

State of University- Business Cooperation

DENMARK

Business Perspective

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



The State of Danish University-Business Cooperation: the business perspective

Partners



Authors: Todd Davey, Arno Meerman, Morten Dahlgard Andersen, Balzhan Orazbayeva, Victoria Galán-Muros, 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) or Arno Meerman (meerman@uiin.org)

Executive summary

Summary

This report aims at contributing to our understanding of the business perspective on university-business cooperation (UBC) in Denmark. Examining the perceptions of a wide range of businesses provides positive signs for the future, with 92% of Danish 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 strategies that can support their cooperation efforts beyond research initiatives (e.g. teaching, shared resources and dual study programmes).

About the study

The results presented in this report reflect the perceptions of business representatives in Denmark 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 68 Danish business responses. The study measured the perceptions of respondents with respect to their businesses and cooperation efforts.

University-Business Cooperation

Danish businesses mostly engage in joint R&D, mobility of students and consulting reported as the most developed UBC activities. Valorisation and

management activities are considerably less developed with almost 50% of businesses not undertaking these types of cooperation at all. Particularly low are also the educational activities of curriculum co-design and curriculum co-delivery.

Danish businesses perceive themselves as the main actors reaching out for collaboration. In the same way, they also see university alumni, individual academics as proactive initiators of UBC. This demonstrates the willingness of Danish businesses' to cooperate with universities, but also highlights the opportunity to do more. On the contrary, Danish representatives identify internal intermediaries as well as university management as those stakeholders that less often initiate UBC.

Cultural and funding barriers

The strongest barrier identified by respondents relate to the lack of government funding. The cultural differences between businesses and universities, such as differing time horizons and differing motivations between universities and businesses also represent significant barriers. Moreover, Danish business respondents point towards the universities, reporting their lack of people with business knowledge and the high level of bureaucracy as further hindering factors negatively affecting their collaboration efforts.

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.

UBC is a people's game

While funding to undertake cooperation is indicated as one of the top five facilitators for Danish UBC, factors related to the individual relationships emerge to be of even higher importance. It is the existence of trust, a shared goal, and commitment alongside prior relations with a partner that facilitate cooperation for Danish businesses. These results indicate that any effort towards enabling cooperation between businesses and universities should focus on relationship development as a basis for successful collaboration.

Driven by innovation and competitiveness

In line with the aim to be among the top five European OECD countries with the highest share of innovative companies by 2020, Danish businesses cooperate with universities principally to get access to new technologies and knowledge and to improve their own innovation capacity. Further motivations to engage in UBC include obtaining funding, improving their reputation and accessing new discoveries at an early stage. Generally, Danish businesses perceive themselves as UBC beneficiaries but they see for themselves less benefits than for students and HEIs.

Strategy first

Strong emphasis has been placed on the development of UBC supporting mechanisms by universities, and yet little is known about such mechanisms in the business realm. This study indicates that the strategies are those mechanisms that have the highest development, with half of the

of respondents indicating the existence of top-level management committed to cooperation with universities. Additionally, more than a third of the respondents report the existence of student projects within their business. Compared to the European average, the allocation of resources for UBC is existent in a bigger percentage of businesses Denmark.

The most underdeveloped supporting UBC mechanisms in Denmark include the funding of adjunct positions or chairs within a university and cooperative research institutes.

Room for improvement in education activities

Danish businesses perceive themselves to be supportive towards UBC. They report having the sufficient university contacts and relations to undertake cooperation and recognise the important role played by HEIs in their innovation efforts. They also state that they have the capability to absorb knowledge and technology from universities and that they have a lot to offer to universities regarding research.

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

Introduction

About the study

The study focusses 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

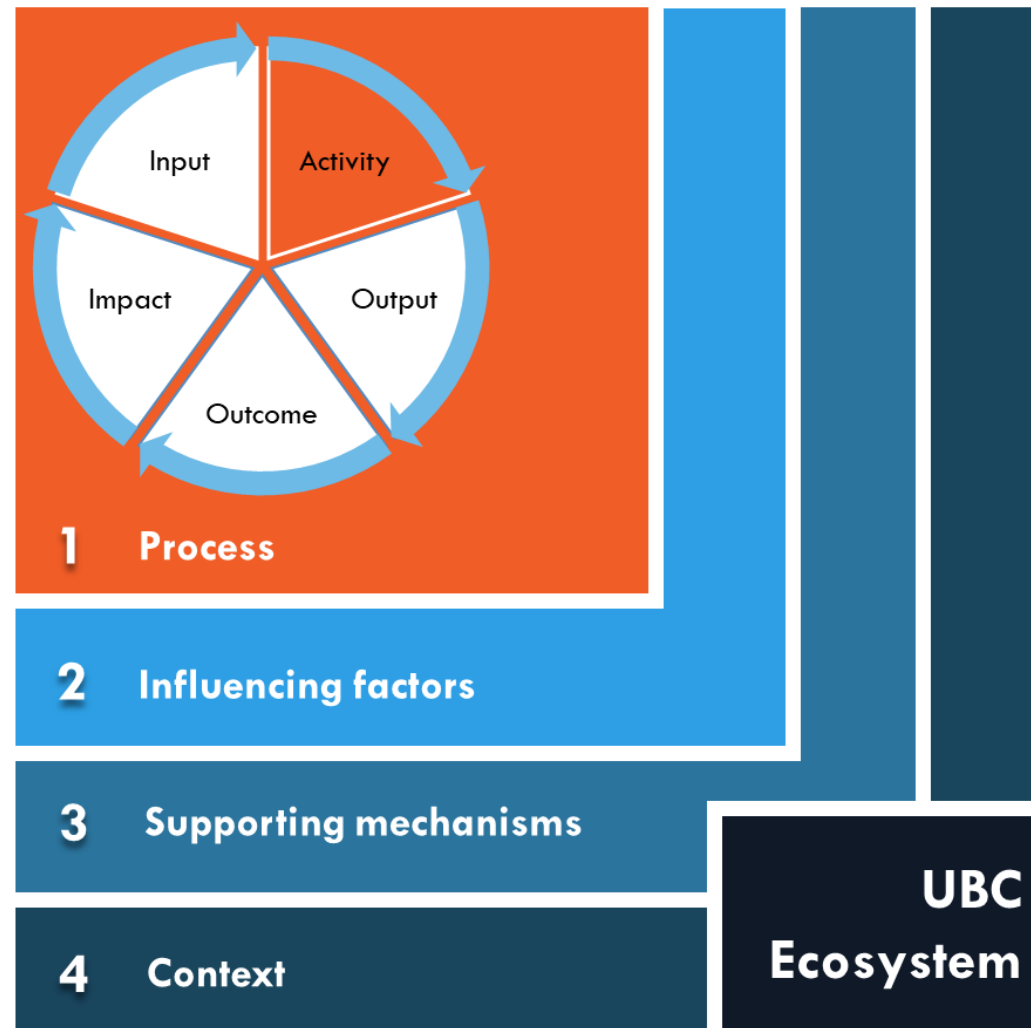
UBC activities

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

Development of UBC activities

Danish businesses engage mainly in research and education UBC activities, including collaboration in R&D (6.4), mobility of students (5.1) and consulting (4.3).

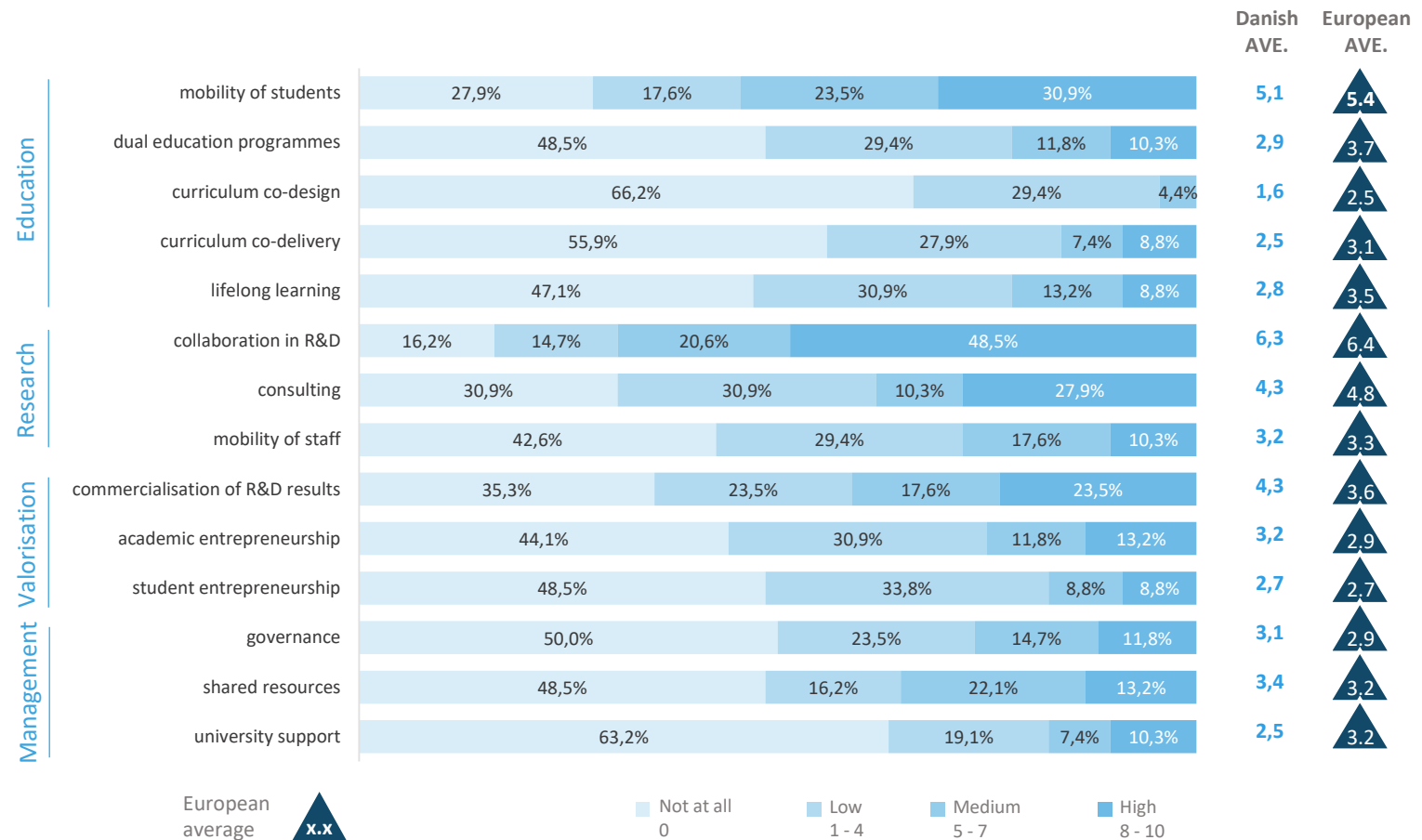
Almost 50% of businesses do not undertake any management or valorisation related collaboration (with the exception of commercialisation of R&D results).

As for UBC in education, particularly low are the activities of curriculum co-design and co-delivery. University programmes are research-based and traditionally developed internally. However, all university programmes have panels of industry representatives that take part in evaluating them on an overall level, with a special focus given on graduate employability.

Overall, the development of UBC activities in Denmark is lower than the European average.

UBC activities development

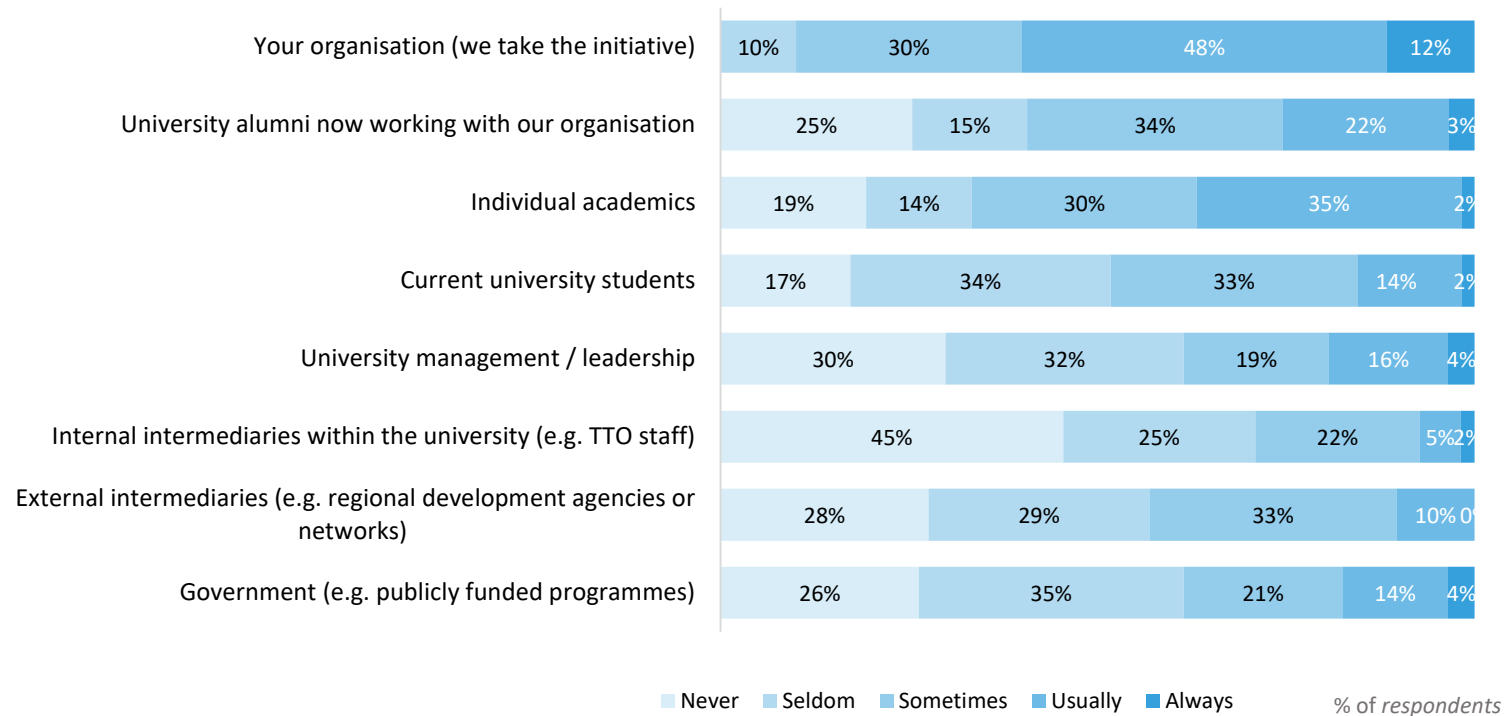
'Which UBC activities do you collaborate with universities in?'



Initiation of UBC

How UBC is initiated

'How often various stakeholders initiate UBC activities'



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

Businesses in Denmark see the individual academics and university alumni now working with their organisation also active in initiating cooperation.

Internal intermediaries within the universities and university management are perceived as passive in UBC initiation. 70% and 62% of the businesses respectively report that they never or seldom undertake any first steps towards UBC initiation.

Similarly, 61% of business state that the government do never or seldom initiate UBC.

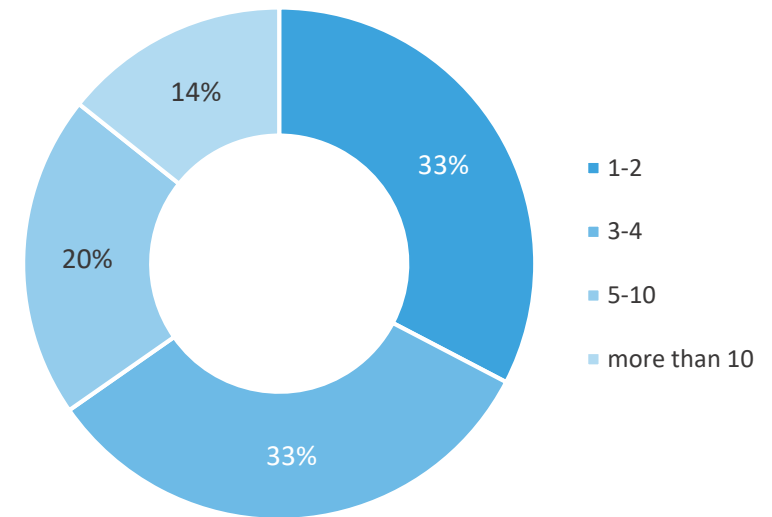
Geographical location still matters

Location of university partners

Percentage of cooperating businesses with...	
universities in their region	92%
universities in their country	100%
universities outside their country	88%

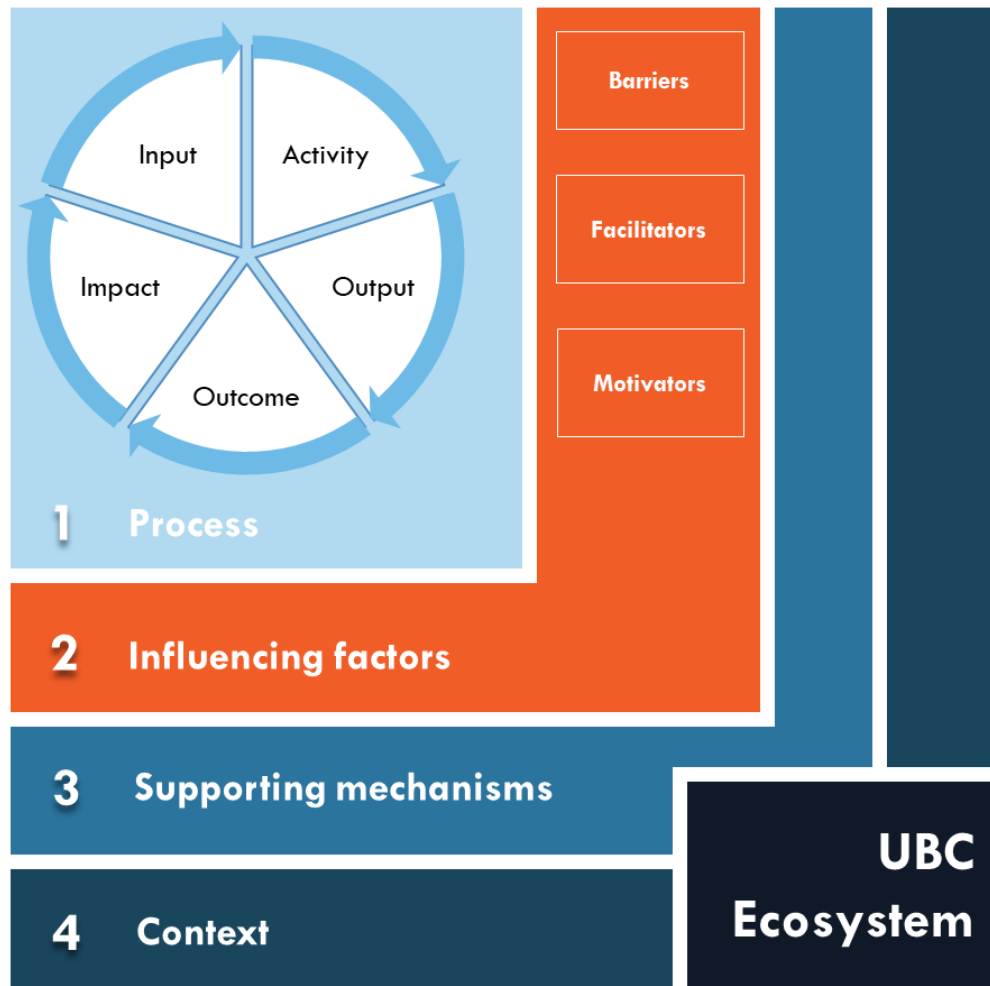
100% of Danish businesses cooperate with Danish universities. They also engage in UBC with the universities from the region and outside Denmark (92% and 88% respectively).

Number of university partners



Two thirds of the Danish businesses cooperate with less than 4 university partners. 20% have established relations with 5-10 universities and only 14% has more than 10 partners.

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 top five factors inhibiting Danish businesses to cooperate with universities are diverse.

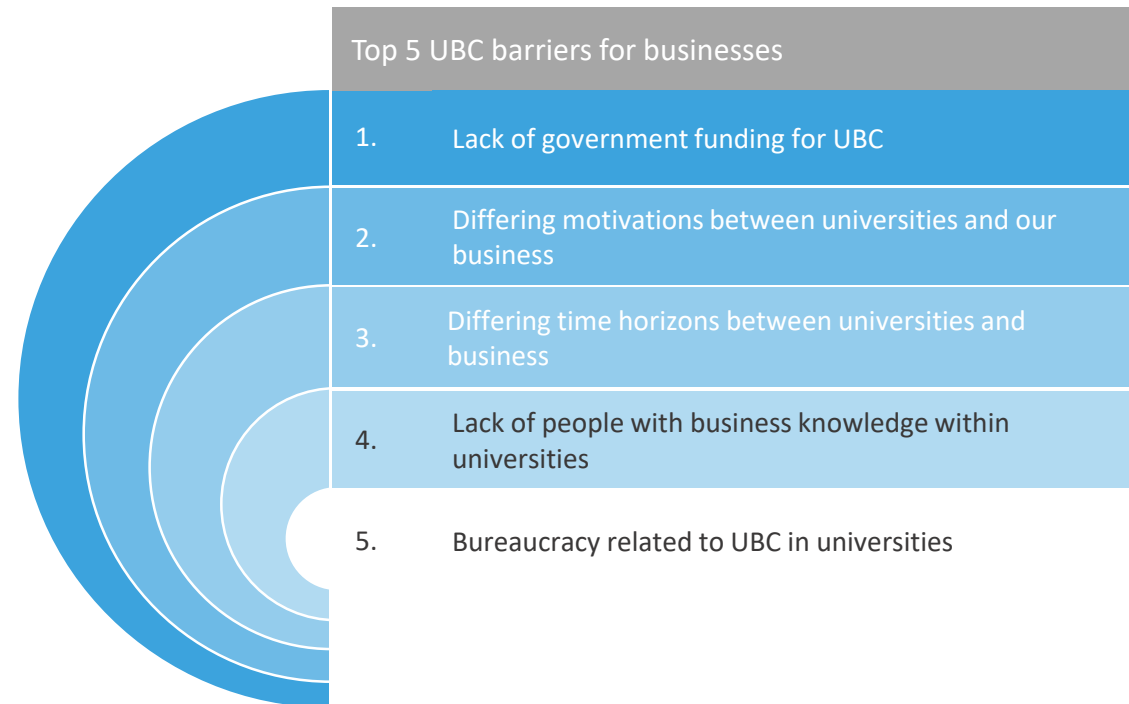
The main barriers are related to the lack of government funding and cultural issues, including the differing motivations and the differing time horizons between two organisations.

The lack of people with business knowledge within universities, along with bureaucracy related to UBC, are further significant barriers inhibiting UBC for Danish private sector organisations.

The Confederation of Danish Industry have previously pointed to the bureaucracy in its annual survey. Issues related to IP regulations, contracts and publications have been brought forward. There is some complexity in the regulatory system especially concerning collaboration efforts between universities and businesses, and sometimes different views regarding the pricing of intellectual property rights.

Barriers

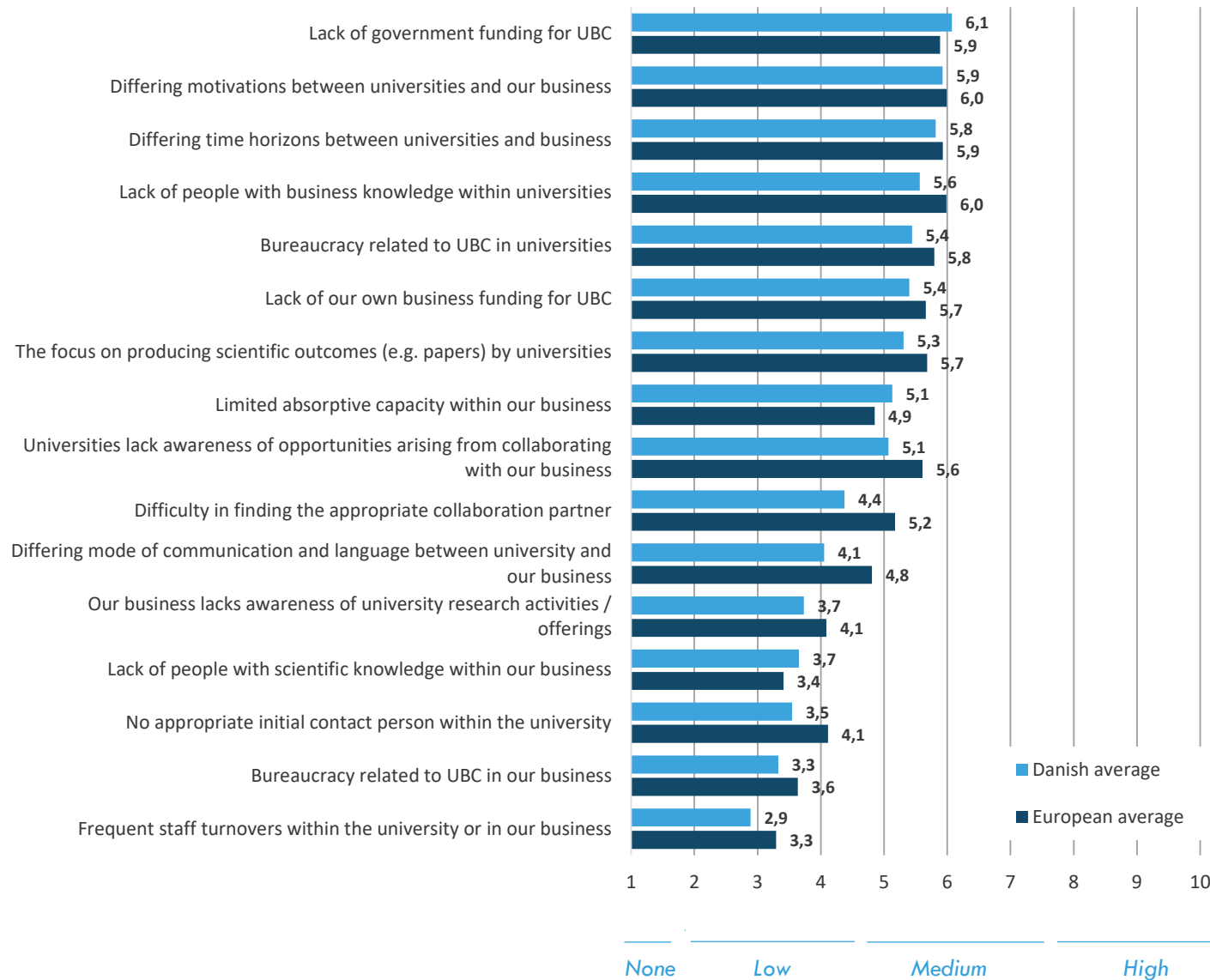
'What is inhibiting your cooperation with universities?'



Barriers hindering UBC

Barriers

'What is inhibiting your cooperation with universities?'



The majority of barriers perceived by cooperating Danish businesses and their European counterparts are to some extent similar. However, Danish businesses perceive most barriers slightly lower.

The strongest barrier for Danish business as well as one of the strongest for European business is the lack of governmental funding, followed by cultural related issues such as differing motivations and differing time horizons.

The difficulty in finding the appropriate collaboration partner along with differing mode of communication and language between university and business, are notably higher barriers for European businesses than they are for Danish businesses.

Frequent staff turnovers within the university or business is the weakest barrier for both groups.

Drivers stimulating UBC

The main factors facilitating Danish business cooperation with universities are related to personal relationship and funding.

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

The existence of funding to undertake UBC also plays a crucial role in facilitating UBC.

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

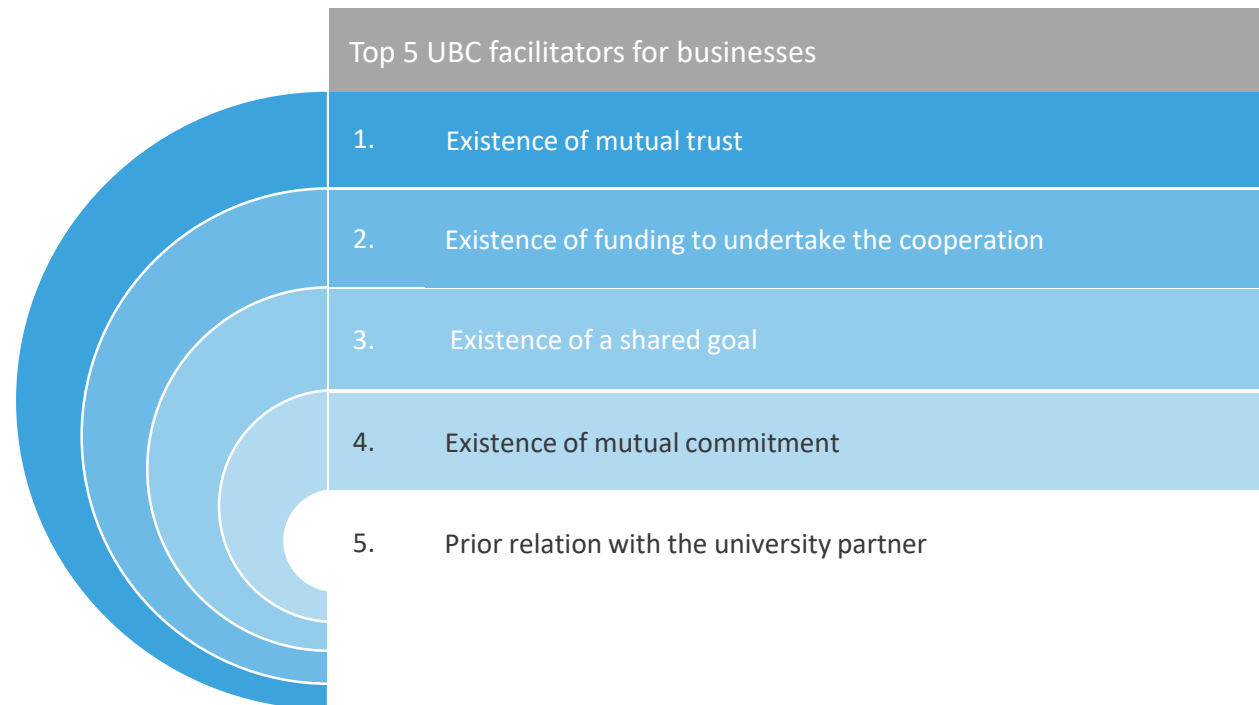
1. **Facilitators** – factors that enable or ease cooperation
2. **Motivators** – incentives or benefits that the respective stakeholders would like from the cooperation

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

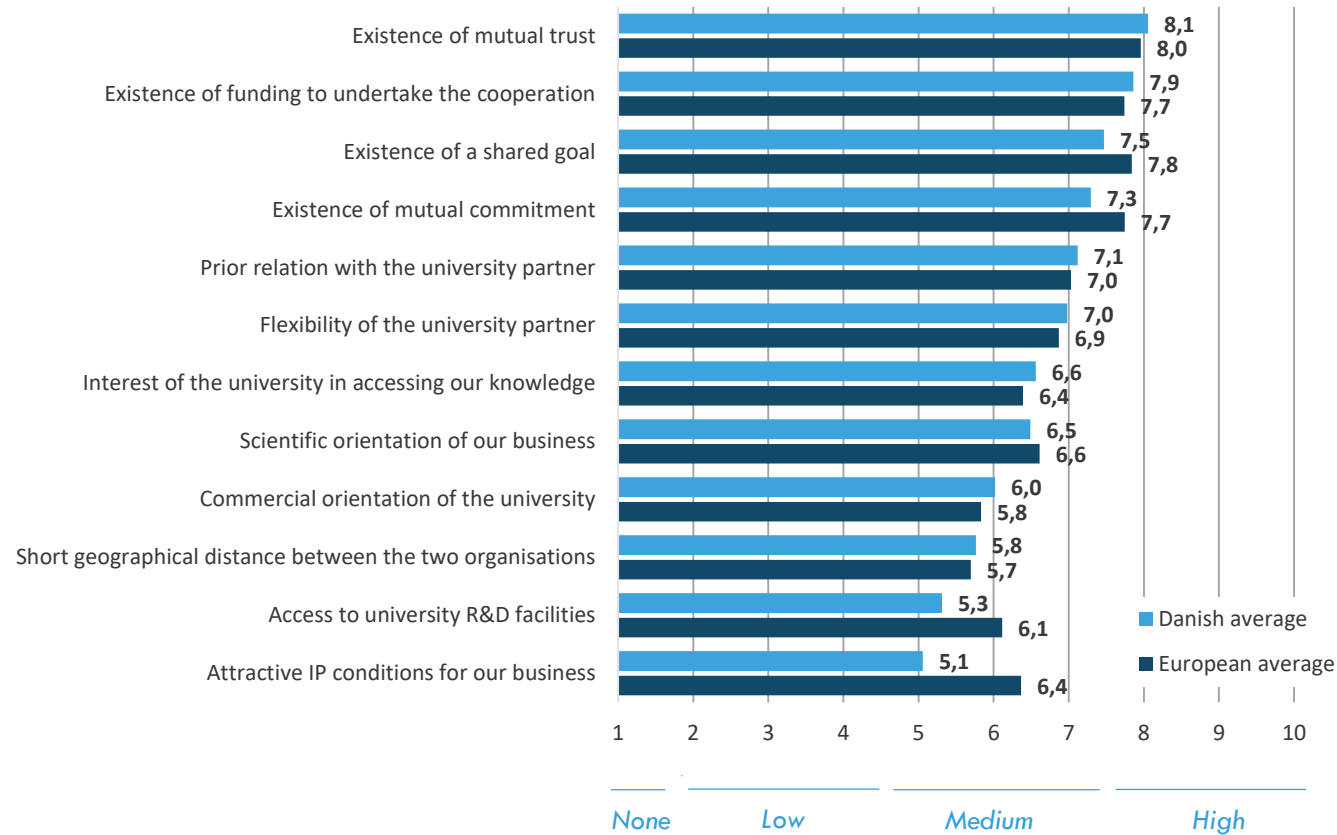
'What is facilitating your cooperation with universities?'



Drivers stimulating UBC

Facilitators

'What is facilitating your cooperation with universities?'



Most facilitators are perceived very similar by Danish and European businesses.

The personal relationship facilitators, along with the existence of funding, bear great importance in the advance of UBC in Europe and Denmark.

However, the access to university R&D facilities and attractive IP conditions for business have lower importance for businesses in Denmark than they do for European businesses, even though local Danish reports indicate that IP issues matter and that there are already attractive conditions in place.

Drivers stimulating UBC

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

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

Danish businesses are also motivated to obtain funding and improve their reputation.

A less important but still relevant motivation is to access new discoveries at an early stage.

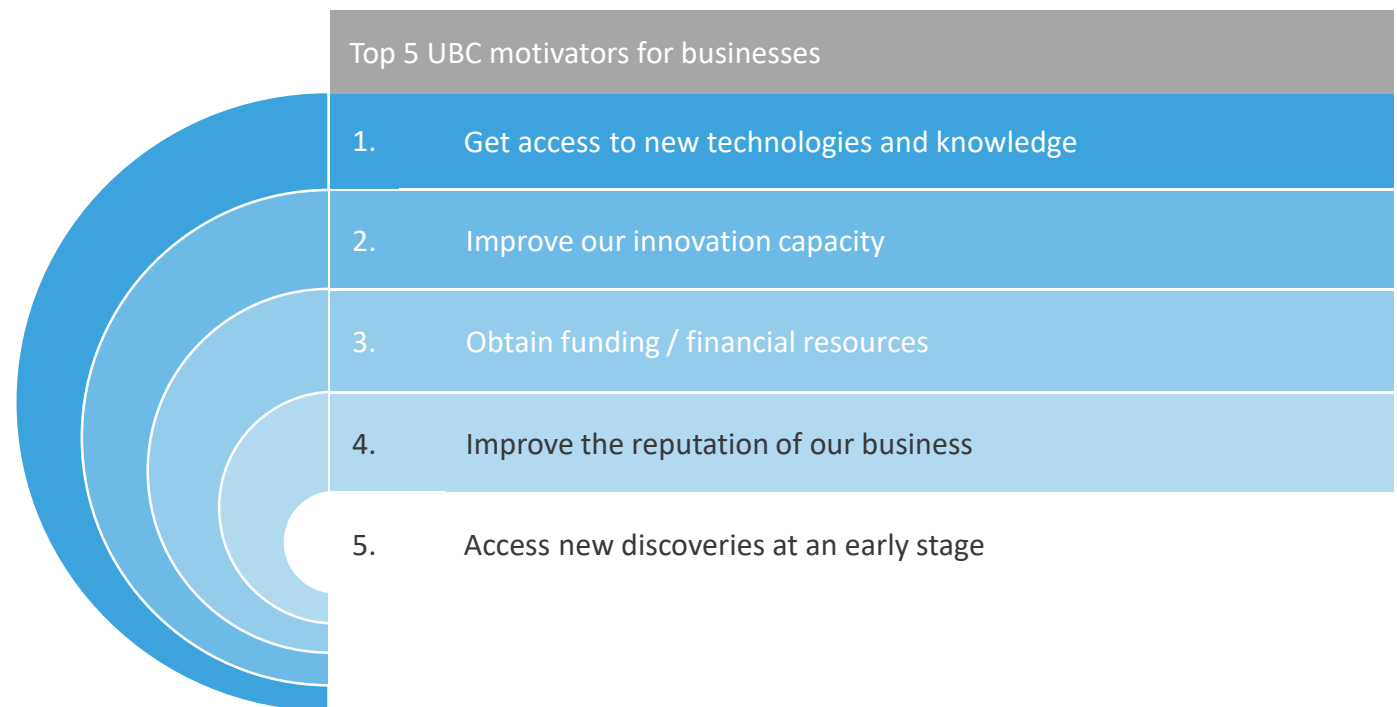
Motivations for UBC are the reasons why businesses collaborate with university.

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

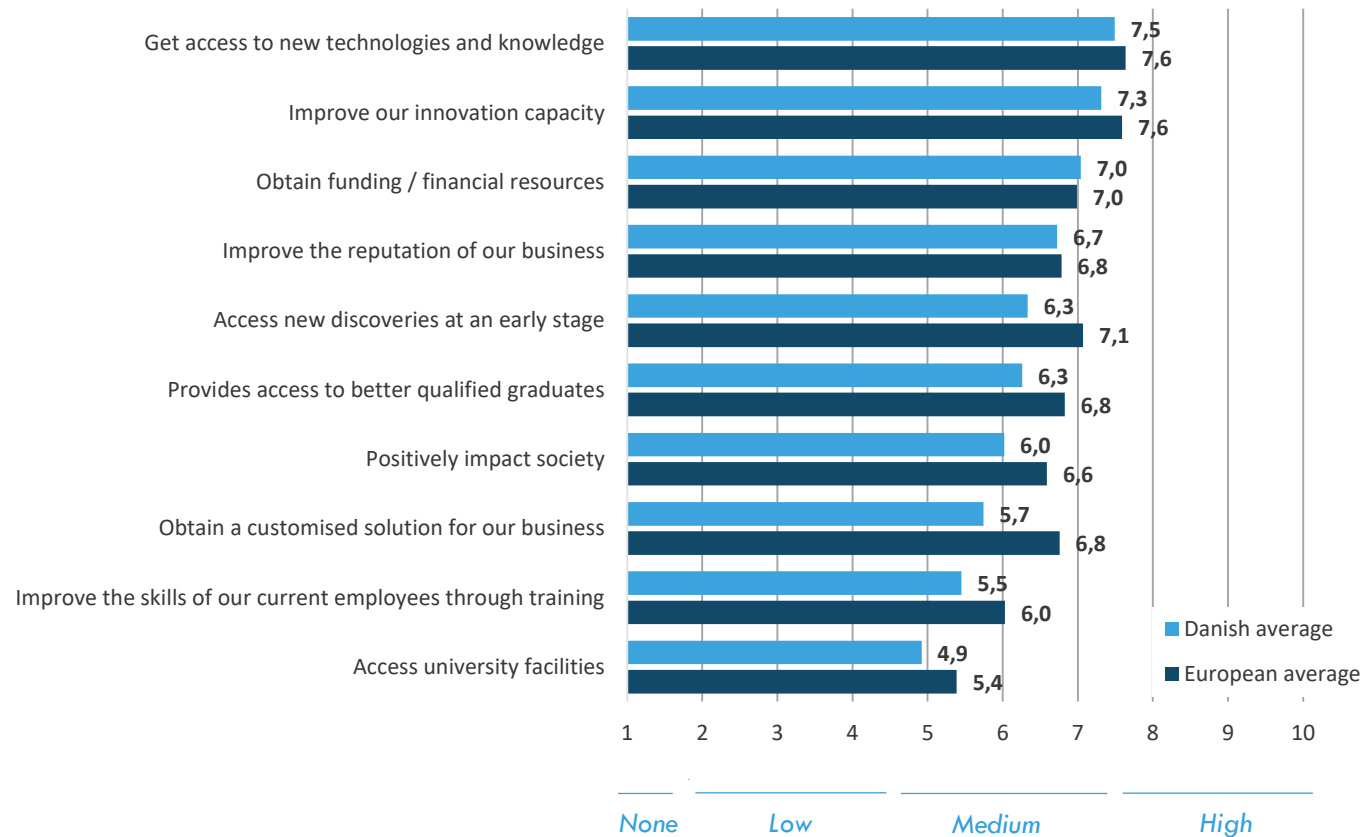
'What motivates you to cooperate with universities?'



Drivers stimulating UBC

Motivators

'What motivates you to cooperate with universities?'



Overall, Danish and European businesses have similar perceptions with respect to motivations that drive them to collaborate with universities.

Thus, businesses in Europe and Denmark are motivated by the willingness to access new technologies and knowledge and to improve their innovation capacity.

Accessing new discoveries at an early stage is significantly more important for European businesses (7.1) than for Danish ones (6.3).

Danish businesses are notably less motivated than their European counterparts by obtaining customised solutions for the business, improving the skills of their employees through training and accessing university facilities, which furthermore emerge to be the least relevant motivators for both groups.

Benefits of UBC

Danish and European businesses have very similar perceptions in respect to which stakeholder groups benefit more or less from UBC.

Both groups see students as the primary beneficiaries of UBC, followed by universities.

Notably they perceive themselves also as beneficiaries but to lower extent, compared to students and universities.

The lowest benefits are perceived to be for academics, 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?'

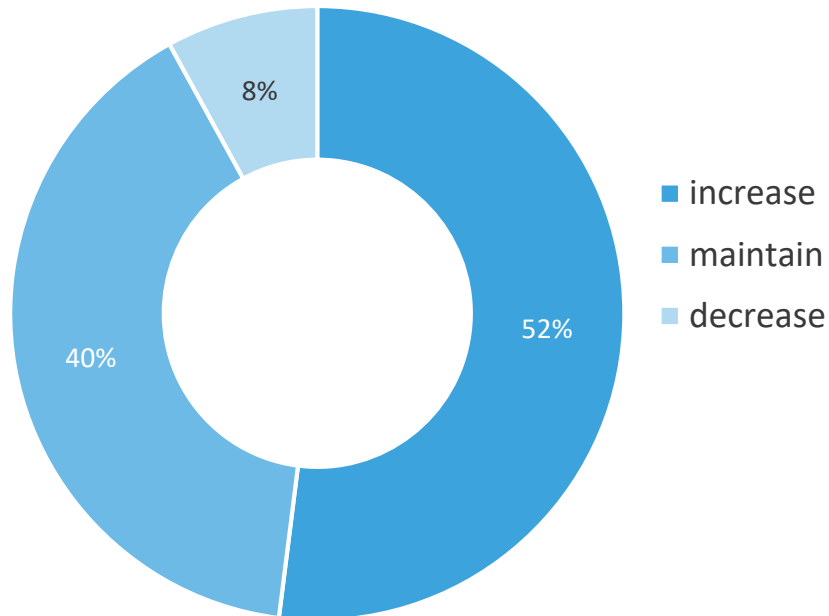


	Danish businesses	European businesses
1.	Students	Students
2.	Universities	Universities
3.	Businesses	Businesses
4.	Society	Academics
5.	Academics	Society
6.	Government/public authorities	Government/ public authorities

Future intentions

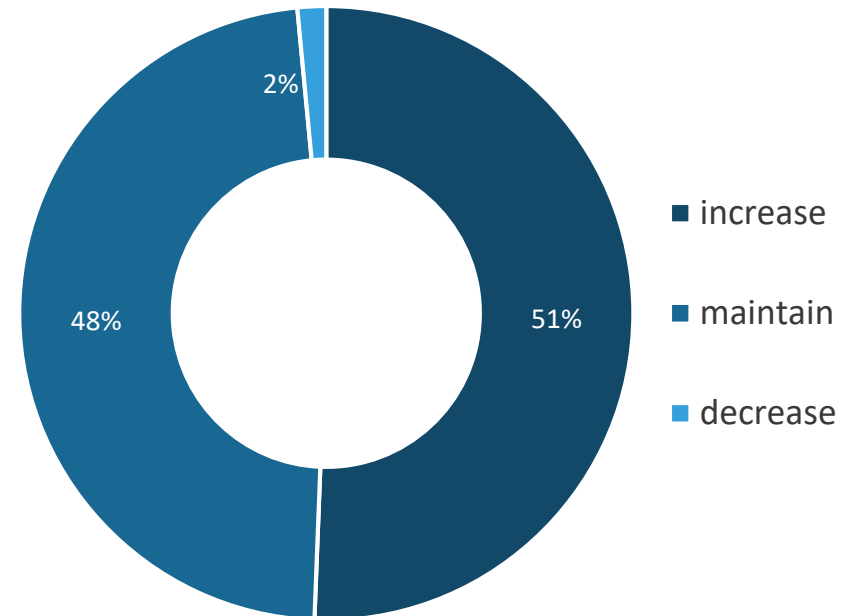
Future UBC intentions – DENMARK

As answered by Danish businesses



Future UBC intentions – EUROPE

As answered by European businesses



92% of Danish businesses that currently cooperate with universities plan to maintain or increase their cooperation, with only 8% intending to reduce it. This shows an important momentum for UBC in Danish industry.

European businesses seem to be even more confident in their future intentions towards UBC as over half (51%) of them plan to increase their cooperation activities and only 2% expect to reduce UBC.

Willingness to recommend UBC

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

Danish businesses are more satisfied with UBC in research than their European counterparts (NPS=41). While 61% of them will promote it positively, only 20% would do it negatively.

As for education, Danish businesses are less satisfied with their cooperation in this area (NPS= -5). While 34% would highly recommend it, 39% won't do it.

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

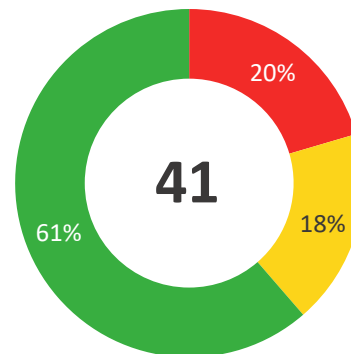
education and training (E&T). The *Net Promoter Score* metric offers a proxy for customer satisfaction.

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	20%	18%	61%	41
Business cooperating with universities in E&T	39%	27%	34%	-5

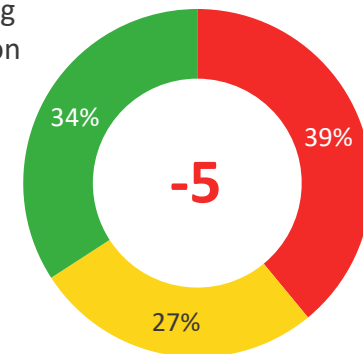
Satisfaction with cooperation with universities (net promoter score)

Business cooperating in research



■ Detractors ■ Passives ■ Promoters

Business cooperating in education

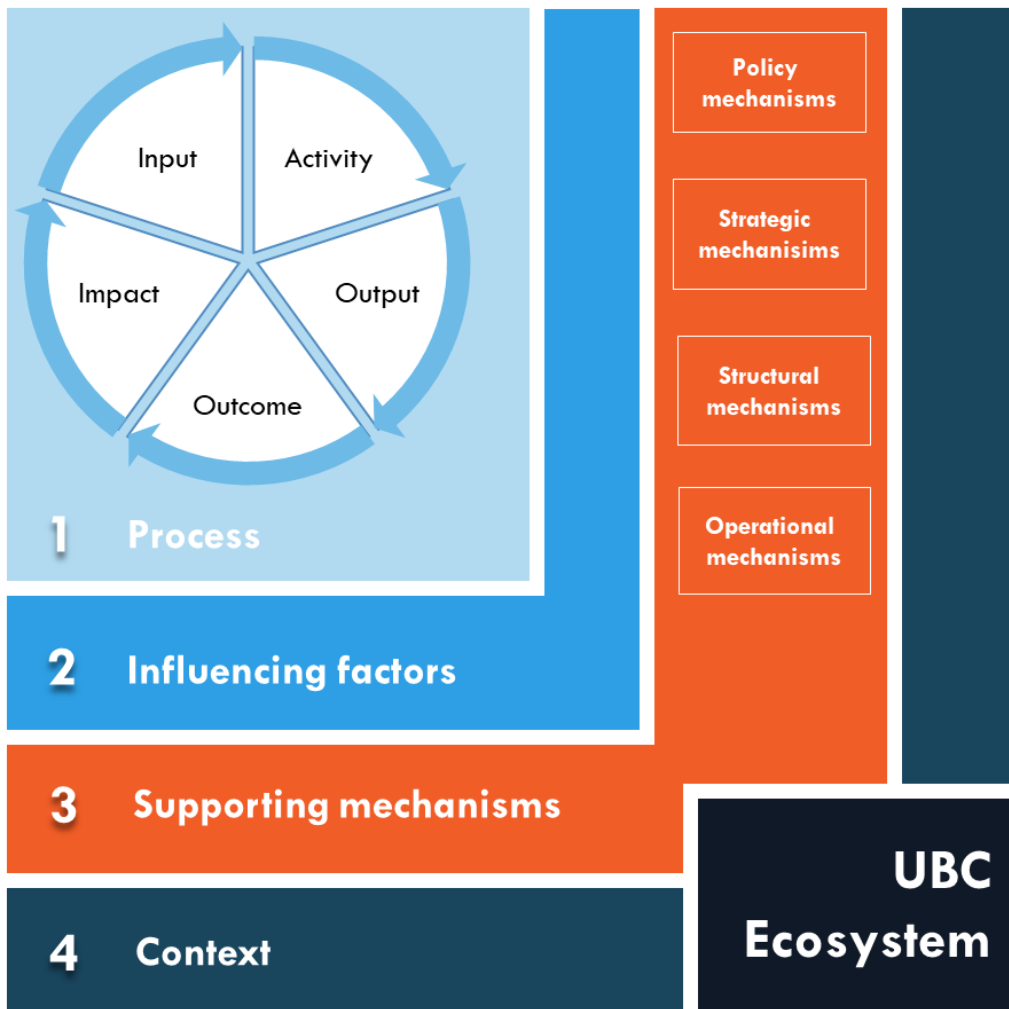


■ Detractors ■ Passives ■ Promoters

European business NPS result: 28.2

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.

Supporting mechanisms for UBC

Danish businesses can adopt a range of supporting mechanisms in their interaction with universities. Most of them are present in about a third of the business respondents.

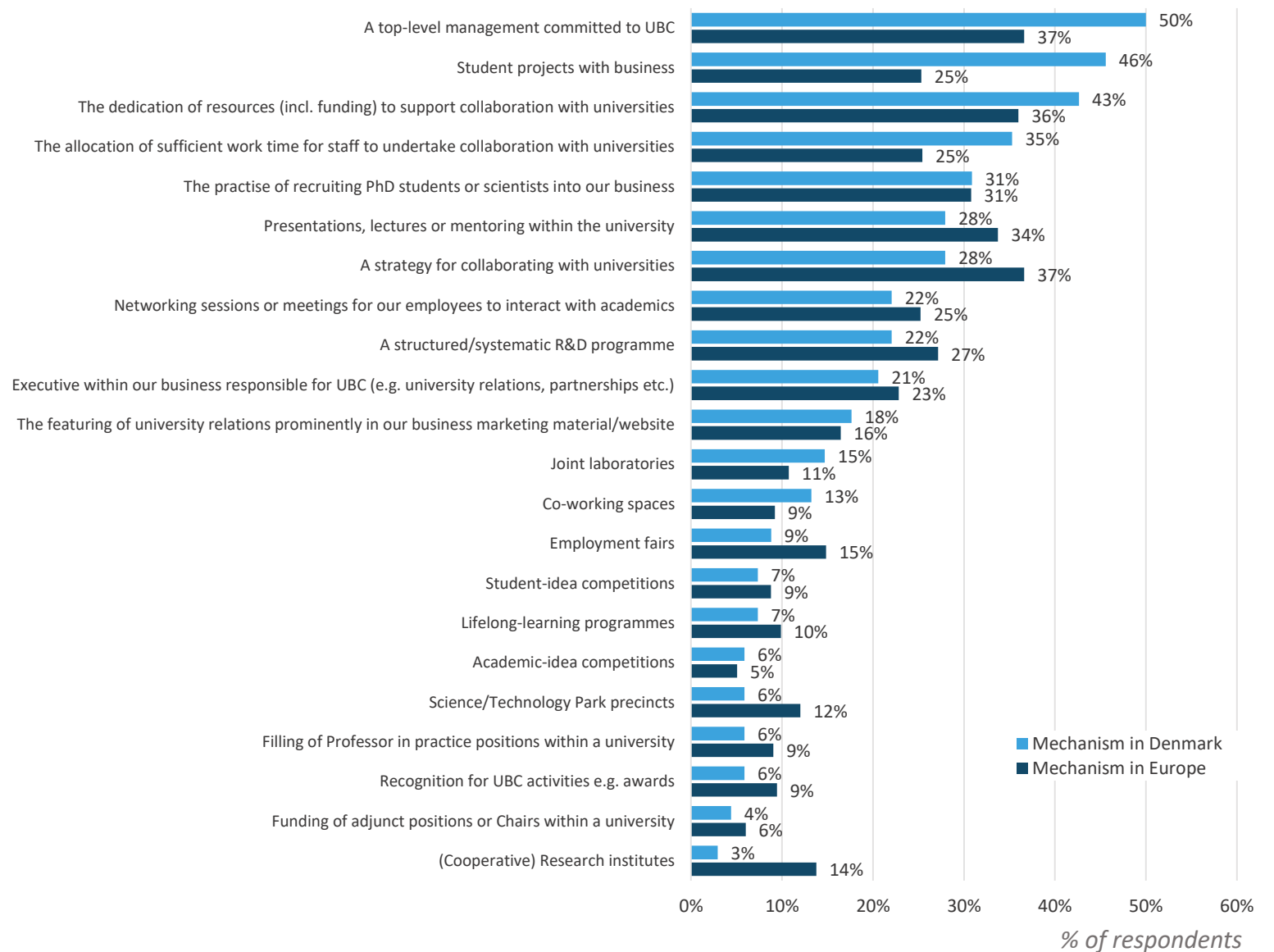
The most developed mechanism, and the only one present in half of Danish businesses is a top-level management committed to UBC (50%). This is followed by student projects (46%) and dedication of resources to support collaboration with universities (43%).

Compared to the European average, UBC supporting mechanisms such as presentations, lectures or mentoring within the university and a strategy for collaboration are less developed in Denmark.

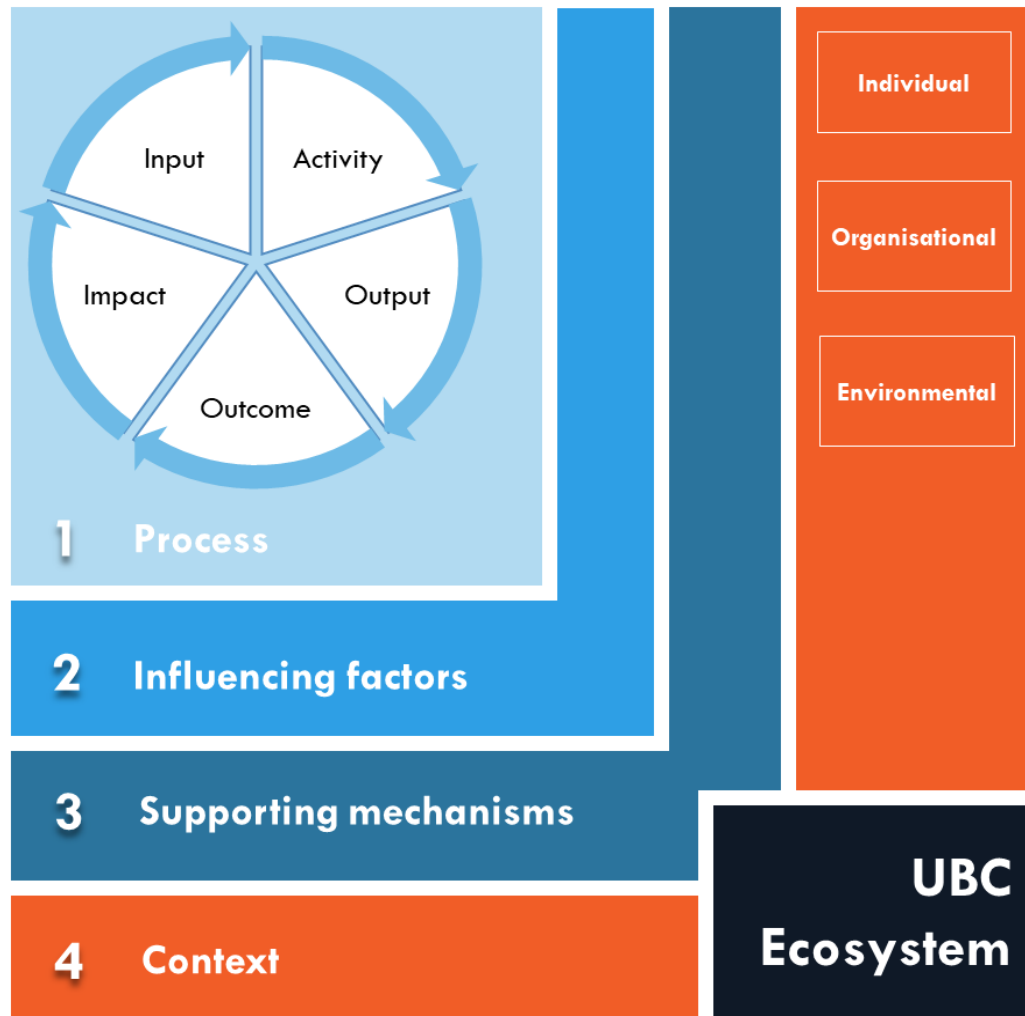
Furthermore, a higher percentage of Danish businesses dedicate resources and allocate sufficient time to undertake collaboration with HEIs.

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

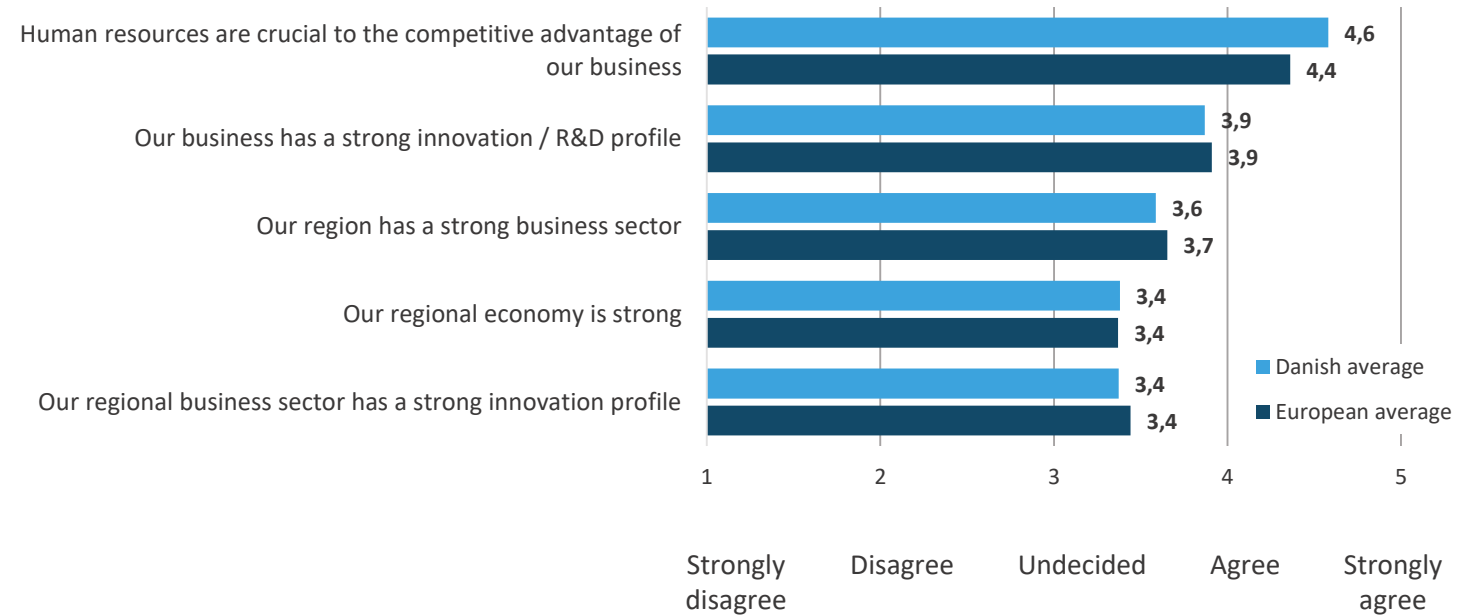
Danish businesses cooperating with universities perceive their context similarly to their European counterparts.

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

A lower perception emerges regarding the characteristics of the regional business sector and economy.

Contextual factors affecting UBC

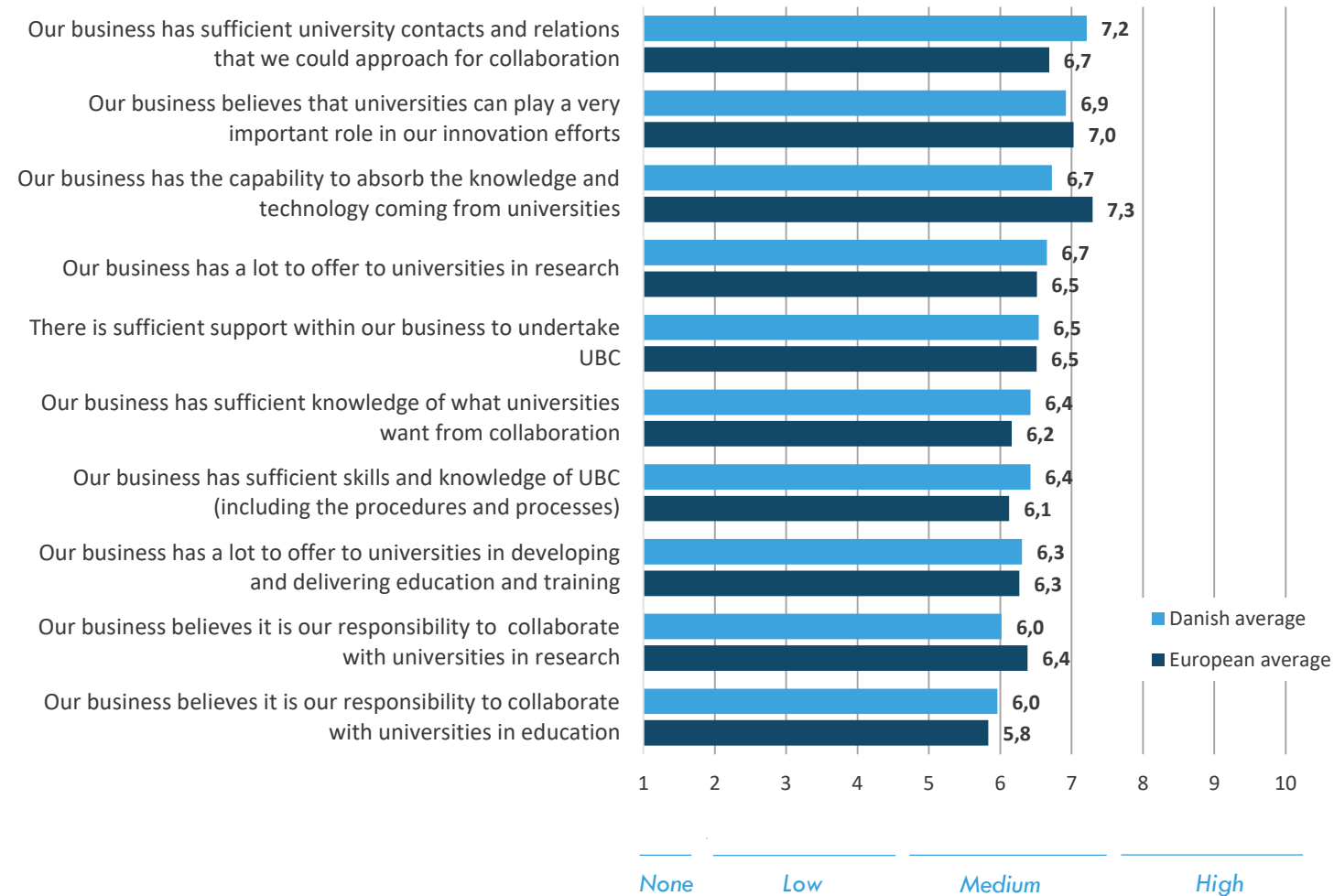
'To what extent do you agree with the following statements?'



UBC capabilities and beliefs

Supportive UBC environment

How supportive are your organisation and environment for UBC?'



Danish businesses perceive themselves as supportive towards cooperation with universities. In particular they have the sufficient university contacts and relations to undertake UBC and believe that universities play an important role in the innovation efforts.

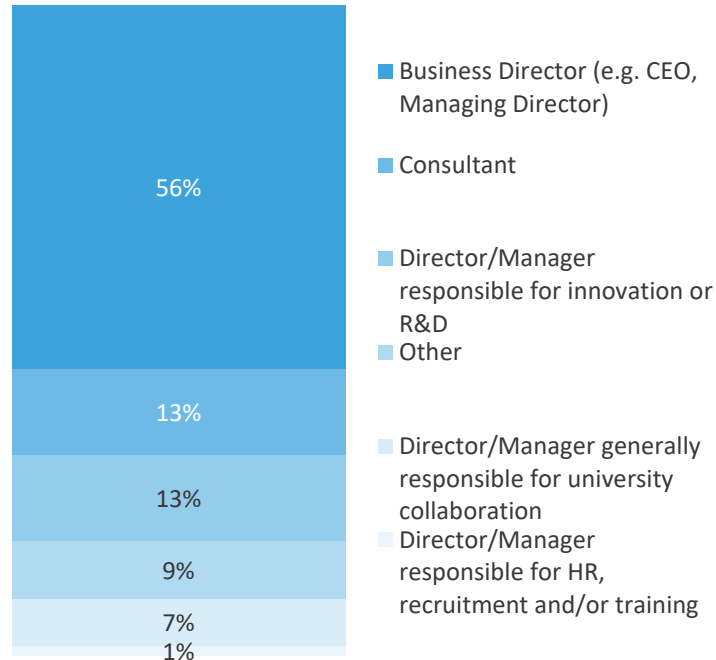
Yet, Danish businesses are less supportive towards UBC in education.

Danish business state that they have the capability to absorb knowledge and technology from universities and that they have a lot to offer to universities regarding research.

Overall, Danish businesses and their European counterparts perceive themselves very similarly.

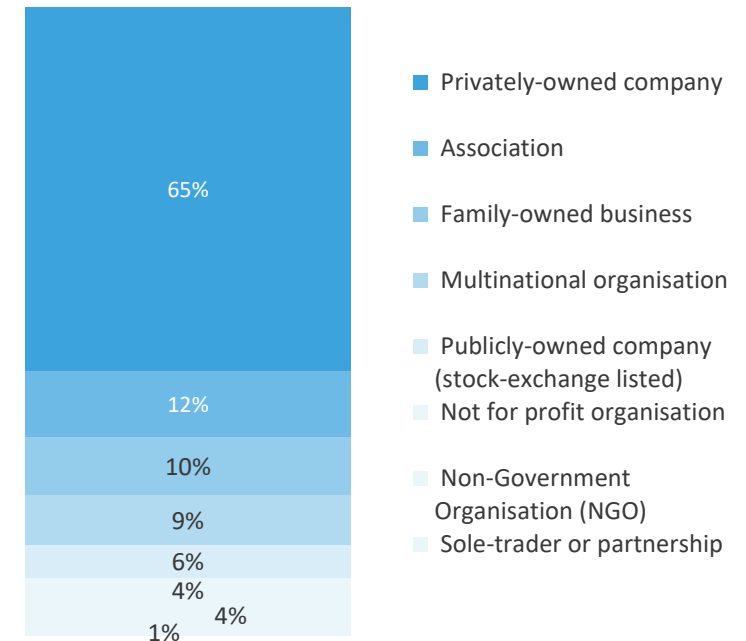
Respondents profile

Position of respondent



Over a half of the Danish business sample (56%) are business directors. Less represented groups include consultants and directors responsible for innovation or R&D (13% each). The remaining businesses identified themselves as directors responsible for university collaboration (7%) and directors of HR, recruitment and training (1%). 9% of the Danish respondents hold 'other' positions.

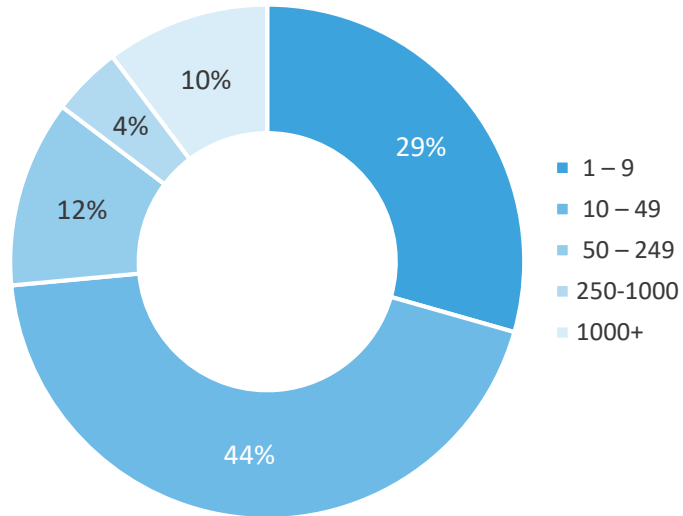
Type of business



A wide variety of businesses were represented in the Danish sample, with 'privately-owned companies' forming the largest group (65%), followed by associations (12%) and family owned businesses (10%). The type of businesses with less than 10% representation include: multinational organisations, publicly-owned companies, NGOs and sole-trader or partnerships.

Respondents profile

Business size



Sample Size	
Danish business representatives	n = 68
European business representatives	n = 3.113

Almost half of the Danish business sample (44%) is comprised by small firms (10 to 49 employees) and 29% of the respondents work for micro-sized companies and 12% for medium-sized companies. Large companies (250 to 1000+ employees) are represented by 14% of the business respondents in the sample.

Contact us

Todd Davey - davey@uiin.org

Arno Meerman - meerman@uiin.org

This report is part of the DG Education and Culture study on the University-Business Cooperation in Europe: drivers, challenges and opportunities in Europe EAC/10/2015. Further information can be found at www.ub-cooperation.eu

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