

State of University- Business Cooperation

PORTUGAL

Business Perspective

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



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

Partners



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Executive summary

Summary

This report aims at contributing to our understanding of the business perspective on university-business cooperation (UBC) in Portugal. Examining the perceptions of a wide range of businesses provides positive signs for the future, with 99% of Portuguese 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 initiatives and activities that can support their cooperation efforts. Furthermore, there is still room for improvement with respect to the availability of resources and information to undertake UBC.

About the study

The results presented in this report reflect the perceptions of business representatives in Portugal with respect to UBC. Data was collected by means of an online survey sent out via email to a business database that was developed from publicly available information, leading to a total of 95 Portuguese responses. The study measured the perceptions of respondents with respect to their businesses and cooperation efforts.

University-Business Cooperation

Portuguese businesses show a moderately high engagement in research related cooperation.

Thus, 77% of business respondents cooperate to a medium-high extent with universities in joint R&D, and 50% in consulting. Fewer businesses are involved in mobility of staff. Education related cooperation also shows significant engagement, with more than two thirds of the businesses participating in mobility of students.

Valorisation and management activities are considerably less developed with almost 40% of businesses not undertaking these types of cooperation at all. Particularly low is also the educational activity of curriculum co-design.

Portuguese businesses perceive themselves as the main actors reaching out for collaboration. They also see alumni and government as proactive UBC initiators. On the contrary, Portuguese representatives identify internal and external intermediaries as those stakeholders that less often initiate UBC.

It is them, not us

The main barriers identified by respondents relate to cultural differences between the two organizations such as the differing time horizons, a lack of people with business knowledge within universities and their focus on producing scientific outcomes. According to Portuguese business respondents, financial support mechanisms from government are missing and universities lack awareness of opportunities arising from collaborating with them.

NOTE: This report provides a business 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.

Executive summary

Relationship is key

While funding to undertake cooperation is indicated as one of the top five facilitators for UBC in Portugal, factors related to the individual relationships emerge to be of even higher importance. It is the existence of trust, commitment and a shared goal along with prior relations with a partner that facilitate cooperation for Portuguese 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 competitiveness

Businesses in Portugal cooperate with universities principally to improve their own innovation capacity and to get access to new technologies and knowledge and to. Further motivations to engage in UBC include positively impacting society, improving their reputation and getting access to new discoveries at an early stage.

Generally, Portuguese businesses perceive students and themselves as the main UBC beneficiaries.

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 more than half of the respondents indicating the existence of a defined strategy for collaborating with universities along with the dedication of resources and presentations, lectures or mentoring within the university.

Additionally, more than a third of the respondents report the practise of recruiting PhD students or scientists into the business, the existence a systematic R&D programme and a committed top-level management.

The most underdeveloped supporting UBC mechanisms in Portugal include academic-idea competitions and adjunct positions for business people within university.

Need for support and information

Portuguese businesses perceive themselves to be supportive towards UBC. They recognise the importance of universities for their innovation efforts and report they have the capability to absorb knowledge and technology from universities.

However, Portuguese businesses report the support to undertake UBC within their business to be insufficient and they perceive they lack skills and knowledge to engage in collaboration with universities.

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

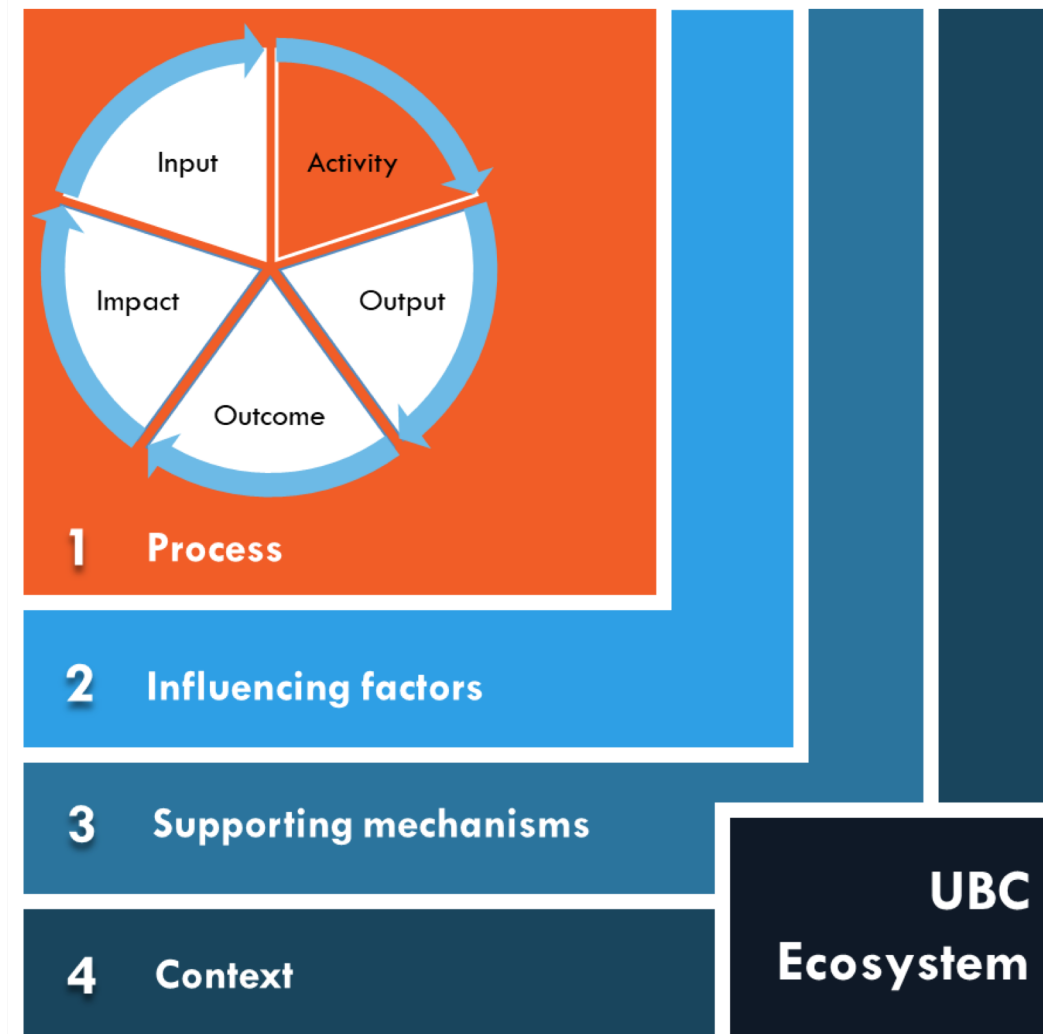
UBC activities

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

Portuguese businesses mostly engage in research UBC activities, such as joint R&D (6.6) and consulting (4.5). As for education related UBC, mobility of students (5.8) is seen as the most developed activity.

In particular over the past 10 years, activities such as collaboration in R&D and consulting have significantly increased, taking advantage of growing availability of public funding that enables businesses to hire these services from HEIs. More and more Portuguese companies are placing innovation at the centre of their business strategies, which leads them to work together with universities and other knowledge centres.

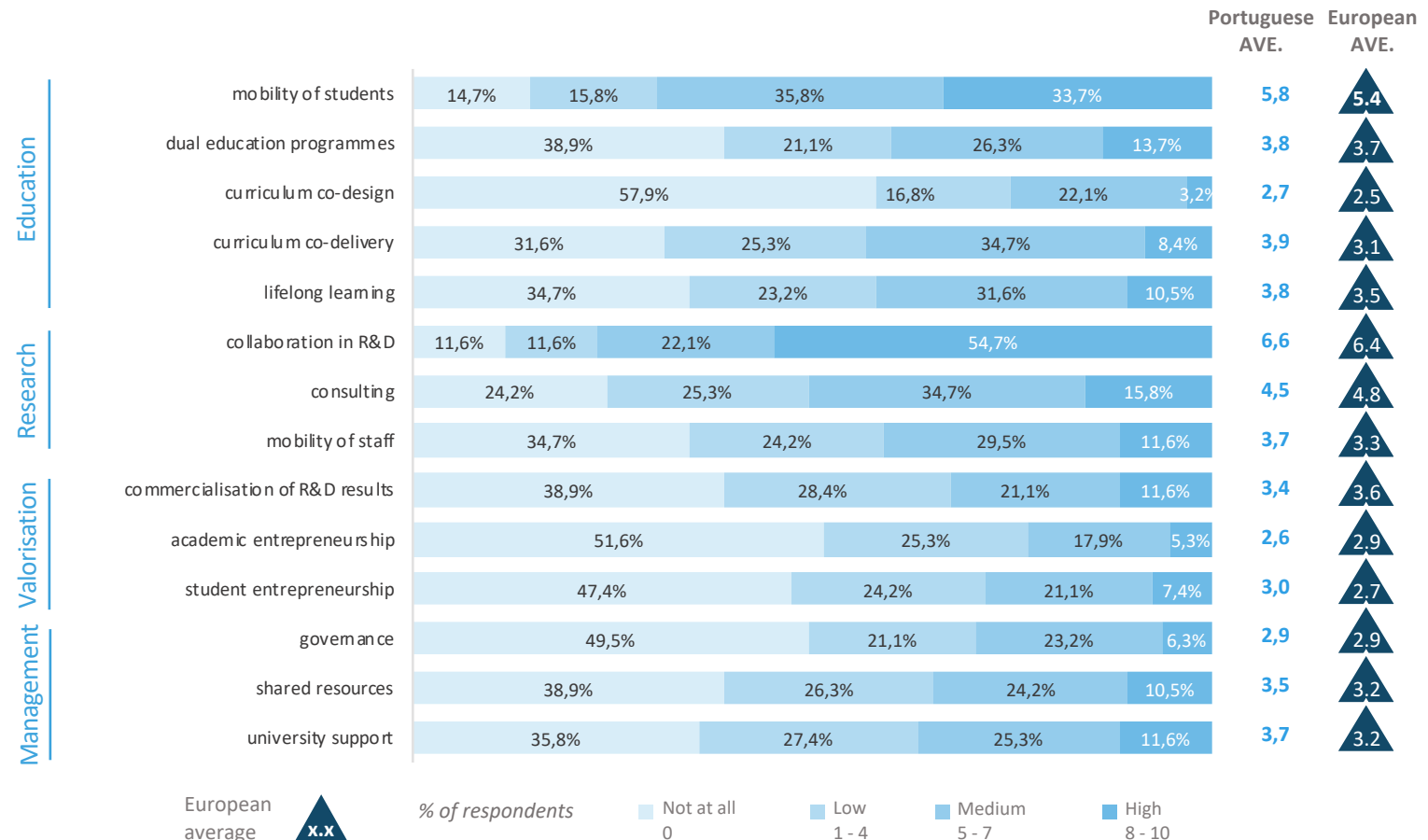
Over a third of businesses do not undertake any management or valorisation related collaborative activities. University support of UBC rates the highest in these categories (3.7). Portugal has a larger share of micro enterprises and SMEs in turnover compared to EU average, and also a smaller share of large companies in turnover. Furthermore, the country has also lower percentages of high and medium high-tech industrial companies and knowledge-intensive service companies compared to EU average.

Particularly low intensity is found in the activities of curriculum co-design, academic entrepreneurship and governance.

In comparison with the development of the UBC activities for European business, the Portuguese one is very similar.

UBC activities development

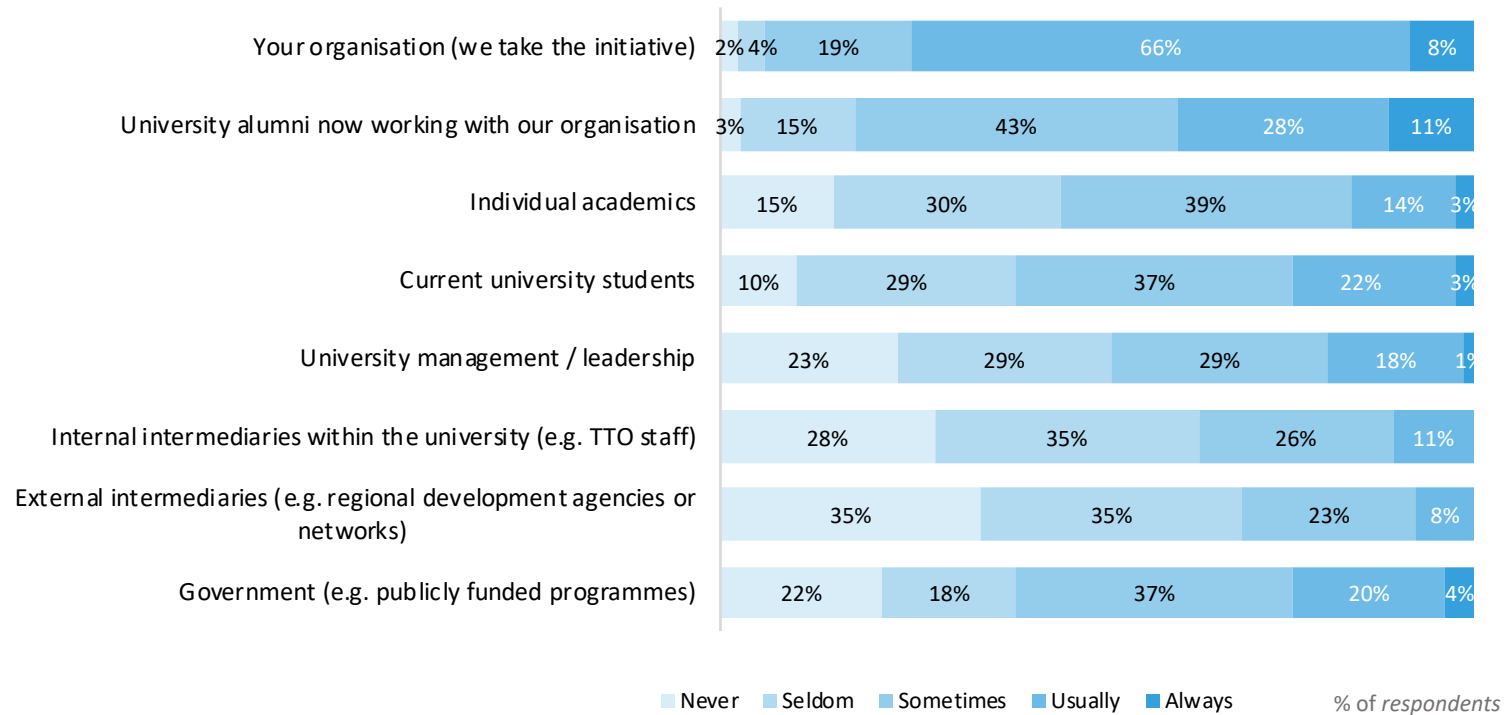
'Which UBC activities do you collaborate with universities in?'



Initiation of UBC

How UBC is initiated

'How often various stakeholders initiate UBC activities'



Portuguese businesses clearly see themselves as the main initiators of cooperation with universities. 74% of business representatives state that their organisations always or usually initiate UBC.

Portuguese businesses perceive also the university alumni and government as rather active UBC initiators.

External and internal intermediaries are perceived as passive in UBC initiation. 70% and 63% of the business representatives respectively report that the above mentioned stakeholders never or seldom undertake any first actions towards UBC initiation.

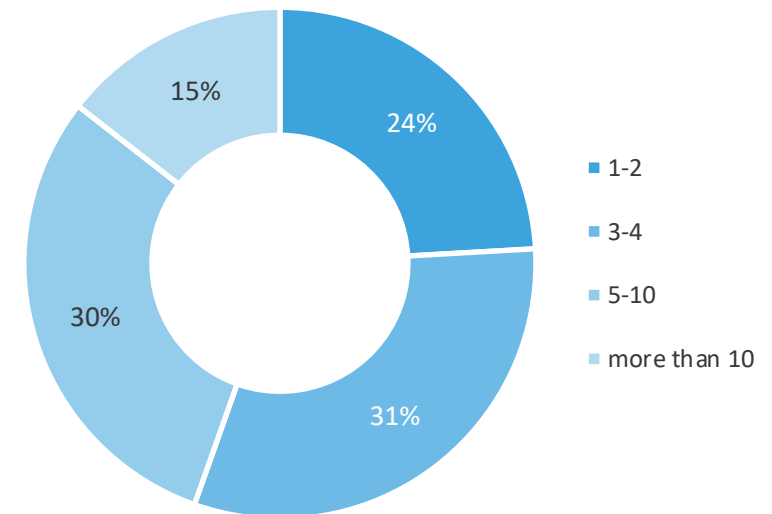
Geographical location still matters

Location of university partners

Percentage of cooperating businesses with...	
universities in their region	93%
universities in their country	92%
universities outside their country	75%

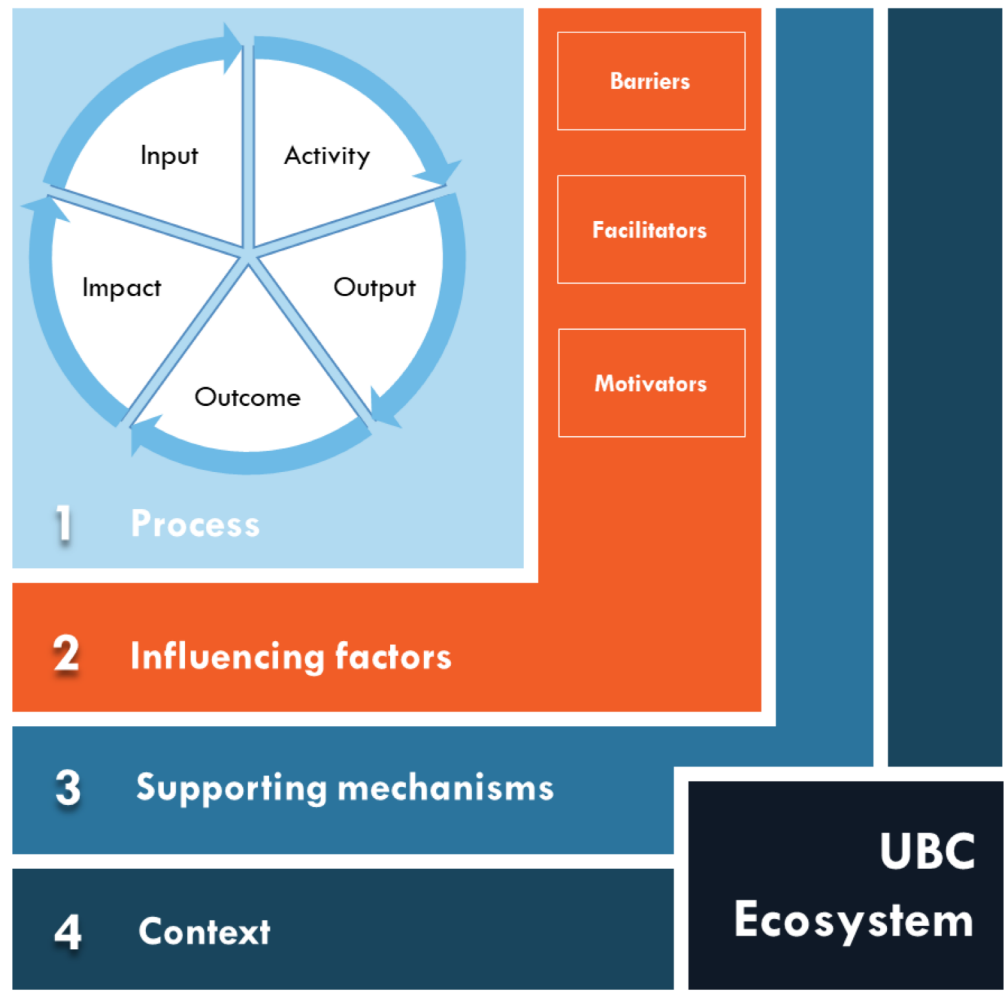
Most Portuguese businesses cooperate with Portuguese universities (93%) and regional universities (92%) equally. The results also indicate that 75% of Portuguese businesses engage in UBC with international university partners.

Number of university partners



Over a half of the Portuguese businesses (55%) in the sample cooperate with less than 4 university partners. While 30% have established relations with 5-10 partners, only 14% engage in UBC with more than 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 UBC for Portuguese businesses are diverse.

The major barrier is related to cultural differences, such as differing time horizons between universities and business.

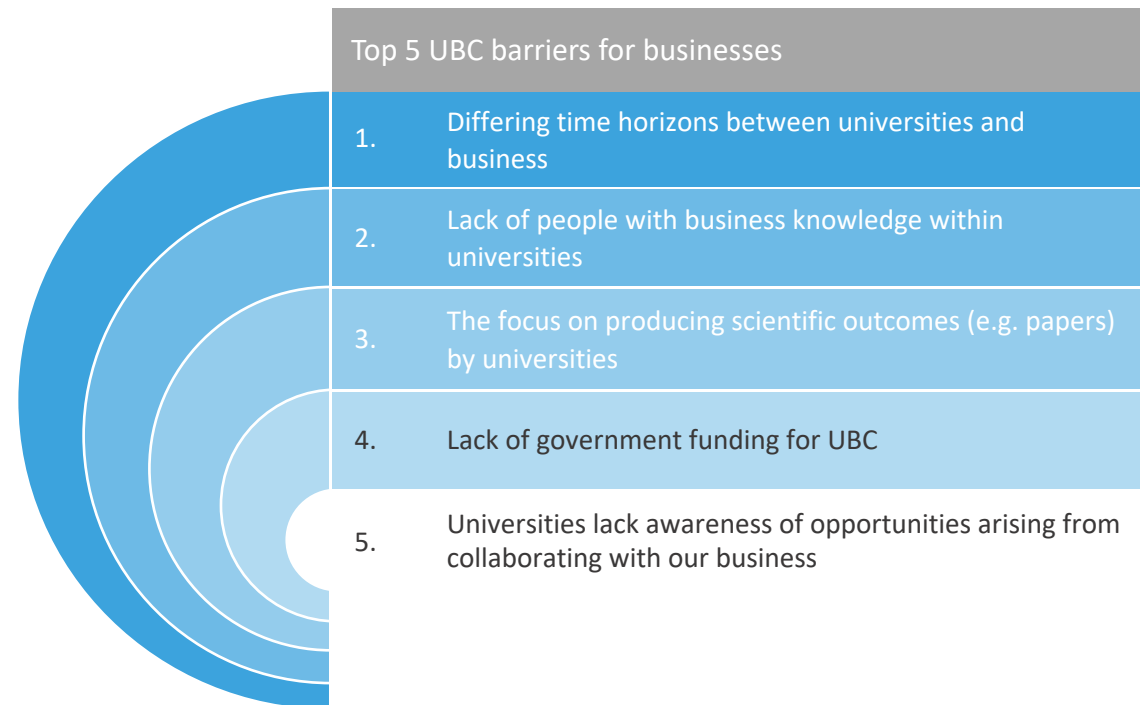
Portuguese businesses indicate lack of professionals with business knowledge at universities, and the focus of the latter on the production of scientific outcomes as notable barriers hindering their collaboration.

The only financial barrier reported is the lack of government funding for UBC.

Portuguese businesses also see the universities' lack of awareness of opportunities arising from UBC as an important barrier to collaboration.

Barriers

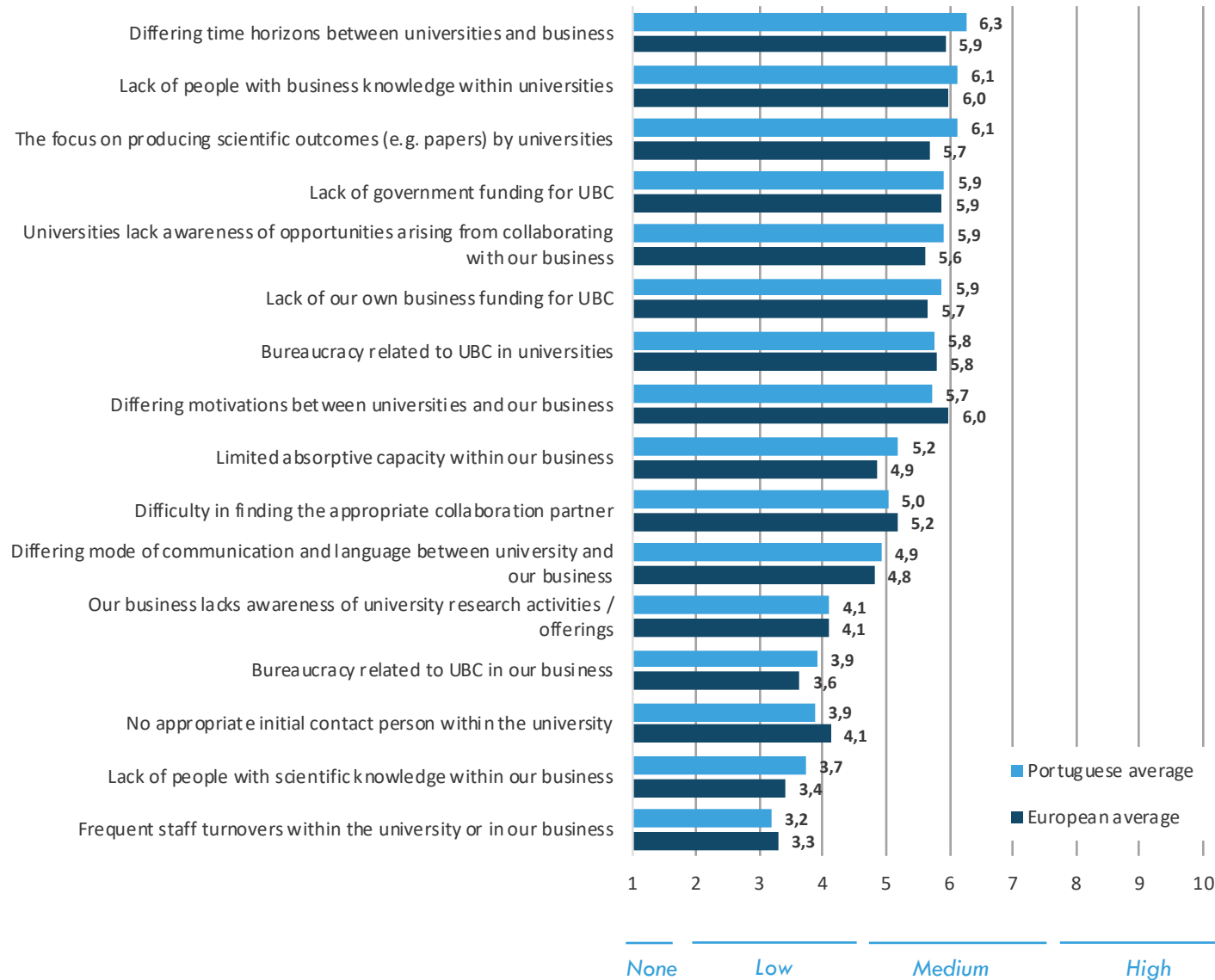
'What is inhibiting your cooperation with universities?'



Barriers hindering UBC

Barriers

'What is inhibiting your cooperation with universities?'



The majority of barriers is similarly perceived by both cooperating Portuguese businesses and their European counterparts. However, Portuguese businesses perceive half of the barriers slightly higher.

Both groups agree on the top two barriers, which are differing time horizons and lack of business expertise within university. This shows some evidence that Portuguese universities have experienced difficulties in professionalising and delivering services that meet companies' needs.

Yet, Portuguese businesses attribute considerably less importance to the differing motivations between two organisations, even though it is the most prominent barrier to UBC for the business in Europe.

Human resources related issues, namely, lack of scientific knowledge within businesses and frequent staff turnover are the least influencing barriers reported by both groups.

Drivers stimulating UBC

The main factors that facilitate Portuguese business cooperation with universities mostly relate to their personal relationships.

A relationship based on mutual trust, commitment, and shared goal lies the foundation for smoother and more successful UBC. The existence of prior relationship between partners is also seen as an important.

The funding to undertake UBC is reported as the second most stimulating facilitator for Portuguese businesses 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:

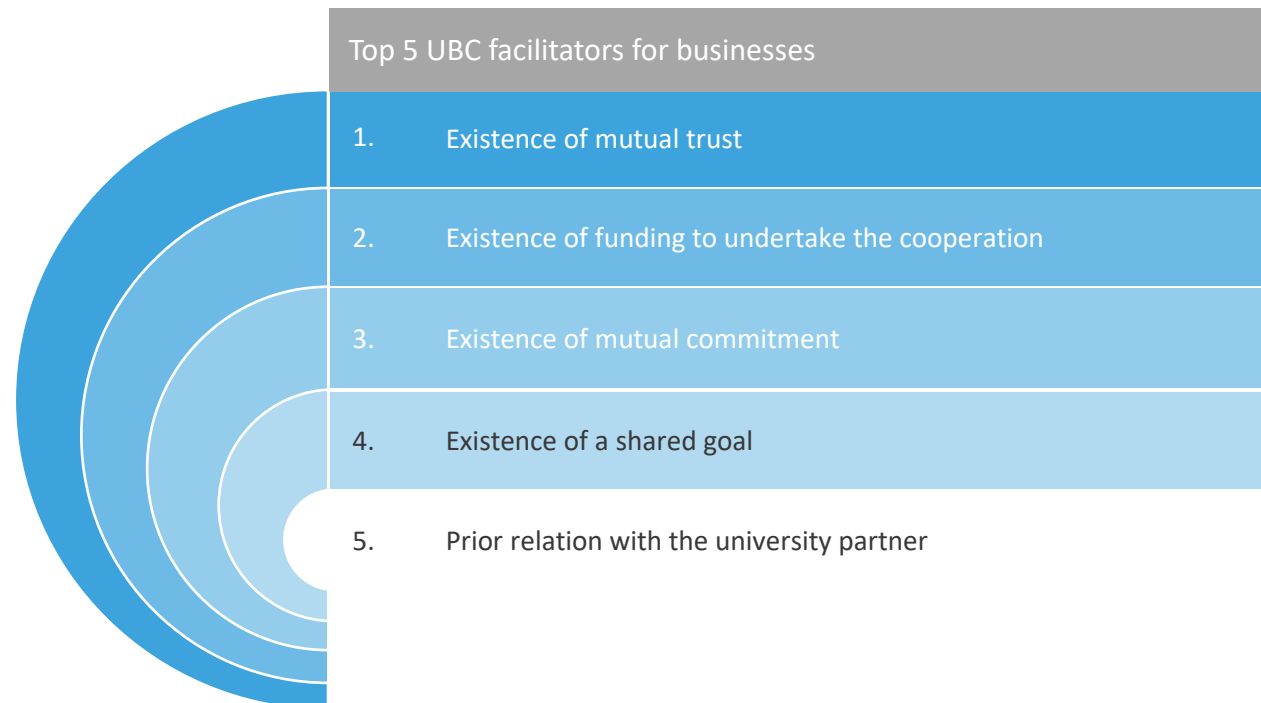
1. **Facilitators** – factors that enable or ease cooperation
2. **Motivators** – incentives or benefits that the respective stakeholders would like from the cooperation

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

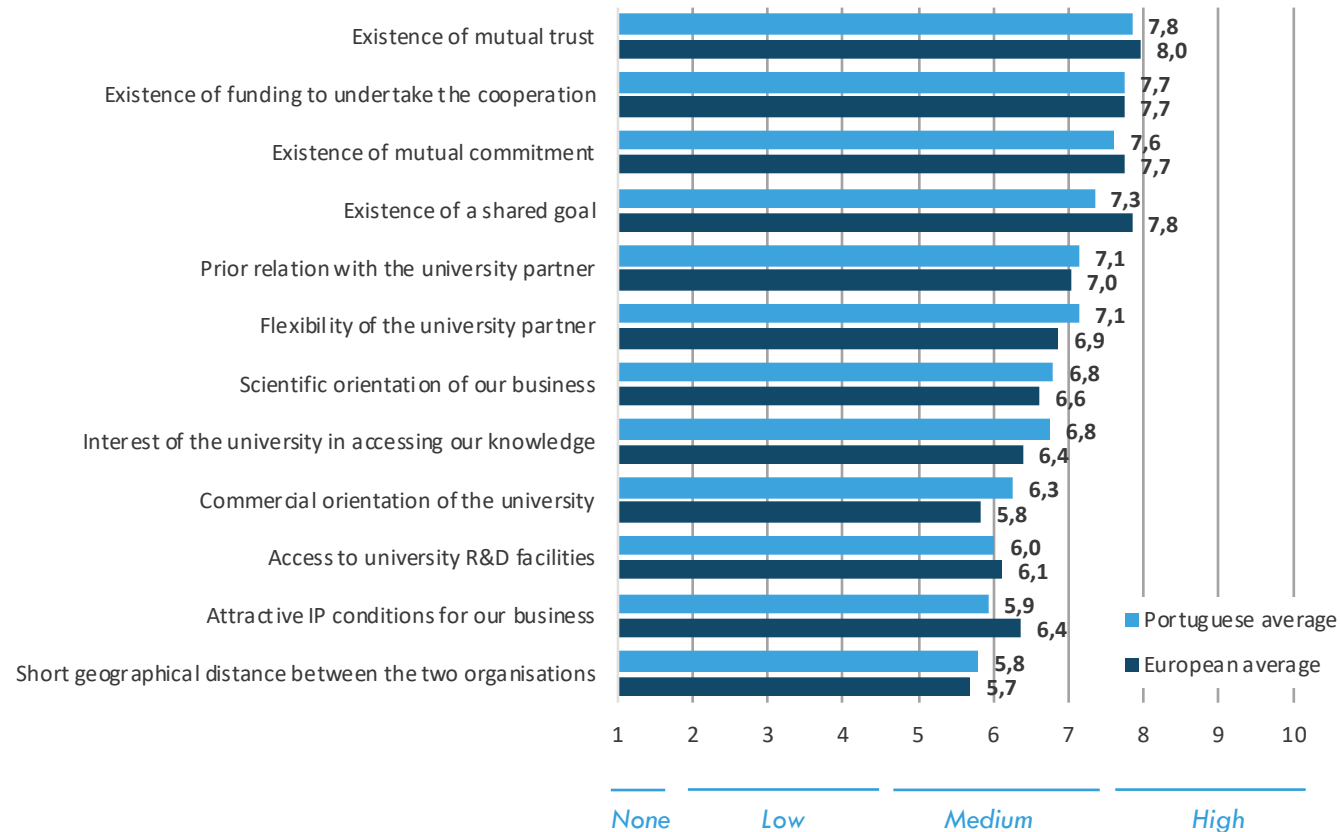
'What is facilitating your cooperation with universities?'



Drivers stimulating UBC

Facilitators

'What is facilitating your cooperation with universities?'



Portuguese and European businesses have similar perceptions of the factors facilitating their cooperation with universities.

Overall, the relationship related facilitators bear a significant importance for both groups.

However, UBC for Portuguese businesses is less driven by the existence of a shared goal than for their European counterparts.

Additionally, compared to European average, the attractive IP conditions for businesses also have less significance for Portuguese businesses.

Both groups agree that geographical distance is the least important facilitator for enabling collaboration.

Drivers stimulating UBC

The main motivation for Portuguese business to undertake UBC is mostly related to its innovation profile and competitiveness.

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

Portuguese companies are more and more placing innovation at the centre of their business strategies, which leads them to work together with HEI and other knowledge centres. Furthermore, activities such as knowledge transfer and collaborative RTD and innovation have increasingly been supported by public policy measures.

Portuguese businesses are also motivated to positively impact the society, but at the same time improve their own reputation.

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

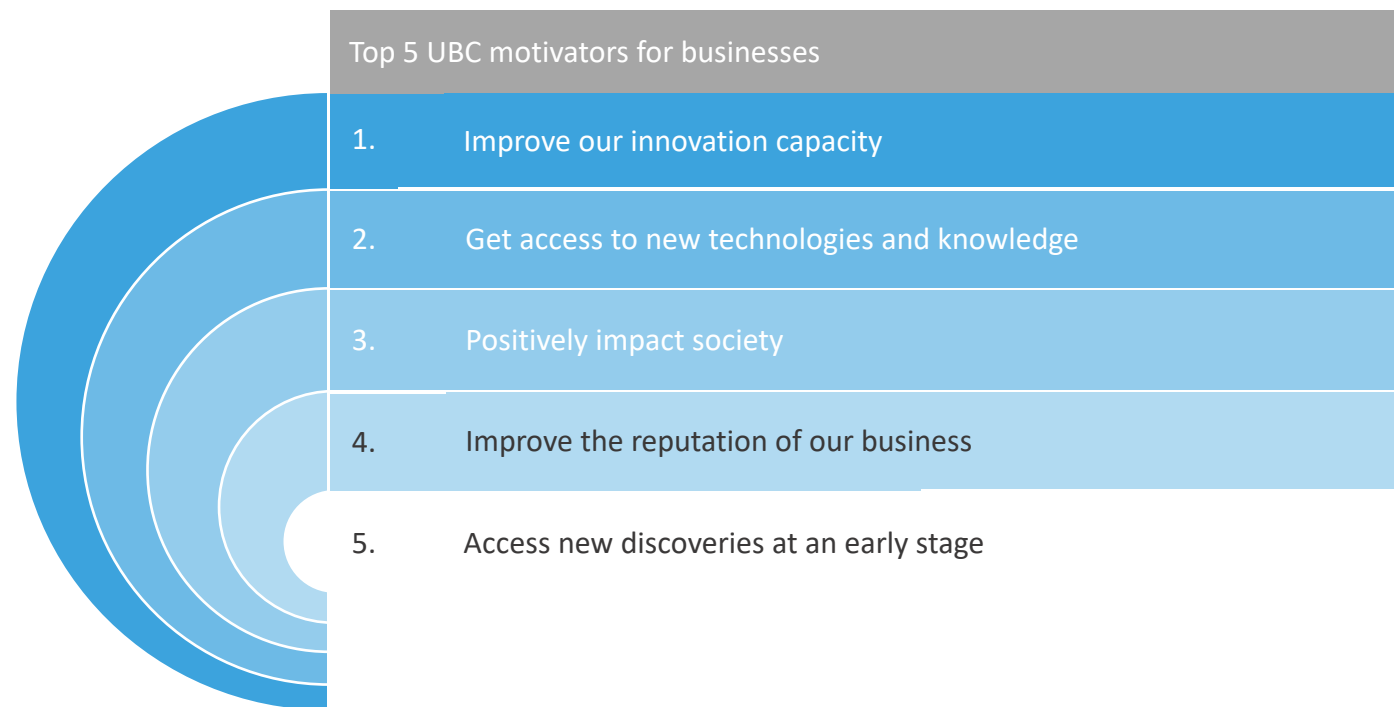
Motivations for UBC are the reasons why businesses collaborate with university.

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

Motivators

'What motivates you to cooperate with universities?'

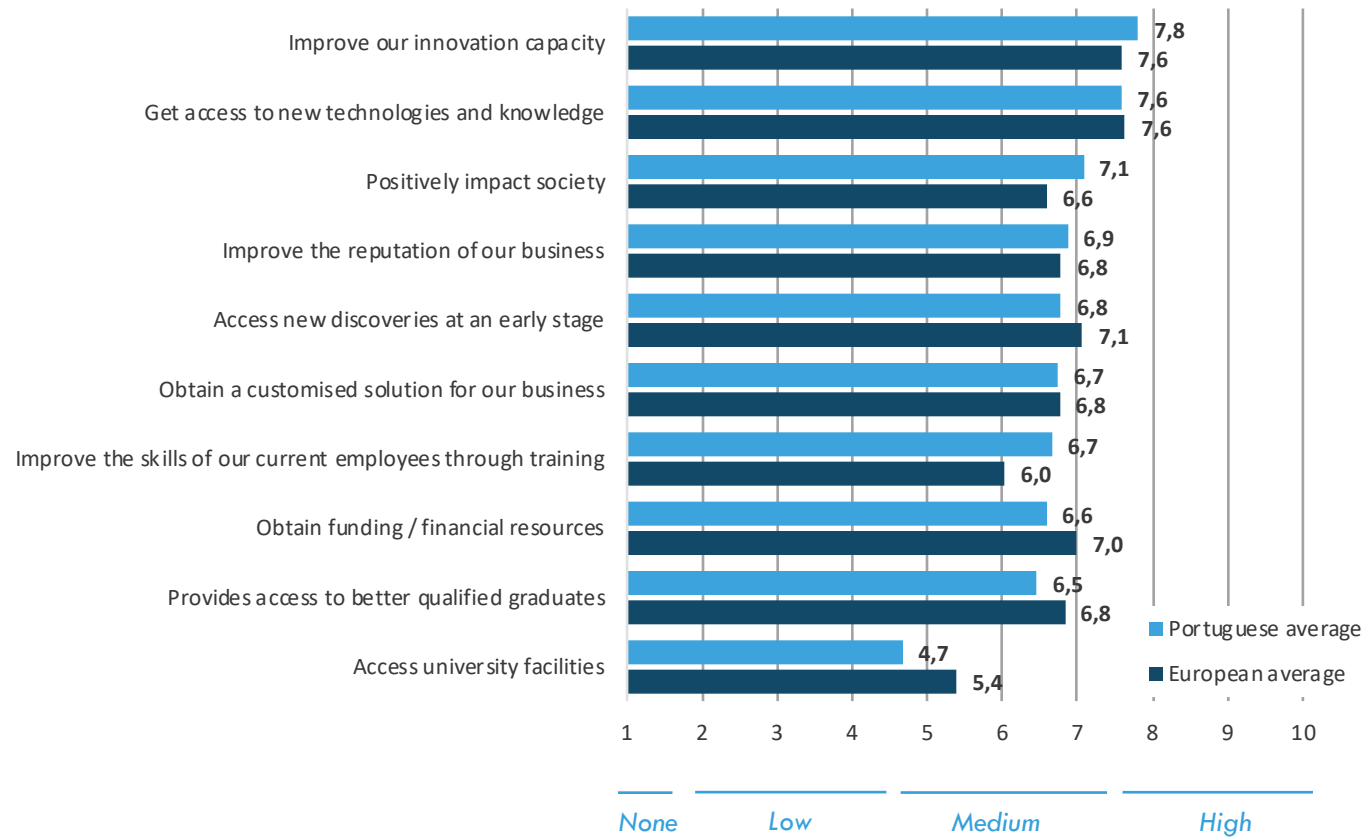
The ability of the collaboration to achieve these outcomes will have a substantial influence on the businesses' assessment of the success of their collaboration.



Drivers stimulating UBC

Motivators

'What motivates you to cooperate with universities?'



Overall, for both Portuguese and European businesses the motivations to engage in UBC are relatively similar.

The willingness to positively impact society is higher for Portuguese businesses than for their European counterparts.

Likewise, Portuguese businesses are more interested to improve the skills of their workforce through training more than employees.

Contrary, in comparison with European average, Portuguese businesses are considerably less motivated to obtain financial resources and get an access to better qualified graduates.

Even though European businesses are more interested in accessing university facilities than Portuguese ones, it is still the least relevant motivator for both groups.

Benefits of UBC

Portuguese and European businesses have the same perception in respect to which stakeholder groups benefit more or less from UBC.

Both groups see students as primary beneficiaries of UBC.

Portuguese and European businesses identify themselves and universities as further stakeholder groups benefiting from UBC.

Less benefitting actors are academics, society and the 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?'

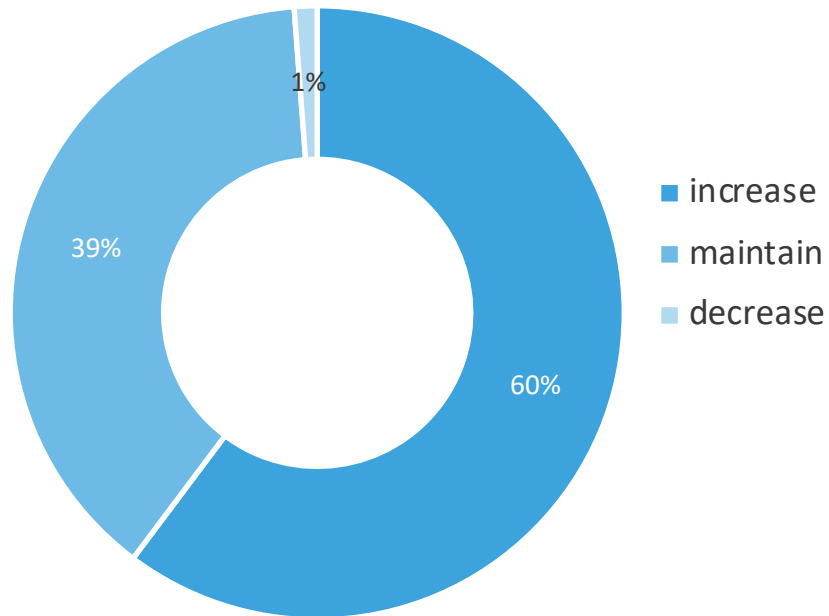


	Portuguese businesses	European businesses
1.	Students	Students
2.	Businesses	Universities
3.	Universities	Businesses
4.	Academics	Academics
5.	Society	Society
6.	Government/public authorities	Government/ public authorities

Future intentions

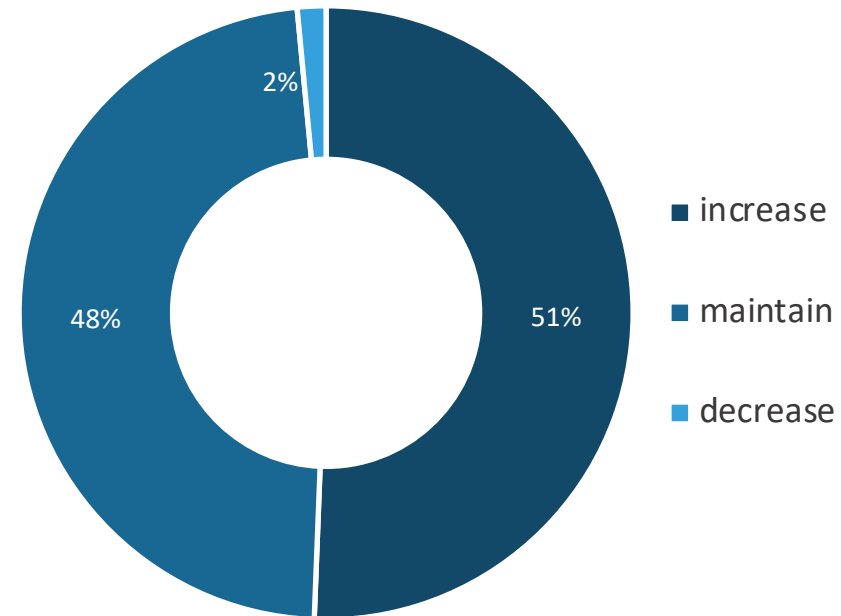
Future UBC intentions – Portugal

As answered by Portuguese businesses



Future UBC intentions – EUROPE

As answered by European businesses



60% of Portuguese businesses engaging in UBC plan to increase their cooperation, while 39% will maintain it. Only 1% of the respondents intend to reduce it. This shows an important momentum for UBC in Portuguese industry.

European businesses seem to be also confident in their future intentions towards UBC. 51% plan to increase cooperation activities, and 2% expect to reduce them.

Willingness to recommend UBC

The willingness of Portuguese cooperating businesses to recommend engaging in UBC varies depending on whether this cooperation is in research or in education.

Portuguese businesses are equally satisfied with UBC in research as their European counterparts (NPS=30). While 46% of them will promote it positively, 16% would do it negatively.

Contrary, Portuguese businesses are less satisfied with their cooperation in education (NPS=1). While one third would recommend engaging in UBC, other two thirds would either not do that at all or disparage 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

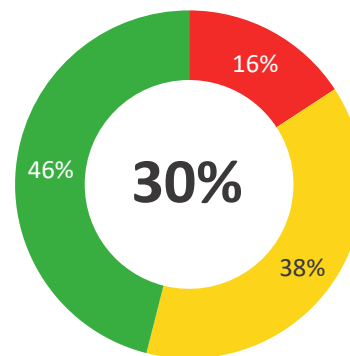
education and training (E&T). The *Net Promoter Score* metric offers a proxy for customer satisfaction.

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	16%	38%	46%	30%
Business cooperating with universities in E&T	33%	32%	34%	1%

Satisfaction with cooperation with universities (net promoter score)

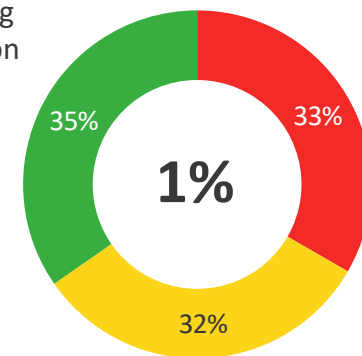
Business cooperating in research



■ Detractors ■ Passives ■ Promoters

European business NPS result: 28.2

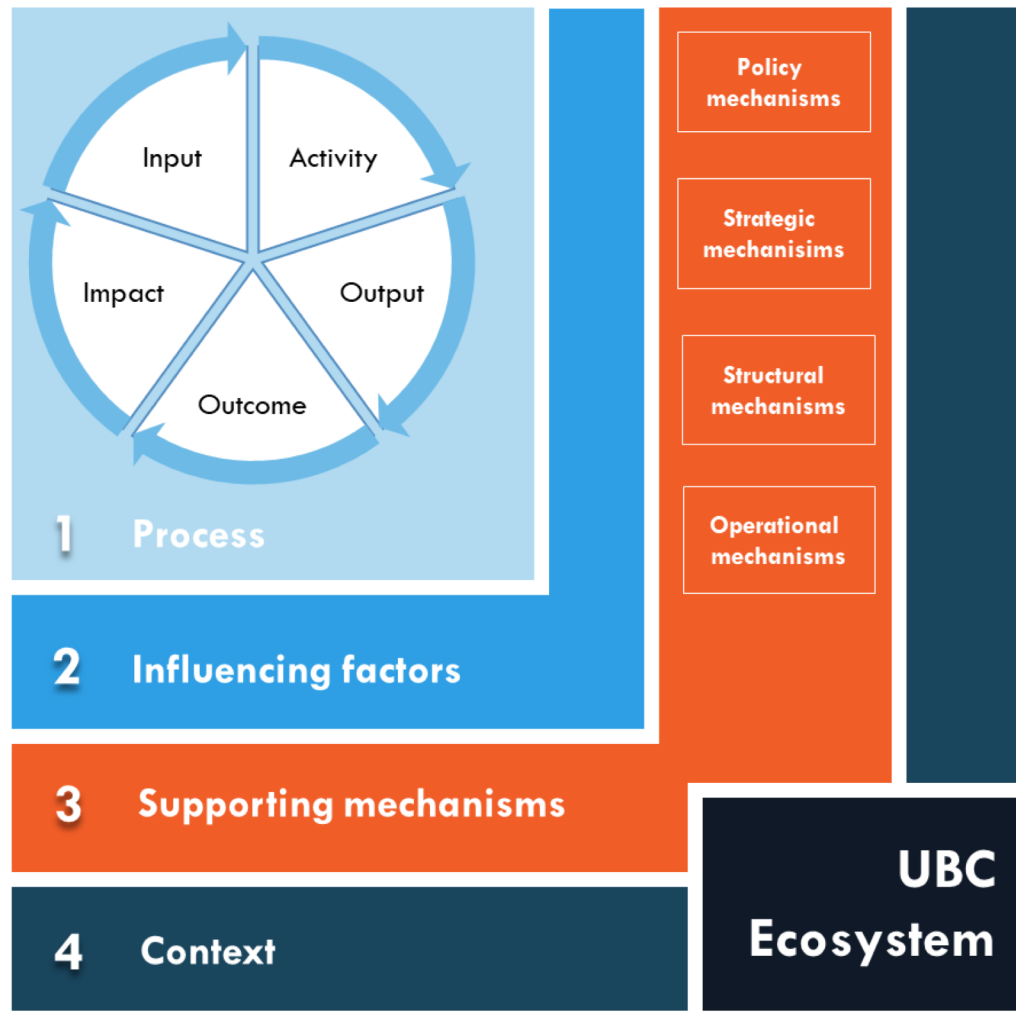
Business cooperating in education



■ 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.

Supporting mechanisms for UBC

Although Portuguese businesses can adopt a range of supporting mechanisms in their interaction with universities, the majority of mechanisms are present only at less than a third of Portuguese businesses.

The most developed mechanism, and the only one adopted by over half of Portuguese businesses is a strategy for collaborating with universities (53%). The dedication of resources and presentations, lectures or mentoring within the university are other most commonly present mechanisms (43% each).

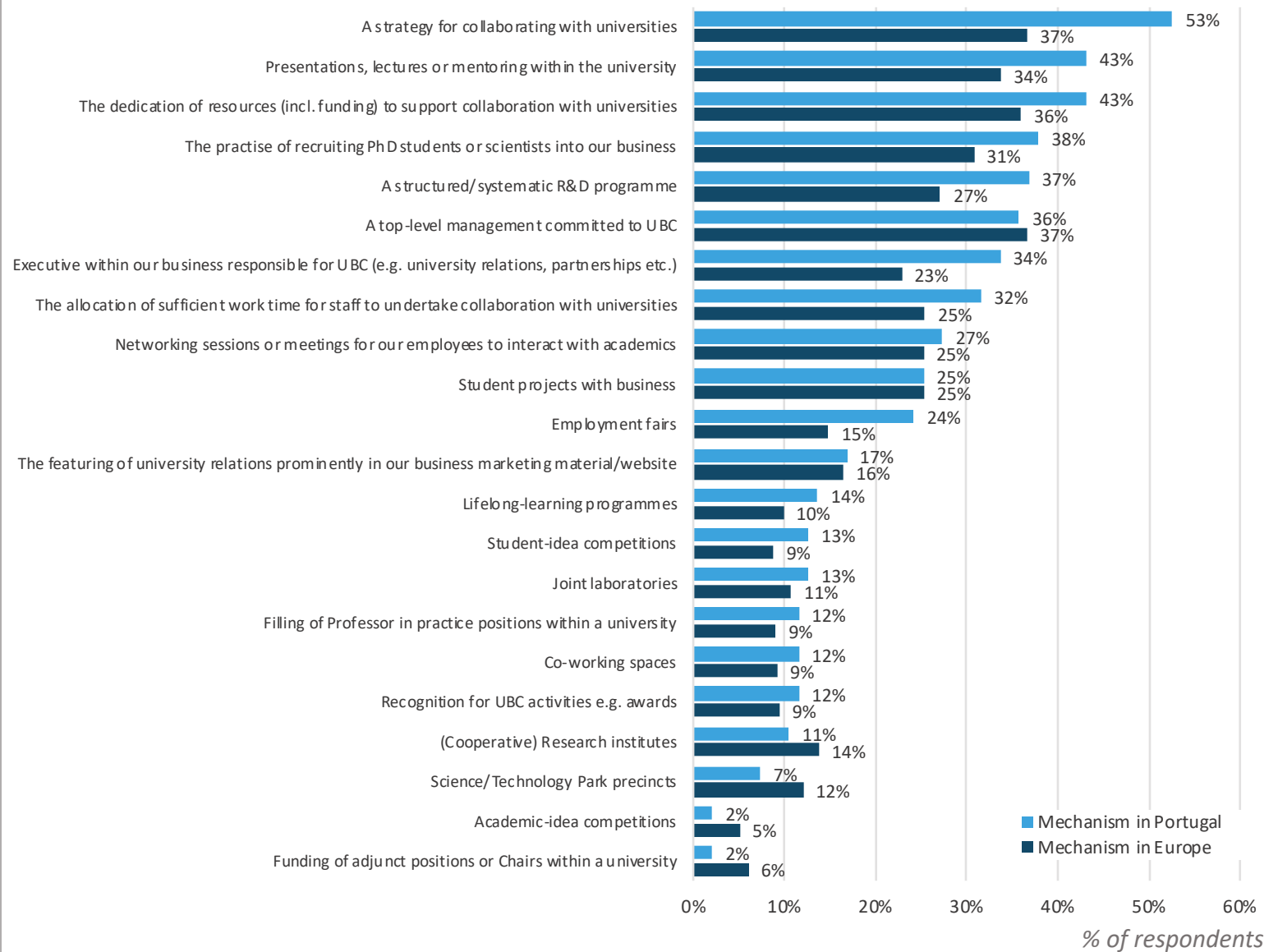
Compared to European average, most of UBC supporting mechanisms adopted by Portuguese businesses are generally more developed.

However, the mechanisms related to infrastructure, including cooperative research institutes or science parks, are less common for Portugal than for Europe.

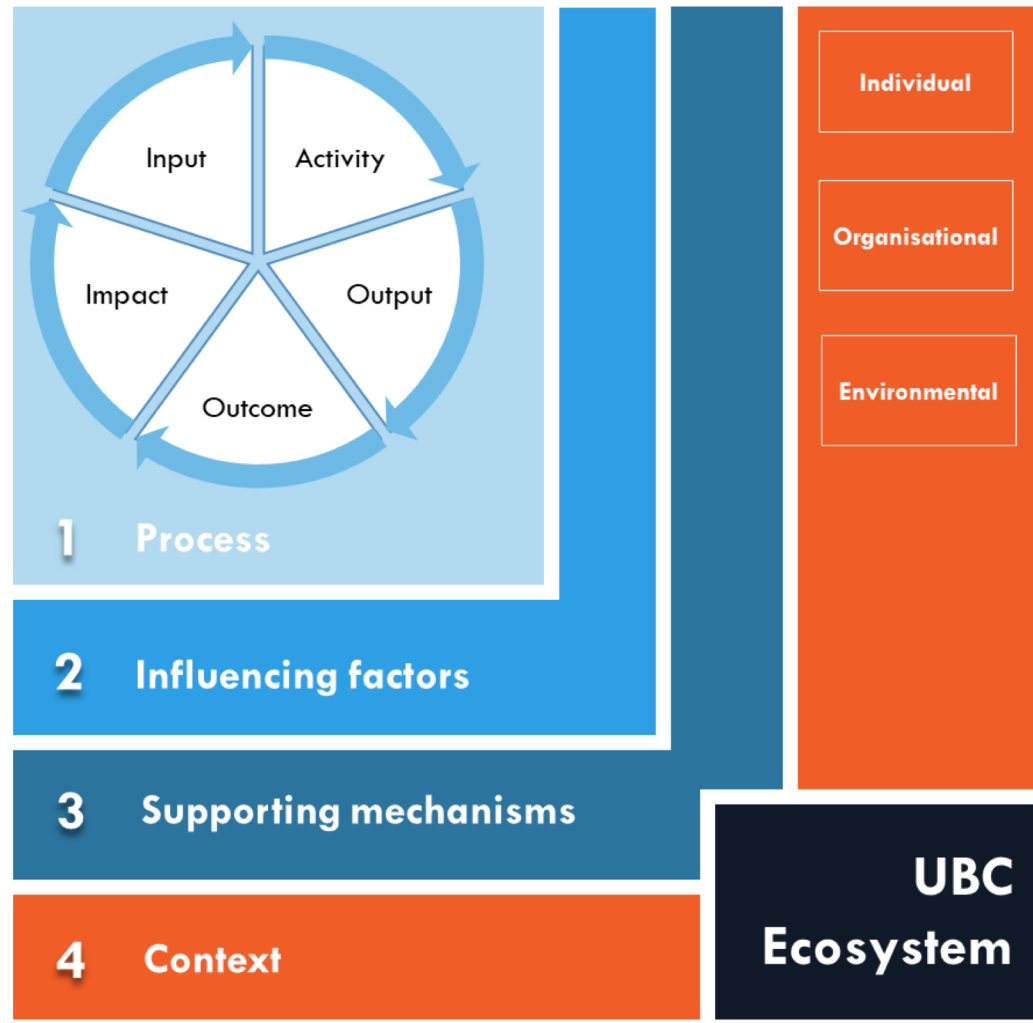
Academic-idea competitions (2%) and adjunct positions for business people within university (2%) are the most undeveloped mechanisms for Portuguese businesses.

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

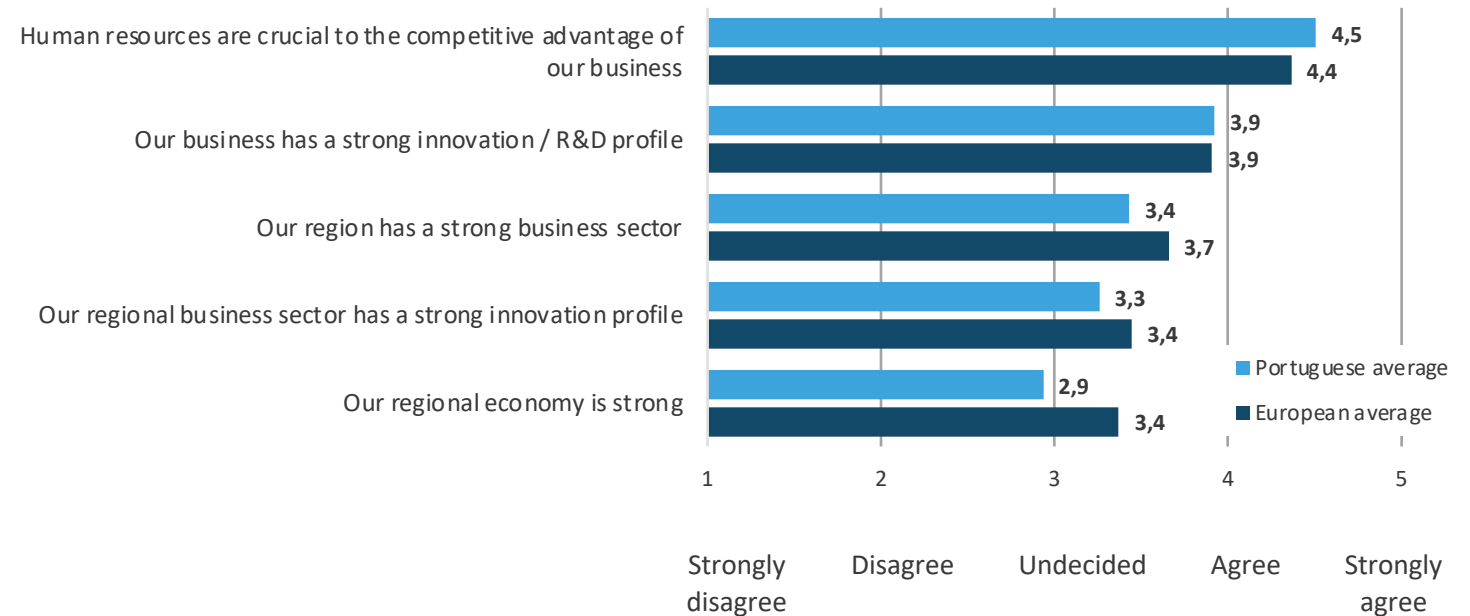
Portuguese and European businesses cooperating with universities perceive similarly the contextual factors affecting these relationships.

Human resources are essential for competitiveness of Portuguese businesses. They also see their business innovation and R&D profile as strong.

A less positive perception emerges regarding the strengths of the regional business sector and economy, where the rates are lower than European average.

Contextual factors affecting UBC

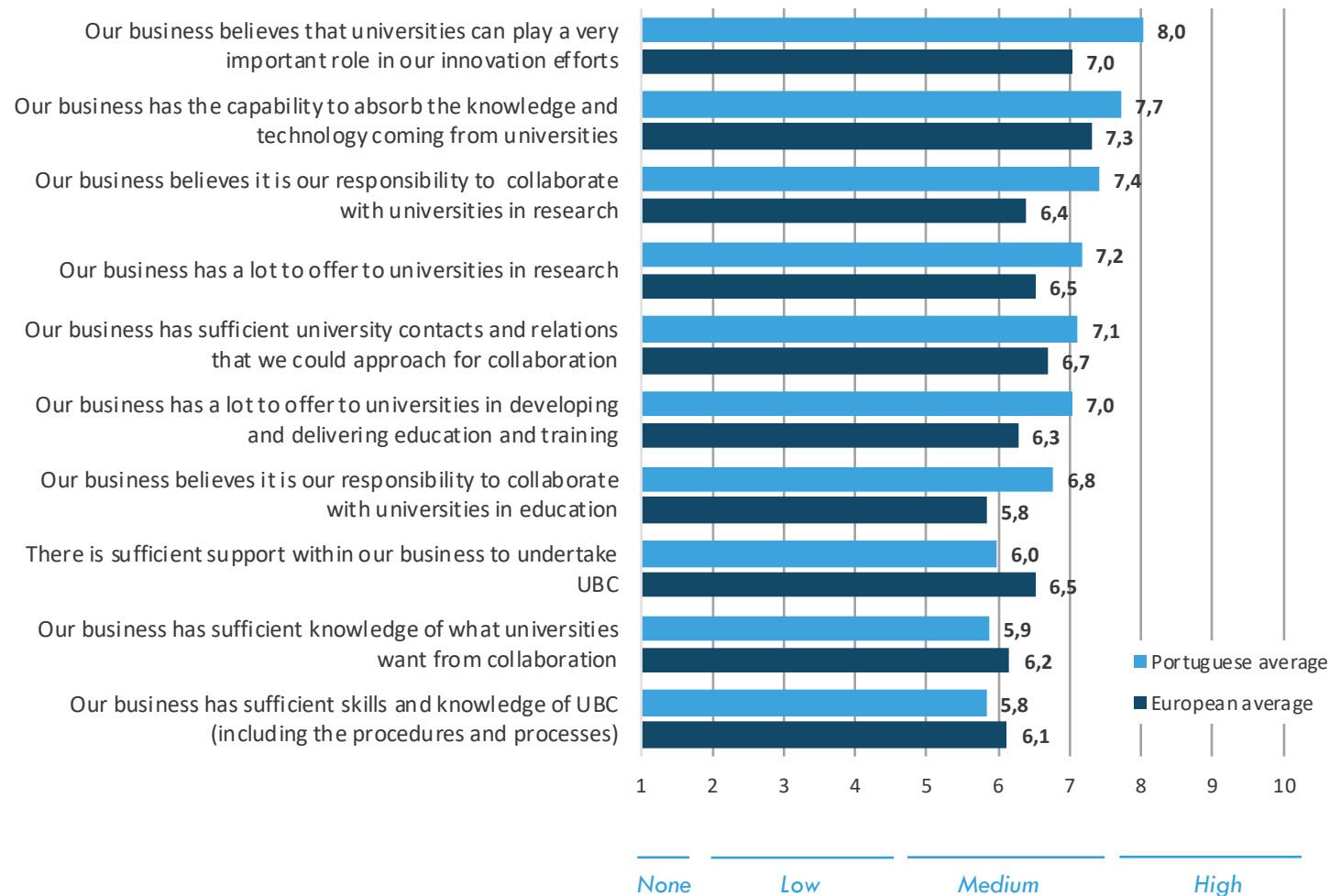
'To what extent do you agree with the following statements?'



UBC capabilities and beliefs

Supportive UBC environment

How supportive are your organisation and environment for UBC?'



Portuguese businesses perceive themselves as supportive towards cooperation with universities.

In particular, Portuguese businesses recognise the importance of universities for their innovation efforts. They also have the capability to absorb knowledge and technology from them.

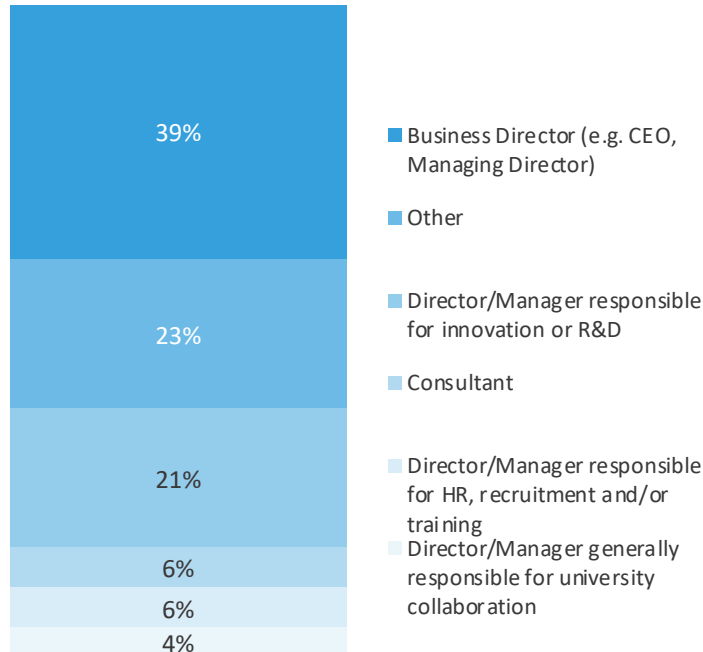
Yet, Portuguese businesses are less supportive towards UBC in education and training.

Similarly, Portuguese businesses are less positive about their knowledge of what universities want from collaboration, and UBC procedures and processes, where their European counterparts rated higher.

In general, Portuguese businesses perceive their capabilities in a more positive way in comparison to European average.

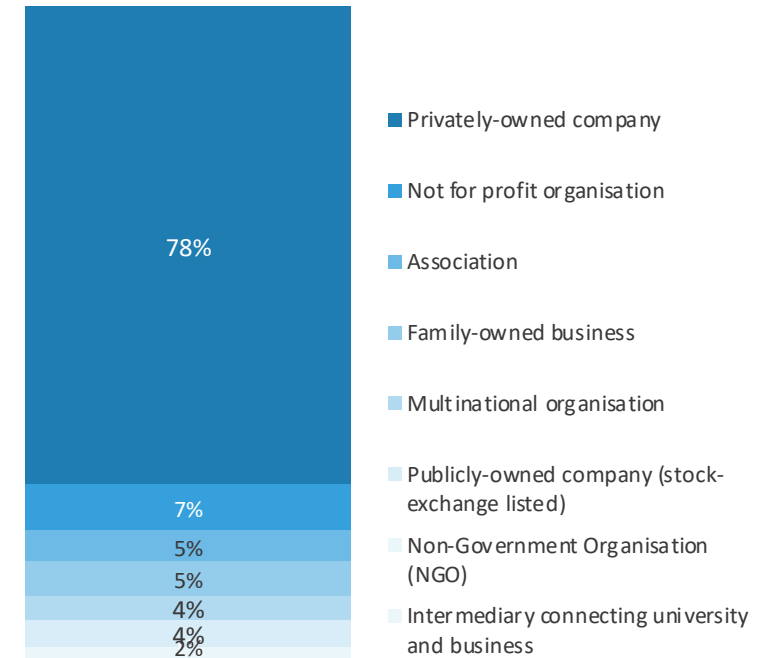
Respondents profile

Position of respondent



Over a third of the Portuguese businesses (39%) are business directors, who constitute the largest group. It is followed by directors responsible for innovation or R&D (23%). The remaining business representatives identified themselves as consultants (6%), and directors of HR, recruitment and training (6%), and directors or managers generally responsible for university collaboration (4%). 23% of Portuguese respondents hold 'other' positions.

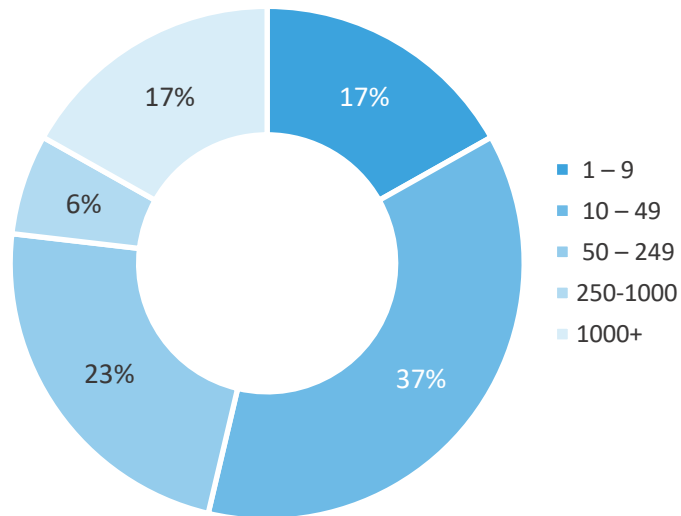
Type of business



A vast majority (78%) of businesses from the Portuguese sample are privately-owned companies. 7% of business representatives work for not for profit organizations. The type of businesses with 5 or less percent of representation include: associations, family-owned businesses, multinational organisations, publicly-owned companies, NGOs and intermediaries connecting universities and businesses.

Respondents profile

Business size



Sample Size	
Portuguese business representatives	n = 95
European business representatives	n = 3.113

A half of the Portuguese business sample is comprised of small firms. 35% of them employ 10 to 49 people, while 17% represent micro-sized companies (1 to 9 employees). 23% of business representatives work for medium-sized organizations (50 to 249 employees), and another 17% of respondents represent very large companies with more than 1000 workers. Large companies (250 to 1000 employees), are represented only by 6%.

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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