts to positively impact the society and improve the skills of their employees. Traditionally, the German society and citizens are supposed to be taken care by the government, rather than by companies. After the second World War the governmental efforts to serve society considerably increased.

Like their European counterparts, German businesses are not highly motivated to access university facilities. But this is slowly changing, as German universities possess the newest technologies financed by the state and the EC. In pre-market stages for testing, prototyping and R&D, university laboratories can support risky innovation projects. This insight is consequently growing in Germany.

# Benefits of UBC

Both German and European businesses have similar perceptions in respect to which stakeholder groups benefit the most from UBC.

Both groups see students as the primary beneficiaries of UBC. Universities and businesses in Germany tend to take the responsibility to support students in their transition from HEIs to the job market. Enterprises recognise the need for the best educated and skilled graduates and therefore cooperate with, and support, universities.

German business perceive themselves also as beneficiary but to a slightly lower extent than students. The lowest benefits are perceived to be for society and government.


*Benefits* are the perceived positive outcomes (financial and non-financial) from undertaking UBC as relevant for the different stakeholder groups that can potentially participate in UBC.

The perception regarding who benefits from such cooperation can influence the decision to increase or decrease their participation or

the involvement of other groups. For example, if academics perceive their own benefits to be low, they may refrain from engaging in UBC. Yet, if they perceive benefits for students to be high, they might undertake actions that contribute to students' involvement in UBC.

## Benefits of UBC

*'Who receives the benefits of UBC?'*

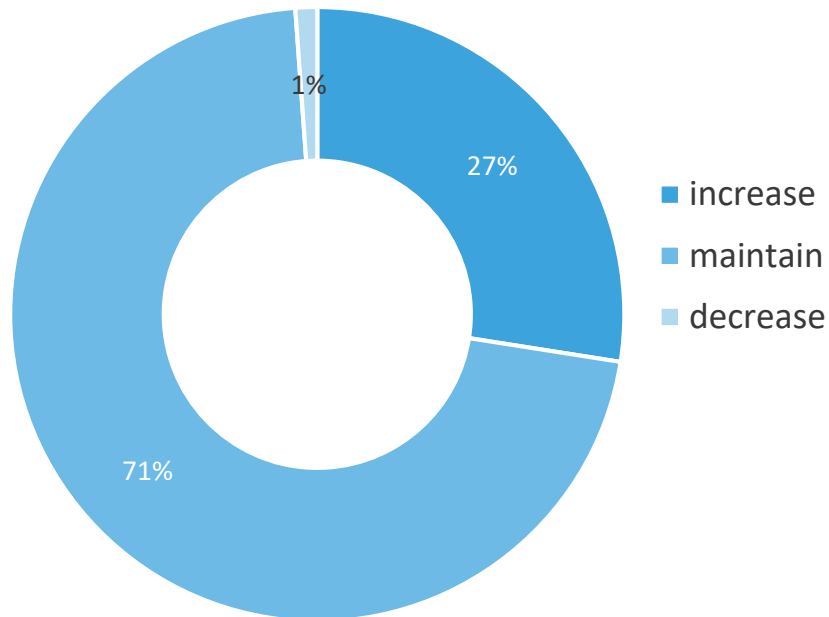


	German businesses	European businesses
1.	Students	Students
2.	Businesses	Universities
3.	Academics	Businesses
4.	Universities	Academics
5.	Society	Society
6.	Government/public authorities	Government/public authorities

# Future intentions

## Future UBC intentions – Germany

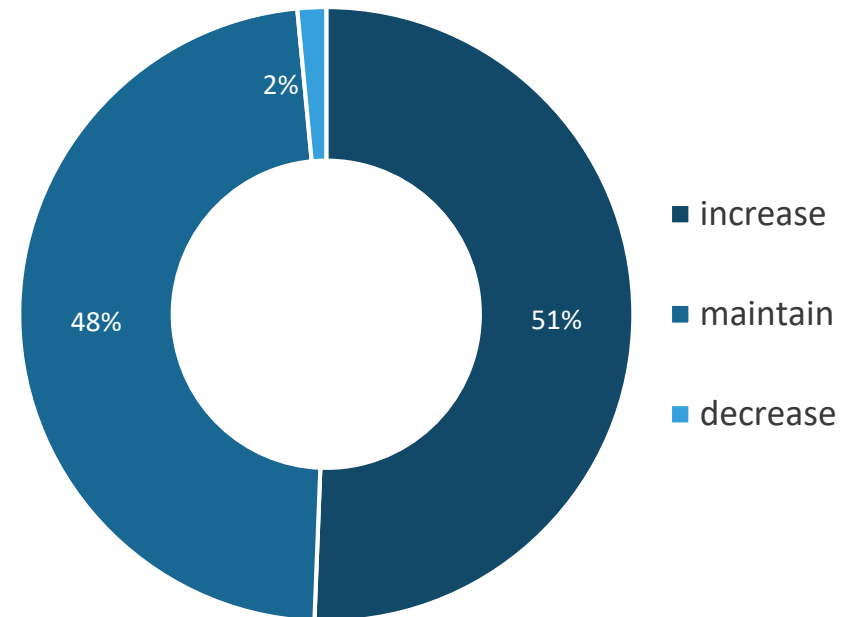
As answered by German businesses



98% of German businesses that currently cooperate with universities plan to maintain or increase their cooperation, with only 1% intending to reduce it. This shows an important momentum for UBC in German industry.

## Future UBC intentions – EUROPE

As answered by European businesses



European businesses seem to be even more confident in terms of their future intentions towards UBC as it can be observed through a higher percentage of business respondents (51%) that plan to increase cooperation activities.

# Willingness to recommend UBC

The willingness of German cooperating businesses to recommend to a colleague to engage in UBC highly varies depending on whether this cooperation is in research or in education.

German businesses are more satisfied with UBC in research (NPS=34) than their European counterparts (NPS=28). While 51% of them will promote it positively, 17% would do it negatively. Research cooperation has a long tradition in German UBC.

Contrary, German businesses are less satisfied with their cooperation in education (NPS=-10). Only 30% would highly recommend it and 40% will not recommended it. This is also more negative than the European NPS. The German education system highly depends on the governmental regulations and cannot not be easily adapted towards the market needs.

Respondents were asked how likely it would be that they recommend to a business colleague to engage in UBC in the areas of R&D and

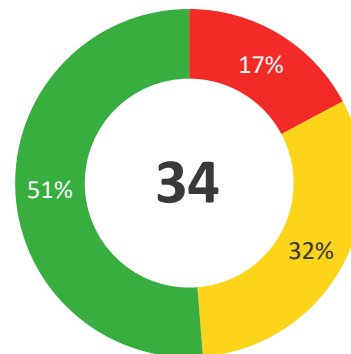
education and training (E&T). The *Net Promoter Score* metric offers a proxy for customer satisfaction.

## Willingness to recommend cooperation with universities in R&D or E&T

	Detractors	Passives	Promoters	Net promotor score
Business cooperating with universities in R&D	17%	32%	51%	34
Business cooperating with universities in E&T	40%	30%	30%	-10

## Satisfaction with cooperation with universities (net promoter score)

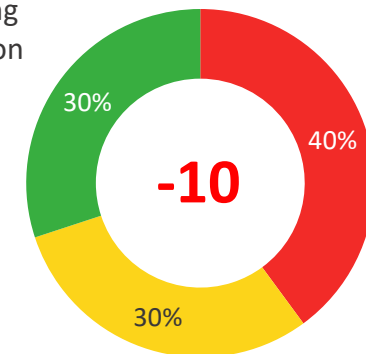
Business cooperating in research



■ Detractors ■ Passives ■ Promoters

European business NPS result: 28.2

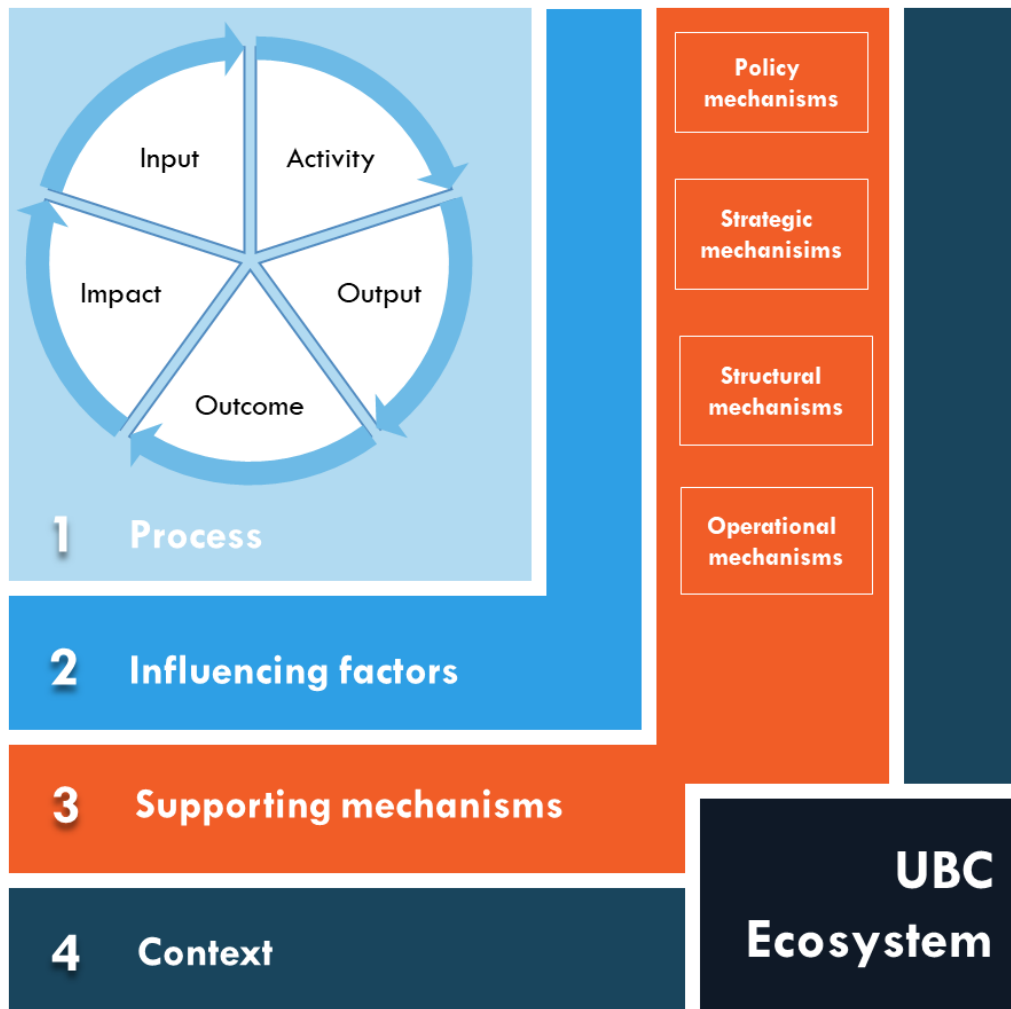
Business cooperating in education



■ Detractors ■ Passives ■ Promoters

European business NPS result: -2.1

# Supporting mechanisms for UBC



Supporting mechanisms are interventions designed to support the development of cooperation between HEIs and business.

There are four types of supporting mechanisms:

- Policy
- Strategic
- Structural
- Operational

This section outlines the extent to which UBC supporting mechanisms are developed in this sample from the HEI perspective.

At the European level, the extent of development of all these mechanisms significantly influences the extent of cooperation.

German businesses can adopt a range of supporting mechanisms in their interaction with universities, but most of them are present in under a third of the businesses.

The most developed one and the only one present in over half of German businesses is a top-level management committed to UBC (54%). The dedication of resources (50%) and a strategy for UBC (46%) are the further mechanisms present.

Compared to the European average, UBC supporting mechanisms in Germany are significantly more common, especially in relating to mechanisms requiring top-level management commitment.

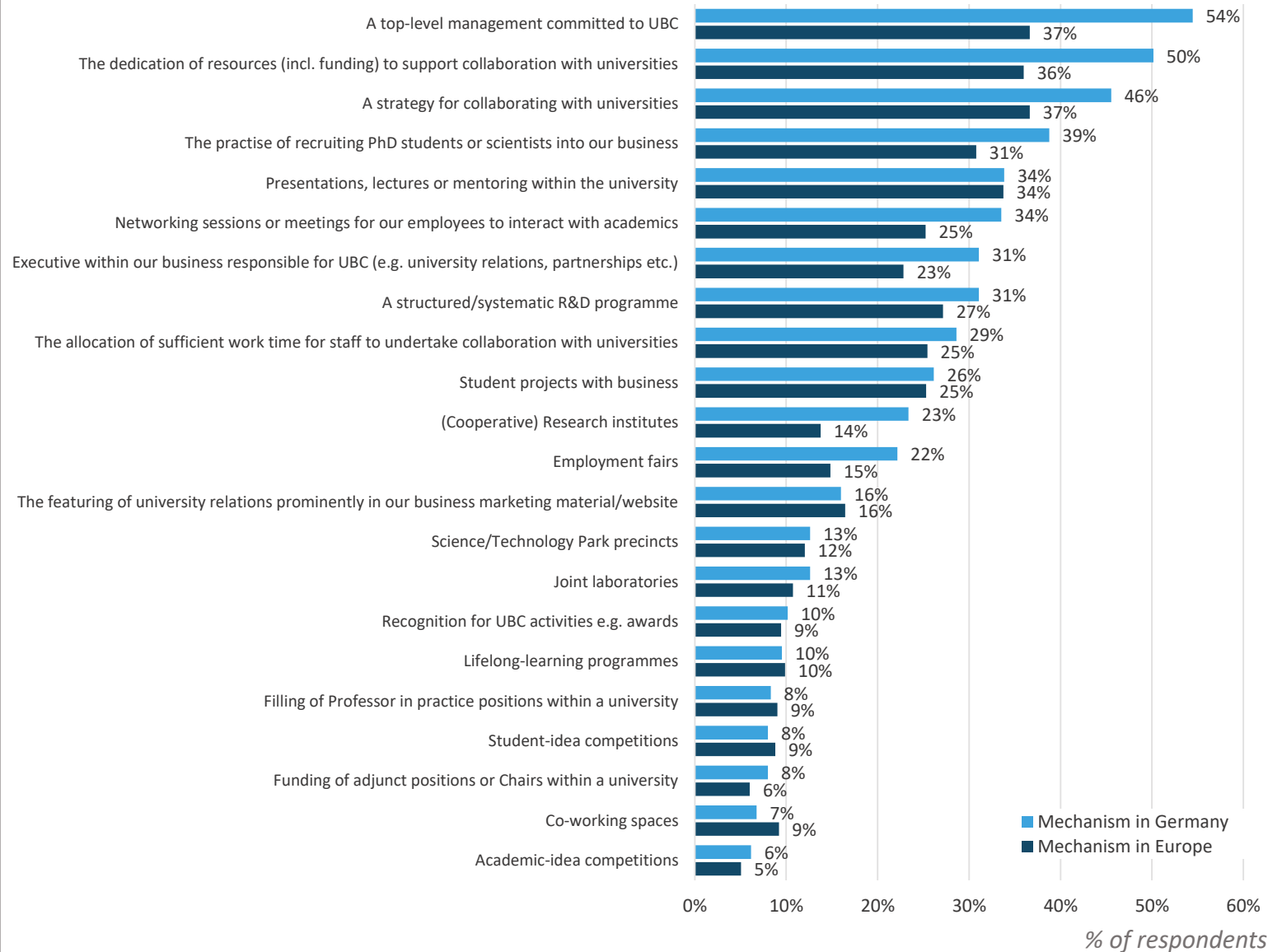
Resources for UBC are allocated in a higher percentage of businesses in Germany, compared to the European average. The existence of a strategy for collaboration with business and the practise of recruiting PhD students or scientists into business are also more common in German businesses.

Yet, the existence of supporting mechanisms in companies highly depends on the management structure of the business. Germany has a high prevalence of family owned companies, which are more likely to implement UBC supporting mechanisms than the shareholdings. Family owned businesses tend to have a more long-term thinking and are more willing to invest in long-term investments such as research collaborations. Furthermore, the decision-making process in such companies is faster and more flexible.

# Supporting mechanisms for UBC

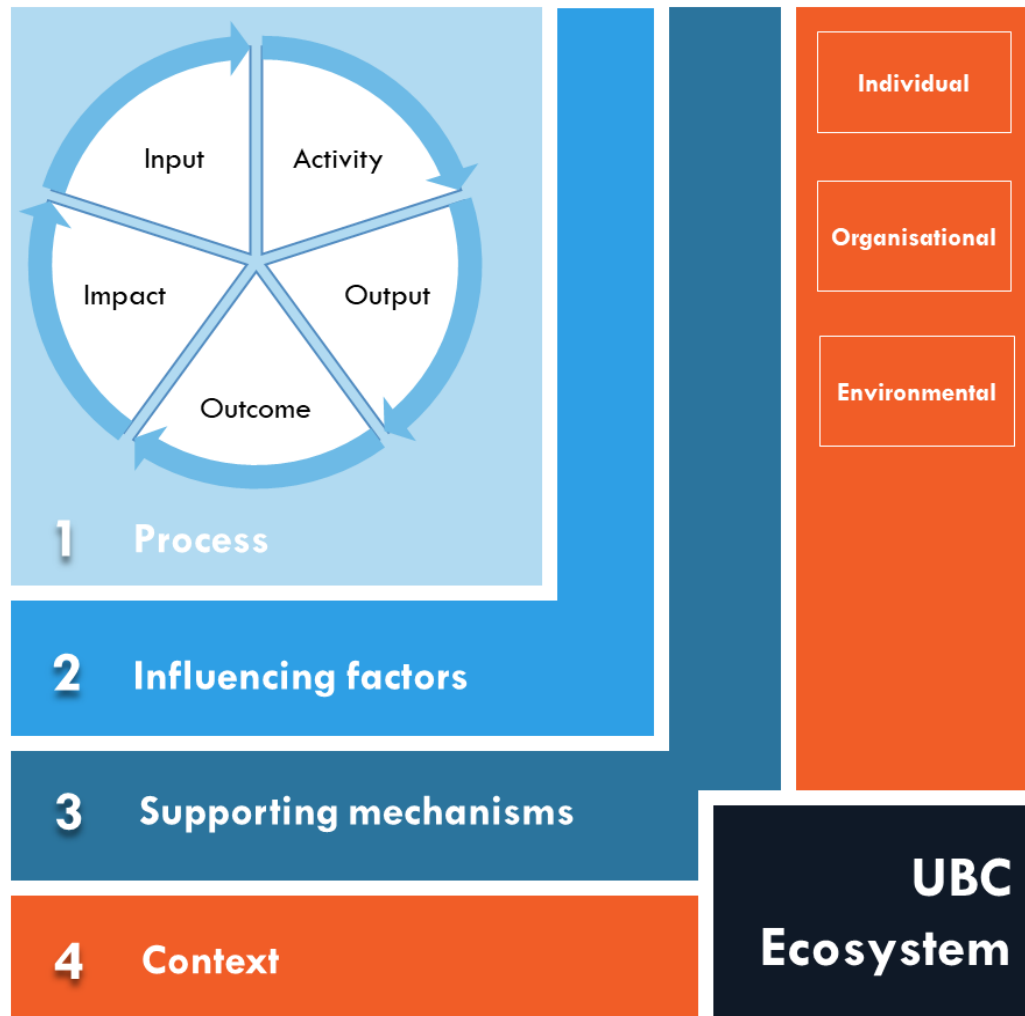
## Mechanisms supporting UBC

*'Do these supporting mechanisms for UBC exist in your business?'*





# Context



The degree to which UBC takes place is influenced by a set of elements present in the context of the organisation that cannot be changed in short term.

These include the characteristics of individual actors involved, the institutional factors relating to the university and business, as well as by a set of broader environmental factors (political, economic, social, technological, etc.).

This section outlines how some contextual factors influence UBC in the country.

# Context

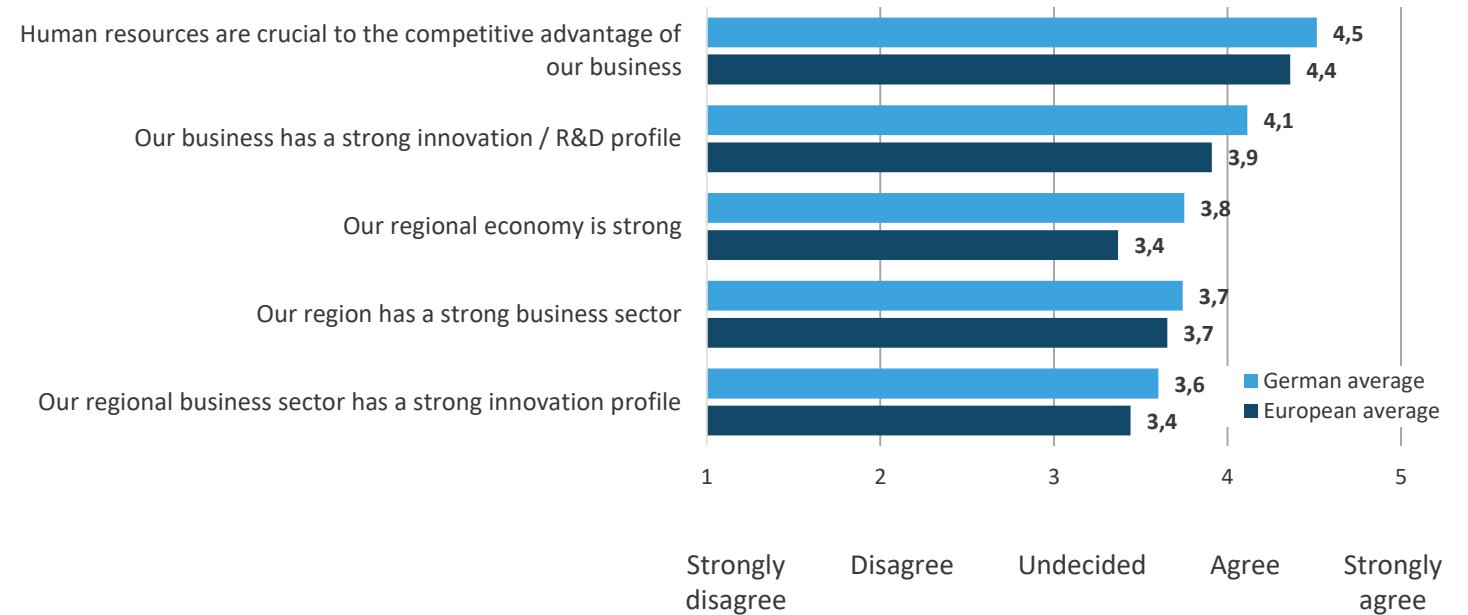
German and European businesses cooperating with universities perceive their context similarly, although Germany business generally have a higher estimation of their context for UBC.

Human resources are essential for their competitiveness and the business innovation and R&D profile is seen as strong.

A lower perception emerges regarding the characteristics of the regional business sector and its Innovation profile.

## Contextual factors affecting UBC

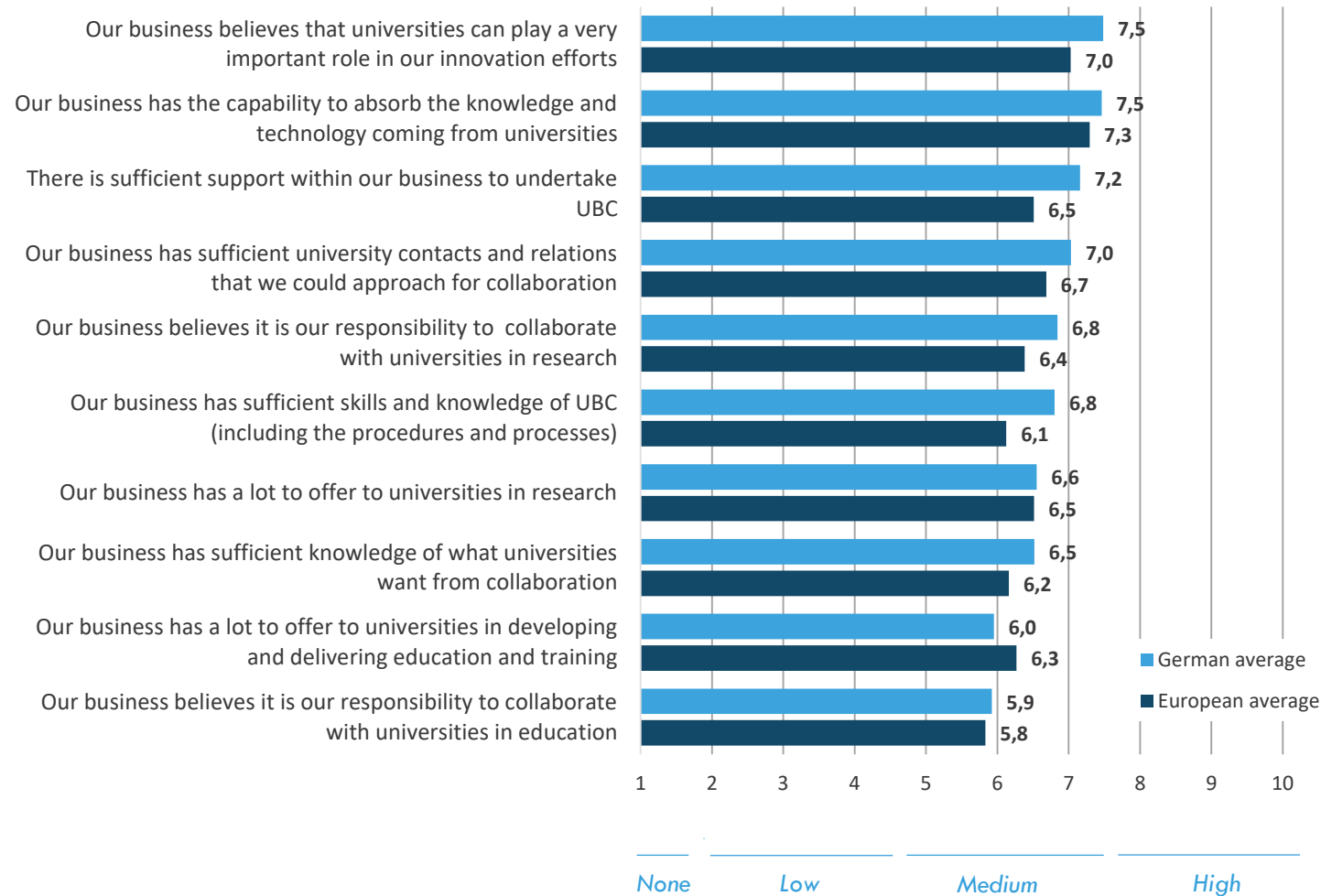
*'To what extent do you agree with the following statements?'*



# UBC capabilities and beliefs

## Supportive UBC environment

*How supportive are your organisation and environment for UBC?'*



German businesses perceive themselves to be supportive towards cooperation with universities.

In particular, they believe that universities can play a very important role in their innovation efforts, whereas they also possess the capability to absorb knowledge and technology from universities.

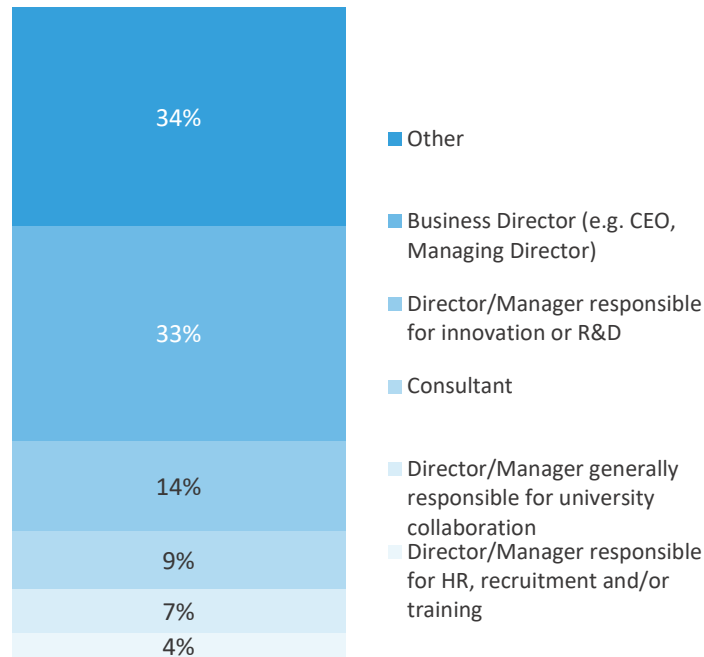
Yet, German businesses are less supportive towards UBC in education and training, because this was never considered as their primary role.

German businesses furthermore state that they have sufficient support within the business and sufficient university contacts to undertake UBC activities.

Overall, German businesses perceive themselves in a more positive way in comparison to European average, with the exception of the activities in education and training that are ranked lower.

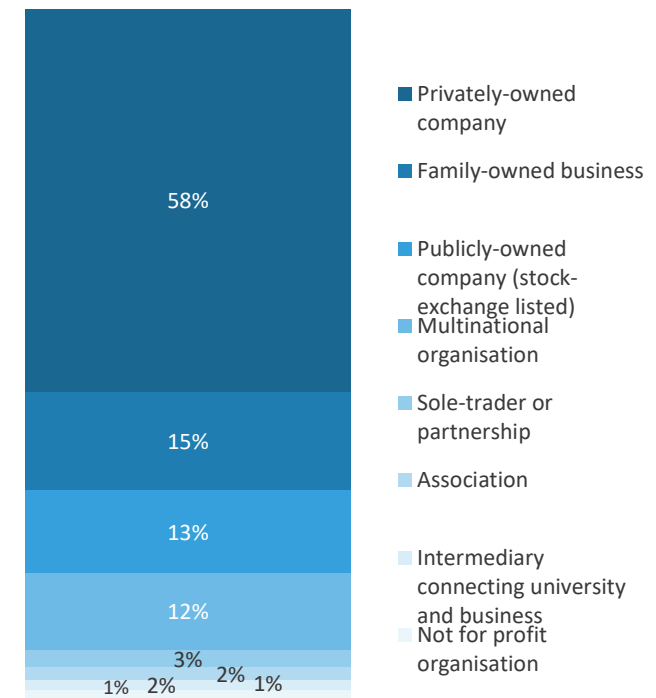
# Respondents profile

## Position of respondent



A third of the German business sample (33%) are business directors, which represent the largest group. It is followed by directors responsible for innovation or R&D (14%) and consultants (9%). The remaining businesses identified themselves as directors responsible for university collaboration (7%), and directors of HR, recruitment and training (4%). 34% of German respondents hold 'other' positions.

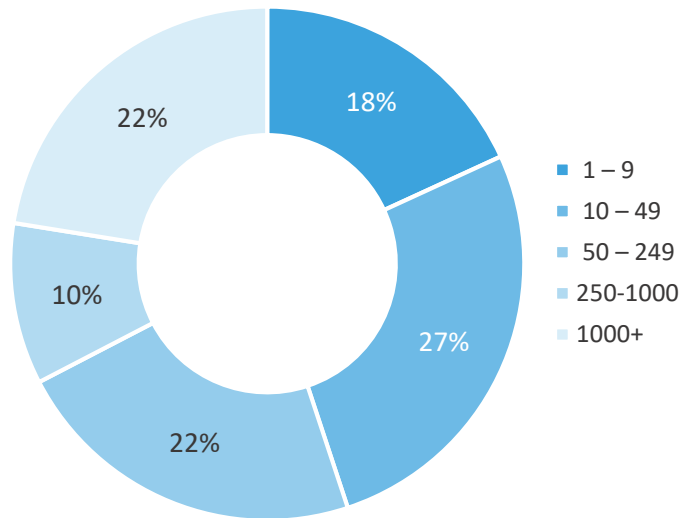
## Type of business



A wide variety of businesses were represented in the German sample, but over half of them (58%) are privately-owned companies, followed by publicly owned companies (15%) and multinational organisations (13%). The type of businesses with less than 10% of representation include: associations, intermediaries connecting universities and businesses, not for profit organisations and family-owned businesses.

# Respondents profile

## Business size



Sample Size	
German business representatives	n = 325
European business representatives	n = 3.113

Less than half of the German business sample is comprised by either small firms (10 to 49 employees) or larger companies with more than 1,000 people employed (22% each). 18% of business managers work for micro-companies and 27% for medium-sized companies. Large companies (250 to 1000 employees) are represented by 10% of the business managers in the sample.

# Contact us

Todd Davey - [davey@uiin.org](mailto:davey@uiin.org)

Arno Meerman - [meerman@uiin.org](mailto:meerman@uiin.org)

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This report is also part of the Global University-Business Monitor initiative, a global study into university engagement and cooperation between university and business. Further information can be found at [www.uni-engagement.com](http://www.uni-engagement.com)