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COOPERATION IN EUROPE

State of University-Business Cooperation
PORTUGAL

University Perspective

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

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

Partners

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Executive summary

Summary

This report provides the findings of a study on the university-business cooperation (UBC) in Portugal from the perspective of higher education institutions (HEIs). Examining the perceptions of academics, HEI managers and knowledge transfer professionals (KTP) provides positive signs for the future, as 99% of respondents currently cooperating with businesses plan to maintain or increase their cooperation in the future. In this sense, Portugal proves to be an attractive country for UBC. Yet, there is room for further development and improvement. Specifically, support and resources (e.g. time and funding) are needed to foster academics in their cooperation efforts. Incentive and performance measurement systems in UBC need to be developed and cooperation beyond research activities (e.g. education and valorisation) should be promoted.

About the study

The results presented in this report reflect the perceptions of academics, HEI managers and KTP in Portugal with respect to cooperation between HEIs and business. Data was collected by means of an online survey distributed via email to all registered European HEIs in 33 countries during October-November 2016, leading to a total of 1050 Portuguese HEI responses. The study measured the perceptions of respondents with respect to their cooperation efforts, barriers, drivers, supporting mechanisms an perceived capabilities.

University-Business Cooperation

Portuguese academics responding to this survey are involved in a variety of different cooperation types, with mobility of students, joint R&D and curriculum co-delivery emerging as the most developed ones. However, over 60% of academics do not engage in these activities at all. Management and valorisation related activities are the least developed in Portugal, ranking below the European average.

Academics see themselves as proactive initiators of UBC, with over half of them stating that they usually or always initiate such cooperation. On the contrary, they perceive that external intermediaries and students are those stakeholders that less often initiate UBC.

The cooperation of Portuguese HEIs tends to be with small and micro-sized companies located in their region.

Lack of time and funding hinders UBC

All Portuguese HEI respondents, including cooperating and non-cooperating academics as well as HEI representatives, state that they are considerably hindered by the lack of business, university and government funding along with the limited resources of SMEs.

However, the main barrier identified by academics is the insufficient work time allocated by the university for their UBC activities, which is also considered an obstacle for HEI representatives but in a lesser extent.

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

Relationships matter, interest is crucial

While funding to undertake cooperation emerges as one of the top five facilitators, the relational factors and the interest of business in accessing scientific knowledge play even more important role. The existence of mutual trust, mutual commitment, a shared goal facilitate and thus drive cooperation from the perspective of Portuguese HEI respondents. These results confirm that any effort dedicated to increase cooperation between businesses and universities should focus on relationship development as a basis for UBC.

Cooperate to benefit others

While cooperating academics highlight research motivations, such as gaining new insights and using it in practice, academics not cooperating are motivated by the willingness to contribute to the mission of the university and address societal challenges. However, both coincide in improving teaching and graduate employability as important motivators. HEI managers are motivated to undertake UBC mainly to positively impact society and to improve graduate employability. The possibility to obtain financial resources also emerges as a motivator.

Overall, motivations involving benefits for other stakeholders hold great importance for all HEI respondents.

Lack of incentives

Universities in Portugal are seen to place a strong emphasis on developing support mechanisms for UBC. As is evident in the data, high-level strategic developments such as top-level management commitment for UBC, a documented mission/vision embracing UBC and a strategy supporting UBC are perceived as well developed. The least developed mechanisms are related to the practice of recruiting business professionals in career offices and the reduction of teaching time for UBC cooperating academics. Generally, the "paper strategies" are substantially more developed than the implementation strategies in both Portugal and European HEIs.

Strong focus on student entrepreneurship

Student-centred activities are the most developed operational mechanisms. Entrepreneurship courses offered to students and UBC activities facilitating student interaction with businesses are the most developed activities. Contrary, student networks dedicated to UBC and the promotion of UBC by businesses on their websites are indicated as the most undeveloped UBC mechanisms.

Awareness exists, support is lacking

Academic respondents already cooperating with business have a positive perception of their abilities and roles in undertaking UBC. They believe it is their and their universities' role to collaborate with businesses, in both research and education. Overall those cooperating have a positive attitude towards UBC. However, Portuguese academics consider their business contact base and general knowledge about UBC insufficient and they report that they lack support to undertake cooperation with businesses.

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, 51 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 consider to be the engine towards knowledge-based societies and economies

- UBC is specially needed in the European context, threaten 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.

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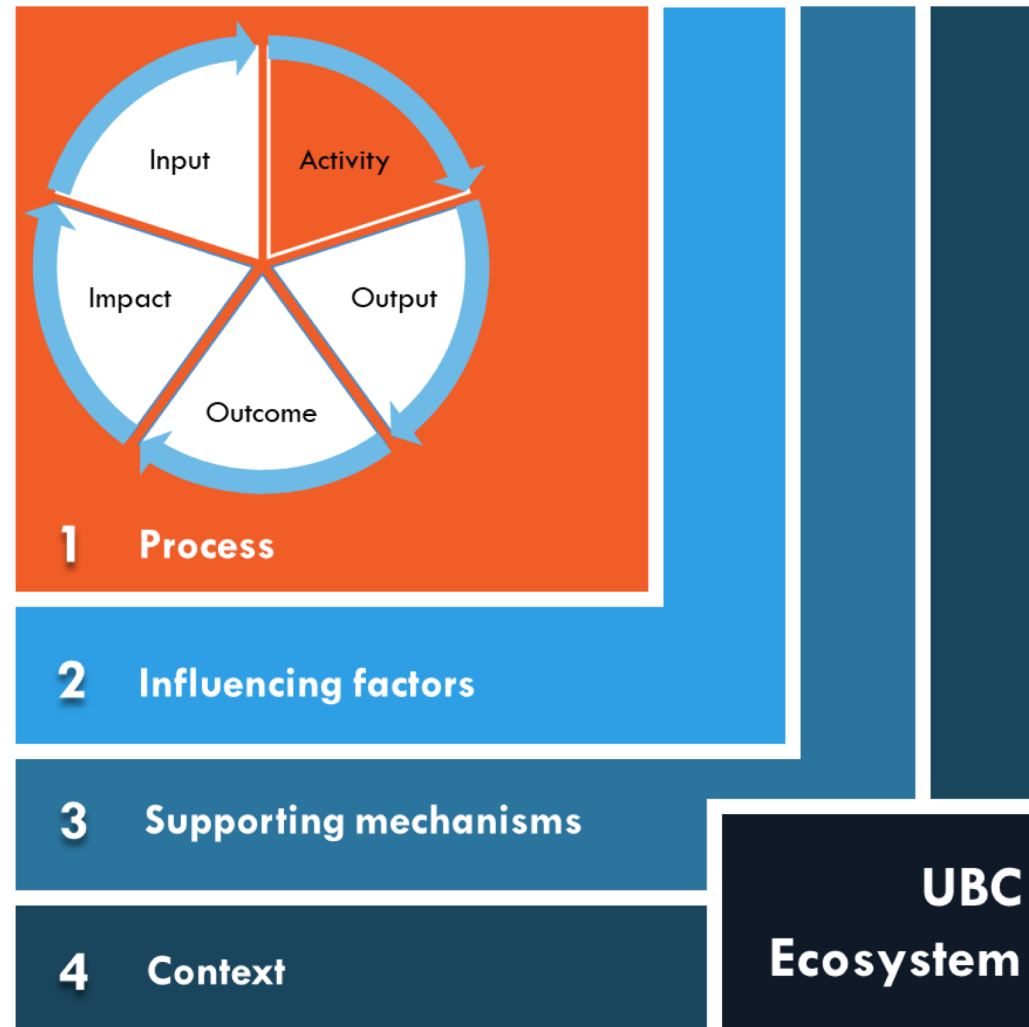
Source: Galán-Muros, V.; Davey, T. (2017) The UBC Ecosystem: Putting together a comprehensive framework for university-business cooperation. Journal of Technology Transfer. https://doi.org/10.1007/s10961-017-9562-3

UBC Activities

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

Area	Activity
Education	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	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	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	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 academics see the development of UBC in their country as significantly lower than the European average. Less than a fifth of the respondents indicated medium to high level of development of all UBC activities. UBC in Portugal, as a regular activity with certain relevance, is still relatively recent when compared to other European countries. This collaboration has nevertheless evolved favourably in recent years, benefiting also from the implementation of policy measures that have encouraged businesses to work together with R&D and innovation support organisations, including Higher Education Institutions.

The most developed activity is mobility of students (2.8). Nevertheless, over 60% of Portuguese academics do not engage in it.

Portuguese academics also engage in collaboration in R&D (2.5) and curriculum co-design (2.5). Nonetheless, only around 10% of the Portuguese academics report a higher level of development for these activities. In particular over the last 10 years, activities such as collaboration in R&D and consulting have increased, taking advantage of growing availability of public funding that enables businesses to hire these services to HEI.

All the UBC management and valorisation activities are reported to be undeveloped or not present at all by over 85% of Portuguese academics.

The extent of development of UBC activities

'Which UBC activities do you collaborate with businesses in?' – as answered by academics

	Portuguese AVE.	European AVE.
Education		
mobility of students — 66,6% / 8,6% / 11,0% / 13,8%	2,8	5.6
dual education programmes — 77,8% / 10,7% / 6,5% / 5,0%	1,9	3.6
curriculum co-design — 74,0% / 12,1% / 9,5% / 4,4%	2,0	3.6
curriculum co-delivery — 68,4% / 10,3% / 12,2% / 9,1%	2,5	4.3
lifelong learning — 76,0% / 12,2% / 8,0% / 3,7%	1,9	3.6
Research		
collaboration in R&D — 68,9% / 9,5% / 11,4% / 10,3%	2,5	5.4
consulting — 76,0% / 9,5% / 8,6% / 5,9%	2,0	4.8
mobility of staff — 82,8% / 9,2% / 5,6% / 2,4%	1,6	2.8
Valorisation		
commercialisation of R&D results — 81,1% / 10,8% / 5,0% / 3,1%	1,7	3.0
academic entrepreneurship — 75,9% / 11,4% / 7,9% / 4,8%	2,0	3.0
student entrepreneurship — 75,4% / 11,4% / 8,1% / 5,0%	2,0	3.1
Management		
governance — 79,9% / 9,8% / 6,6% / 3,7%	1,8	3.1
shared resources — 75,9% / 13,1% / 6,9% / 4,1%	1,9	3.0
industry support — 77,4% / 11,1% / 8,1% / 3,4%	1,8	3.6

European average: x,x

% of respondents — Not at all 0 | Low 1 - 4 | Medium 5 - 7 | High 8 - 10

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Initiation of UBC

How UBC is initiated

'How often various stakeholders initiate UBC activities' – as answered by academics

	Never	Seldom	Sometimes	Usually	Always
Myself or an academic colleague	1%	16%	33%	40%	10%
Current students	7%	32%	42%	16%	4%
Alumni (former students)	4%	15%	52%	26%	3%
Business (excluding alumni)	1%	17%	53%	26%	3%
University management / leadership	7%	24%	40%	24%	5%
Internal intermediaries	5%	25%	43%	26%	2%
External intermediaries	5%	31%	40%	21%	3%
Government	9%	26%	38%	24%	4%

■ Never ■ Seldom ■ Sometimes ■ Usually ■ Always

% of respondents

Over a half of Portuguese academics (50%) state that they themselves or their colleagues always or usually initiate UBC.

Although there are more and more other stakeholders that initiate UBC collaborations, it is still up to academics to begin these relationships in most cases.

University management (29%), alumni (29%) and businesses (29%) are also considered active UBC initiators.

On contrary, Portuguese academics perceive current students and external intermediaries as stakeholders that less often initiate UBC.

Location of cooperating partners

Location of business partners

business located in your region	10%	14%	31%	36%
business located in your country	9%	11%	28%	22%	30%
business located outside your country	48%	19%	14%	10%	9%

% of respondents

■ Not at all ■ To a minimum extent ■ To a moderate extent ■ To a signficant extent ■ To a large extent
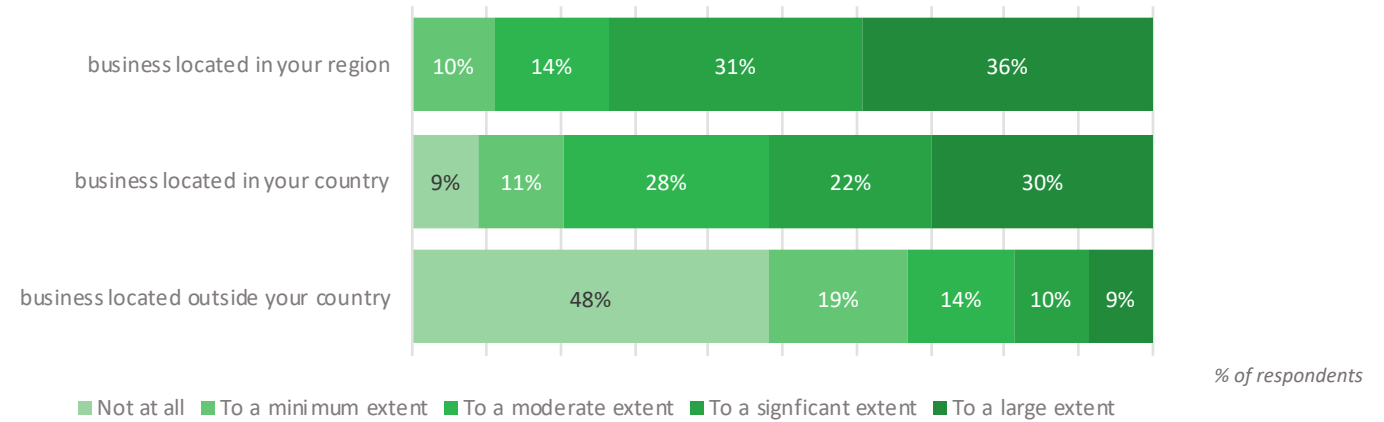
Academics in Portugal mostly focus on collaboration with regional and national businesses. 67% of respondents indicate the collaboration at regional level and 52% at national as significant or high. However, only 19% of academics closely cooperate with international businesses.

Number of business partners

- 1-2 : 45%
- 3-4 : 32%
- 5-10 : 14%
- more than 10 : 9%

% of respondents
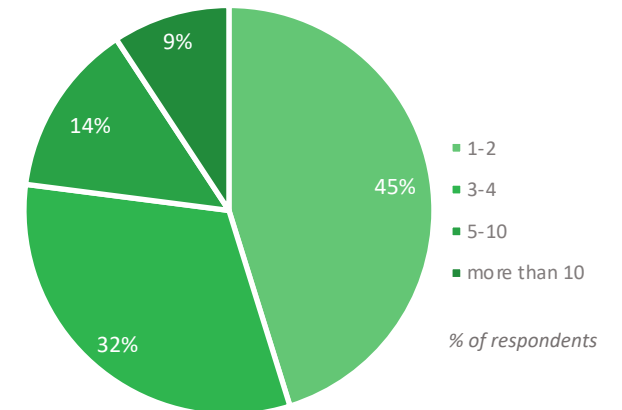
Over a two thirds of Portuguese academics cooperate with 1 to 4 businesses (77%). The remaining 23% have partner relations with 5 or more partners.

Size of cooperating partners

Size of cooperating partner

'With whom do you collaborate?' – as answered by academics

Category	Not at all	To a minimum extent	To a moderate extent	To a significant extent	To a large extent
Entrepreneurs in the process of developing a business	23%	20%	19%	26%	12%
Small and micro-sized business	13%	15%	16%	26%	31%
Medium-sized business	19%	20%	21%	28%	11%
large business	36%	18%	14%	14%	17%

Legend: ■ Not at all ■ To a minimum extent ■ To a moderate extent ■ To a signficant extent ■ To a large extent

The smaller the business, the more likely Portuguese academics are to cooperate with it.

57% of cooperating academics in Portugal engage to a significant or large extent with small and micro-sized businesses.

This cooperation is reduced to 39% with medium-sized businesses, and 31% with large businesses.

Portugal has a larger share of micro enterprises and SMEs in turnover comparing to EU average, and a smaller share of large companies in turnover, which helps to understand these figures. Furthermore, the country has also a lower number of top R&D spending enterprises and a lower average R&D spending of these enterprises compared to EU.

Although Portuguese academics recognize entrepreneurs in the process of developing a business as collaboration partners, they cooperate with them less (38%) than with small or micro-sized companies.

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 sufficiently present.
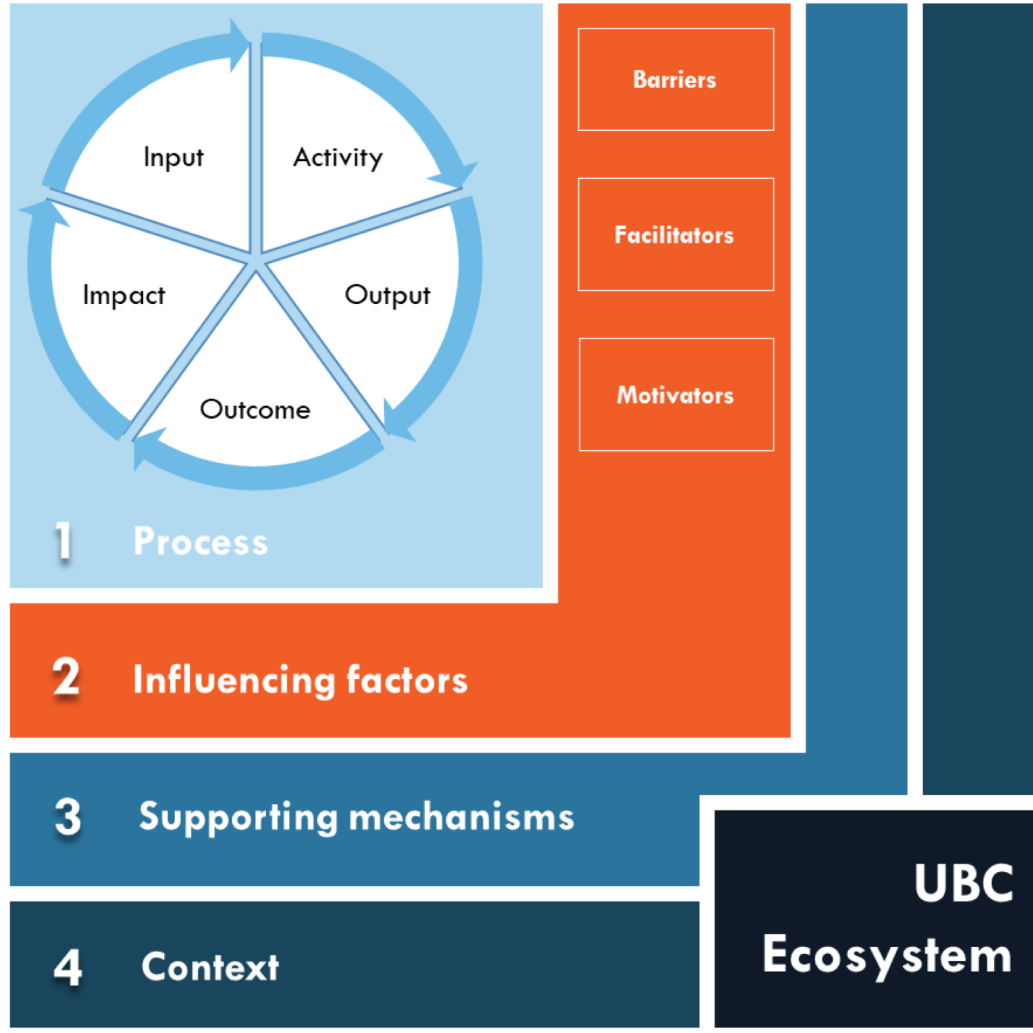
Barriers hindering UBC

Barriers

What is inhibiting your cooperation with business?' – as answered by academics

	Academics collaborating with business	Academics not collaborating with business
1.	Insufficient work time allocated by the university for academics´ UBC activities	Insufficient work time allocated by the university for academics´ UBC activities
2.	Limited resources of SMEs	Lack of government funding for UBC
3.	Lack of business funding for UBC	Limited resources of SMEs
4.	Lack of university funding for UBC	Lack of university funding for UBC
5.	Lack of government funding for UBC	Lack of business funding for UBC
Lowest	Frequent staff turnovers within my university or the business	Frequent staff turnovers within my university or the business

The top five barriers for both collaborating and non-collaborating academics in Portugal are similar. They relate to resources and time issues.

Both groups are hindered by insufficiency of work time allocated by the university for their UBC activities.

There is still a strong perception among Portuguese academics that working with companies is not so much valued as other academic activities such as lectures or research.

Additionally, the financial constraints (e.g. lack of government, university, business funding and limited resources of SMEs) are also major barriers shared by both groups.

The least important factor inhibiting UBC is frequent staff turnover within the university or the business.

Barriers hindering UBC

Portuguese academics perceive most of the UBC barriers similar to their European counterparts, yet to a slightly higher degree.

Thus, Portuguese academics are hindered by insufficiency of work time allocated to UBC activities and lack of funding from various sources more than their European counterparts.

They also see limited absorption capacity of their business partners significantly more hindering. This may have to do with the fact that the percentages of high and medium high-tech industrial companies and knowledge-intensive service companies are lower in the country than the EU average.

On contrary, barriers like differing motivations between the collaborating partners and businesses' need for confidentiality are perceived stronger by European than by Portuguese academics.

Barriers

'What is inhibiting your cooperation with business?' – as answered by academics

Barrier	Cooperating academics in Portugal	Cooperating academics in Europe
Insufficient work time allocated by the university for academics' UBC activities	7,6	6,7
Limited resources of SMEs	7,4	6,9
Lack of business funding for UBC	7,2	6,5
Lack of university funding for UBC	7,2	6,4
Lack of government funding for UBC	7,1	6,2
Bureaucracy related to UBC	6,8	6,7
Differing time horizons between university and business	6,7	6,2
Business lack awareness of university research activities / offerings	6,7	6,0
Limited absorption capacity of business	6,5	5,1
The focus on producing practical results by business	6,1	6,0
Differing motivation / values between university and business	6,0	6,3
Universities lack awareness of opportunities arising from UBC	6,0	5,4
Lack of people with scientific knowledge within business	6,0	5,1
No appropriate initial contact person within either the university or business	5,9	5,1
UBC conflicts with my teaching and research responsibilities	5,8	5,2
Differing mode of communication and language between university and business	5,8	5,2
Difficulty in finding the appropriate collaboration partner	5,8	5,7
Business need for confidentiality	4,9	5,3
Frequent staff turnovers within my university or the business	4,4	4,2

Scale: 1 2 3 4 5 6 7 8 9 10 — None / Low / Medium / High

Barriers hindering UBC

Barriers

'What is inhibiting your HEI cooperation with business?' – as answered by HEI representatives

Top 5 Barriers for HEI representatives
1. Limited resources of SMEs
2. Lack of business funding for UBC
3. Lack of university funding for UBC
4. Insufficient work time allocated by the university for academics´ UBC activities
5. Lack of government funding for UBC
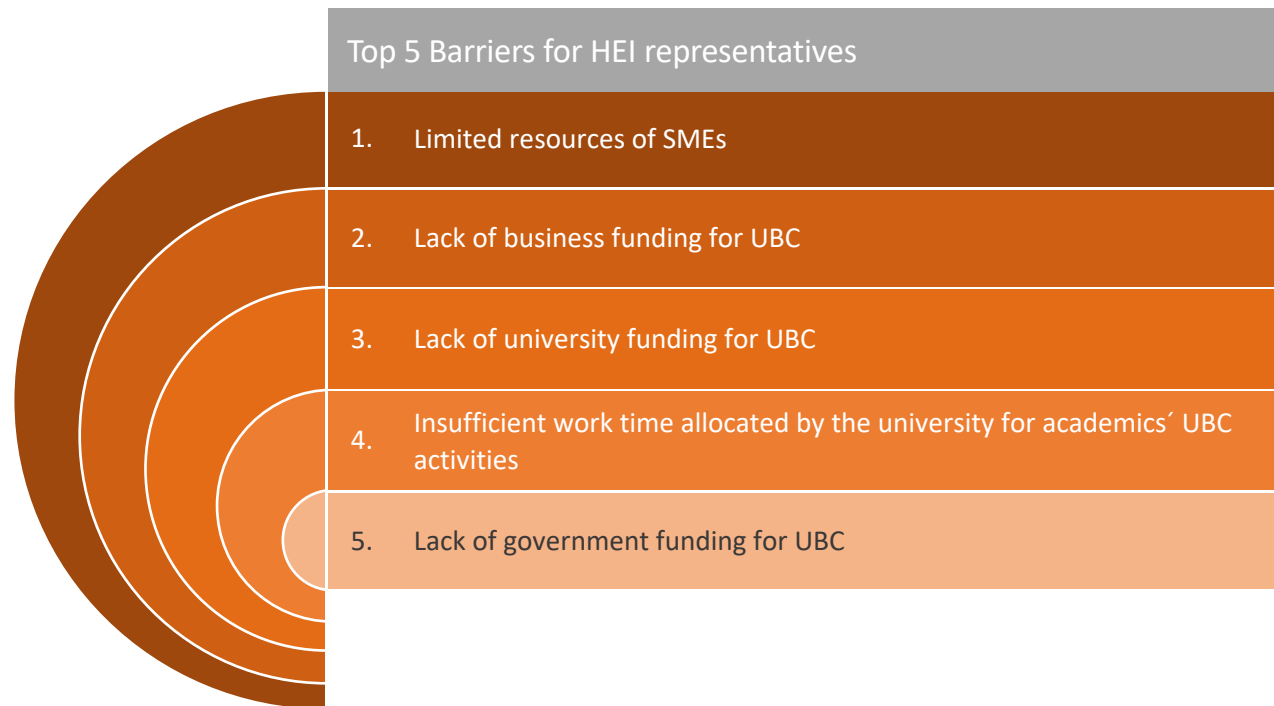
Portuguese HEI representatives indicate that lack of financial resources hinders UBC the most.

Specifically, top barriers to UBC include limited resources of SMEs, lack of business funding and lack of university funding.

UBC activities had not been until some years ago a priority neither for HEI nor for businesses, so it is only in recent years that both sides have begun to allocate considerable resources to this end.

Insufficient work time allocated by university academics serve as an obstacle to UBC as well.

Lack of government funding is reported to be a barrier to UBC too, however less strongly perceived in comparison with other financial barriers. The fact that there has been over the last decade a reinforcement of the funding to stimulate UBC interaction may explain this response.

Barriers hindering UBC

Overall, Portuguese HEI representatives perceive most of the barriers to UBC similar as their European counterparts.

However, Portuguese HEI representatives are hindered by lack of funding from various sources and insufficiency of work time allocated to UBC activities more than their European counterparts.

They also see limited absorption capacity of their business partners and lack of people with scientific knowledge within business more hindering compared to European average.

On contrary, difficulty in finding the appropriate collaborating partner and businesses' need for confidentiality are perceived stronger by European HEI representatives.

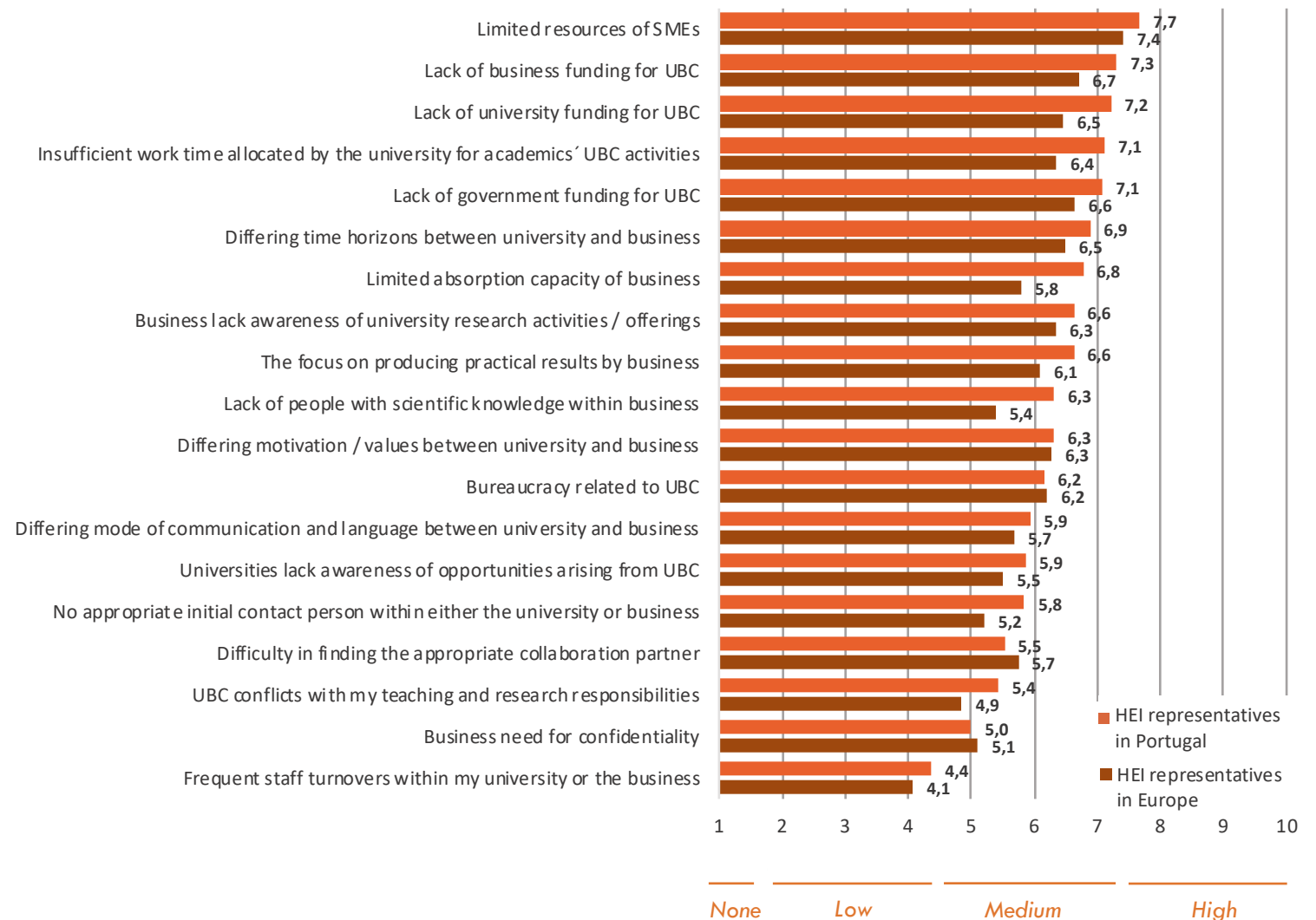Frequent staff turnovers within the collaborating partners is the weakest UBC barrier for both groups.

Barriers

'What is inhibiting your cooperation with business?' – as answered by academics and HEI representatives

Barrier	HEI representatives in Portugal	HEI representatives in Europe
Limited resources of SMEs	7,7	7,4
Lack of business funding for UBC	7,3	6,7
Lack of university funding for UBC	7,2	6,5
Insufficient work time allocated by the university for academics´ UBC activities	7,1	6,4
Lack of government funding for UBC	7,1	6,6
Differing time horizons between university and business	6,9	6,5
Limited absorption capacity of business	6,8	5,8
Business lack awareness of university research activities / offerings	6,6	6,3
The focus on producing practical results by business	6,6	6,1
Lack of people with scientific knowledge within business	6,3	5,4
Differing motivation / values between university and business	6,3	6,3
Bureaucracy related to UBC	6,2	6,2
Differing mode of communication and language between university and business	5,9	5,7
Universities lack awareness of opportunities arising from UBC	5,9	5,5
No appropriate initial contact person within either the university or business	5,8	5,2
Difficulty in finding the appropriate collaboration partner	5,5	5,7
UBC conflicts with my teaching and research responsibilities	5,4	4,9
Business need for confidentiality	5,0	5,1
Frequent staff turnovers within my university or the business	4,4	4,1

None Low Medium High

Drivers stimulating 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

Facilitators

'What is facilitating your cooperation with business?' – as answered by academics and HEI representatives

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.

Academics cooperating		HEI representatives
1.	Interest of business in accessing scientific knowledge	Existence of funding to undertake the cooperation
2.	Existence of mutual commitment	Interest of business in accessing scientific knowledge
3.	Existence of a shared goal	Existence of mutual trust
4.	Existence of mutual trust	Existence of a shared goal
5.	Existence of funding to undertake the cooperation	Existence of mutual commitment

The main facilitators for both Portuguese academics and HEI representatives are similar.

While HEI representatives see existence of funding as the strongest facilitator of UBC, cooperating academics rate it only as the fifth important driver.

Interest in accessing scientific knowledge is the most relevant UBC facilitator for Portuguese academics and the second one for HEI representatives.

Both groups also agree that facilitators related to relationship aspect (e.g. existence of mutual commitment, mutual trust, shared goal) are highly important for UBC.

Drivers stimulating UBC

European and Portuguese perceptions of UBC facilitators align. Yet, Portuguese academics rate all of them higher than their European counterparts.
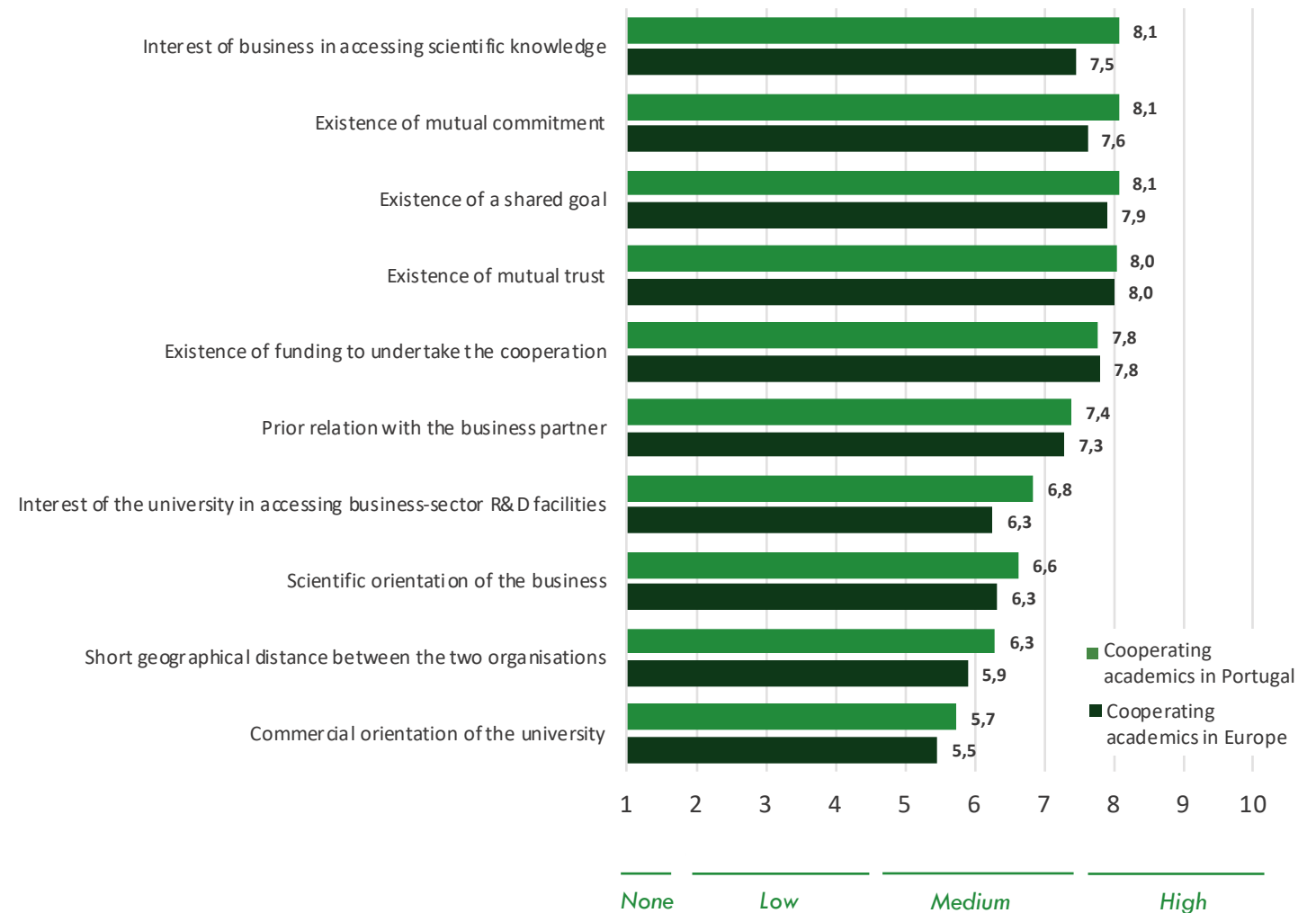
While for Portuguese academics the business' interest in accessing scientific knowledge (8.1) is the biggest UBC facilitator, existence of mutual trust is the top one driver for their European counterparts (8.0).

Nevertheless, Portuguese academics also recognize the importance of relationship facilitators including existence of trust, commitment and a shared goal, which are rated by them even slightly higher compared to European average.

Commercial orientation of the university emerges as the least stimulating UBC driver for both groups (5.7 and 5.5).

Facilitators

'What is facilitating your cooperation with business?' – as answered by academics

Facilitator	Cooperating academics in Portugal	Cooperating academics in Europe
Interest of business in accessing scientific knowledge	8,1	7,5
Existence of mutual commitment	8,1	7,6
Existence of a shared goal	8,1	7,9
Existence of mutual trust	8,0	8,0
Existence of funding to undertake the cooperation	7,8	7,8
Prior relation with the business partner	7,4	7,3
Interest of the university in accessing business-sector R&D facilities	6,8	6,3
Scientific orientation of the business	6,6	6,3
Short geographical distance between the two organisations	6,3	5,9
Commercial orientation of the university	5,7	5,5

None   Low   Medium   High

Drivers stimulating UBC

Facilitators

'What is facilitating your cooperation with business?' – as answered by HEI representatives

Facilitator	HEI representatives in Portugal	HEI representatives in Europe
Existence of funding to undertake the cooperation	8,6	8,0
Interest of business in accessing scientific knowledge	8,5	7,7
Existence of mutual trust	8,4	8,3
Existence of a shared goal	8,3	8,2
Existence of mutual commitment	8,3	8,0
Prior relation with the business partner	8,0	7,7
Interest of the university in accessing business-sector R&D facilities	7,4	6,9
Scientific orientation of the business	7,2	6,7
Short geographical distance between the two organisations	6,8	6,3
Commercial orientation of the university	6,5	6,5

Scale: None — Low — Medium — High (1 to 10)

European and Portuguese HEI representatives have relatively similar perceptions of UBC facilitators. Notably, Portuguese HEI representatives rate all the facilitators higher than their European counterparts.

For Portuguese HEI representatives the most important facilitator relates to the existence of funding to undertake UBC, while for their European counterparts it is existence of the mutual trust.

Nevertheless, Portuguese academics also recognize the importance of relationship facilitators including existence of trust, commitment and a shared goal. This is consistent with the academic perspective.

Compared to European average, Portuguese HEI representatives perceive the businesses' interest in accessing scientific knowledge considerably higher.

Similar to the perception of academics, short geographical distance between two organisations and commercial orientation of the universities emerge as the weakest UBC facilitators for both groups.

Drivers stimulating UBC

Cooperating and non-cooperating Portuguese academics have certain discrepancies in their motivations to engage in UBC.

While cooperating academics highlight the motivators related to research, those not engaged in UBC are more driven by the benefits other stakeholders can get from UBC (university, society, graduates).

Both groups are however equally motivated by the willingness to improve their own teaching.

Motivators

'What motivates you to cooperate with business?'- as answered by academics

Academics who cooperate		Academics who do not cooperate
1.	Gain new insights for research	Contributes to the mission of the university
2.	Uses my research in practice	Addresses societal challenges and issues
3.	Contributes to the mission of the university	Improves graduate employability
4.	Improves my teaching	Improves my teaching
5.	Improves graduate employability	Improves my future research

Drivers stimulating UBC

Motivators

'What motivates you to cooperate with business?'- as answered by academics

Motivator	Cooperating academics in Portugal	Cooperating academics in Europe
Gain new insights for research	8,4	7,8
Uses my research in practice	8,3	7,7
Contributes to the mission of the university	8,1	6,5
Improves my teaching	8,0	7,1
Improves graduate employability	7,9	7,1
Addresses societal challenges and issues	7,9	7,1
Obtain funding / financial resources	6,7	7,0
Improves my reputation within the university	5,0	4,8
Increases my chances of promotion	4,3	3,9

Scale: 1 2 3 4 5 6 7 8 9 10 — *None* / *Low* / *Medium* / *High*

The perception of Portuguese academics of UBC motivators is relatively similar to the perception of their European counterparts. Yet, Portuguese academics rate most motivators higher.

Both groups view the opportunity to gain new insights for their research and then use their research in practice as the strongest motivators.

However, motivation to contribute to the mission of the university drives Portuguese academics noticeably more than their European counterparts (8.1 against 6.5).

Contrary, they are less motivated to obtain financial resources than the European academics.

Notably, promotion and reputation related motivators are the weakest drivers stimulating UBC for both groups, although perceived stronger by Portuguese academics.
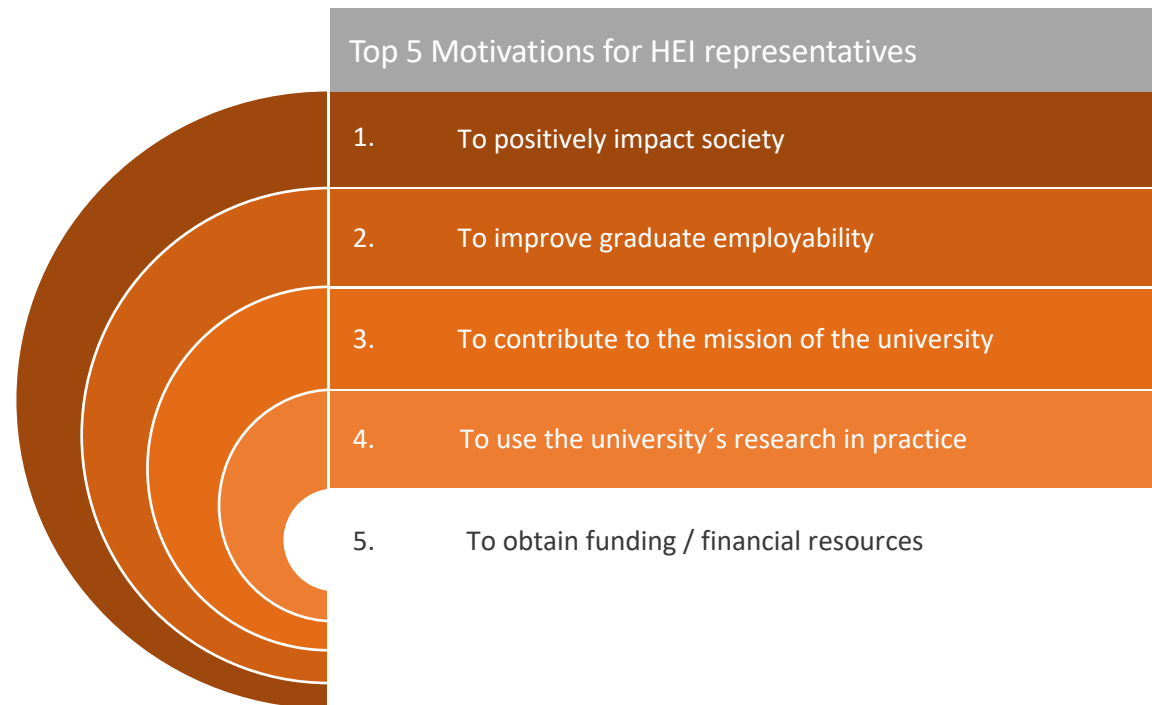
Drivers stimulating UBC

Portuguese HEI representatives are more motivated to bring benefits to various stakeholders, such as society, graduates and university.

The willingness to apply university's research and obtain funding also motivates Portuguese HEI representatives to undertake UBC.

Motivators

'What motivates your HEI to cooperate with business?'- As answered by HEI representatives

Top 5 Motivations for HEI representatives
1.   To positively impact society
2.   To improve graduate employability
3.   To contribute to the mission of the university
4.   To use the university´s research in practice
5.   To obtain funding / financial resources

Drivers stimulating UBC

Motivators

'What motivates your HEI to cooperate with business?'- as answered by HEI representatives
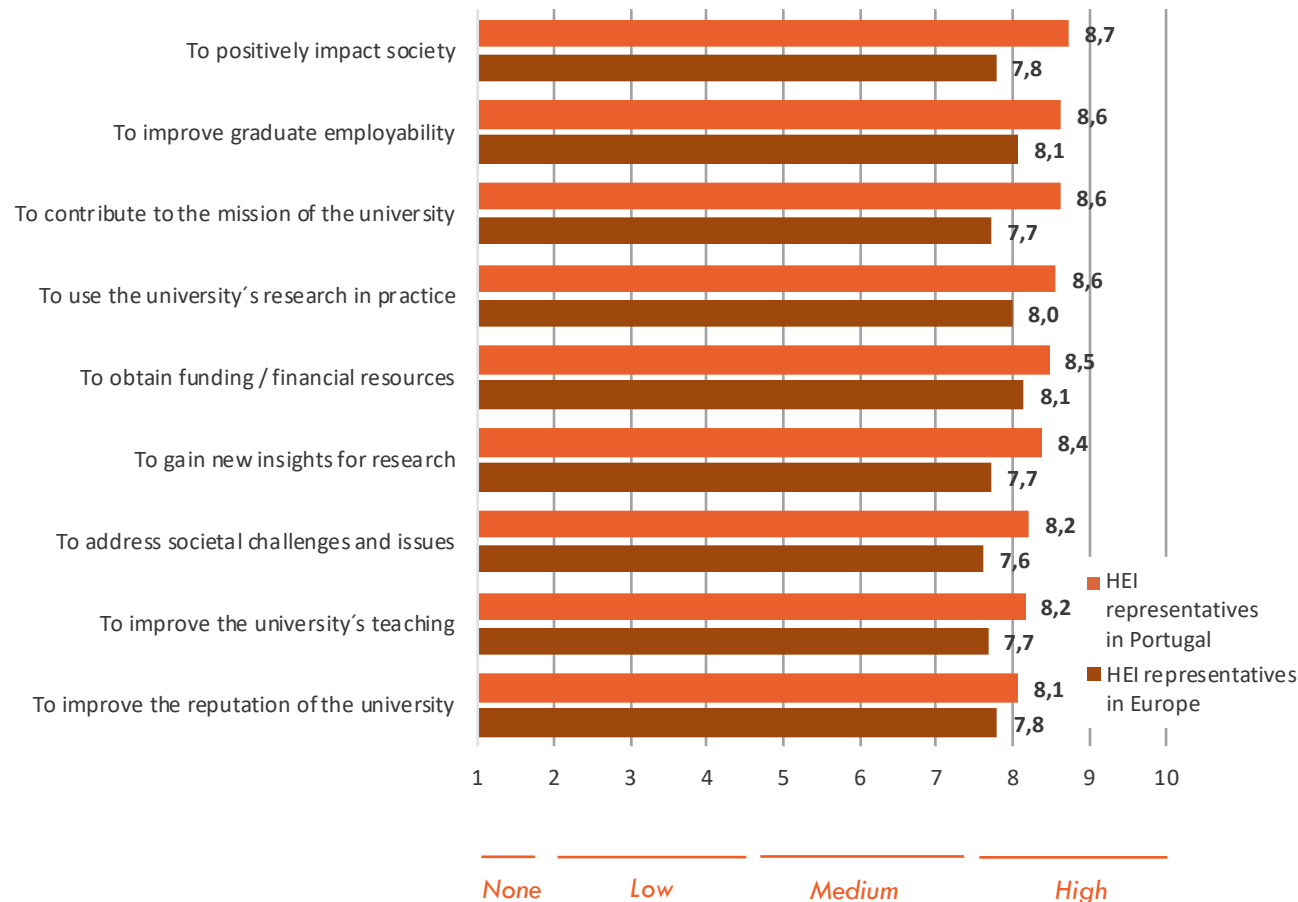
Portuguese HEI representatives perceive all factors that might motivate their engagement in UBC higher than their European counterparts.

While Portuguese HEI representatives are primarily motivated to engage in UBC to impact the society (8.7), their European counterparts see obtaining funding as their top motivation (8.5).

While European HEI representatives perceive addressing societal challenges as the lowest motivator, for Portuguese HEI representatives it is the willingness to improve reputation of their universities.

More crucially, for both European and Portuguese HEI representatives all motivators were are ranked of nearly equal importance (from 7.6 to 8.7), which ultimately means that all these drivers have a potential of stimulating UBC for universities.

Benefits of UBC

Portuguese academics and HEI managers have similar perceptions about the stakeholders that benefit from UBC.

Businesses and universities are perceived by both groups as the stakeholder groups who benefit the most from UBC.

Both groups see fewer benefits for academics and government than for businesses, universities, students and society.

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

'Who receives the benefits of UBC?'- as answered by academics and HEI representatives

Academics		HEI representatives
1.	Businesses	Businesses
2.	Universities	Universities
3.	Students	Society
4.	Society	Students
5.	Academics	Government / public authorities
6.	Government / public authorities	Academics

Future intentions

Future UBC intentions – PORTUGAL

As answered by Portuguese academics

- increase
- maintain
- decrease

0,7%
17,8%
81,5%
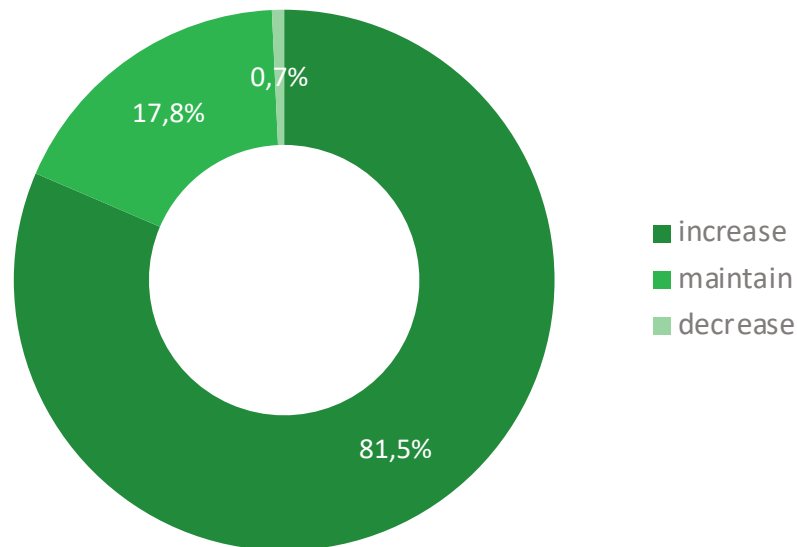
Portuguese academics show very strong commitment to UBC. 99,3% of academics expect to increase (81,5%) or maintain (17,8%) their UBC activities. In this sense, Portugal proves to be an attractive country for UBC.

Future UBC intentions – EUROPE

As answered by European academics

- increase
- maintain
- decrease

1,8%
40,8%
57,4%
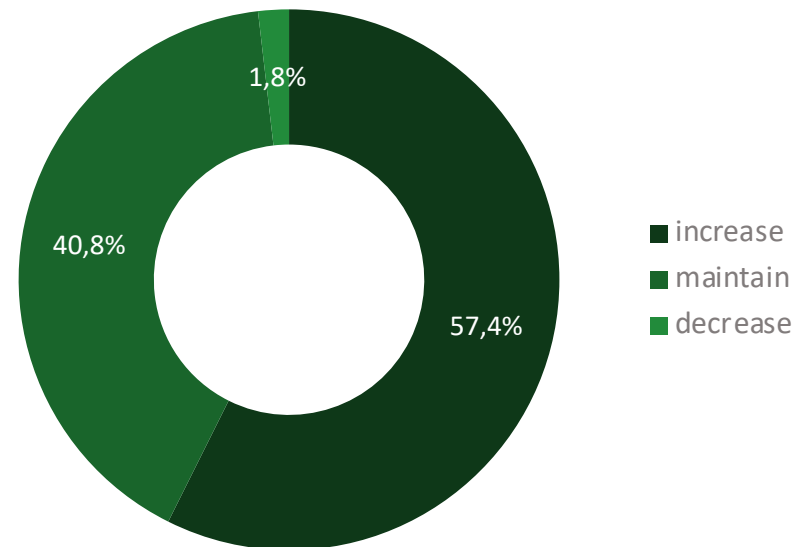
Academics in Europe show less strong commitment to increasing UBC activities than their Portuguese counterparts. 57,4% of European cooperating academics expect to increase their cooperation and 40,8% plan to maintain their collaborative activities with businesses.

Willingness to recommend UBC

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

Portuguese academics are more satisfied with their UBC in research (NPS=35) than their European counterparts (NPS=17). While 53% of them will further promote UBC in research positively, 18% will not recommend it.

Portuguese academics are less satisfied with their cooperation in education (NPS=7), which is, however, more positive in comparison with their European counterparts (NPS=-13.8).

Willingness to recommend *to an academic colleague cooperation with business in R&D and education*

As answered by academics

	Detractors	Passives	Promoters
Academics cooperating in E&T	30%	33%	37%
Academics cooperating in R&D	18%	29%	53%

Net promotor score
7
35

Satisfaction in cooperation with businesses (net promoter score)

Academics cooperating in research

35

18%
29%
53%

■ Detractors ■ Passives ■ Promoters

Academics cooperating in education

7

30%
33%
37%
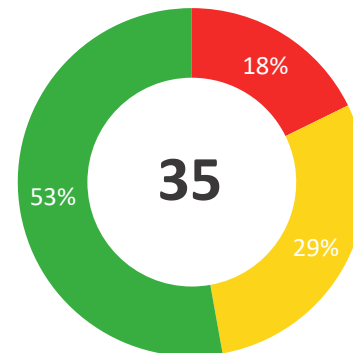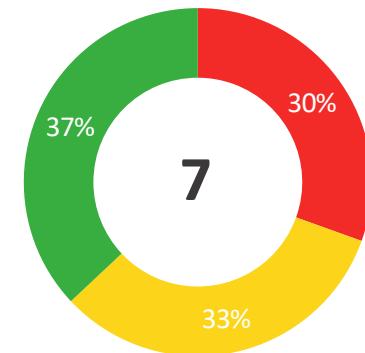
■ Detractors ■ Passives ■ Promoters

European academics' NPS result: 17

European academics' NPS result: -13.8

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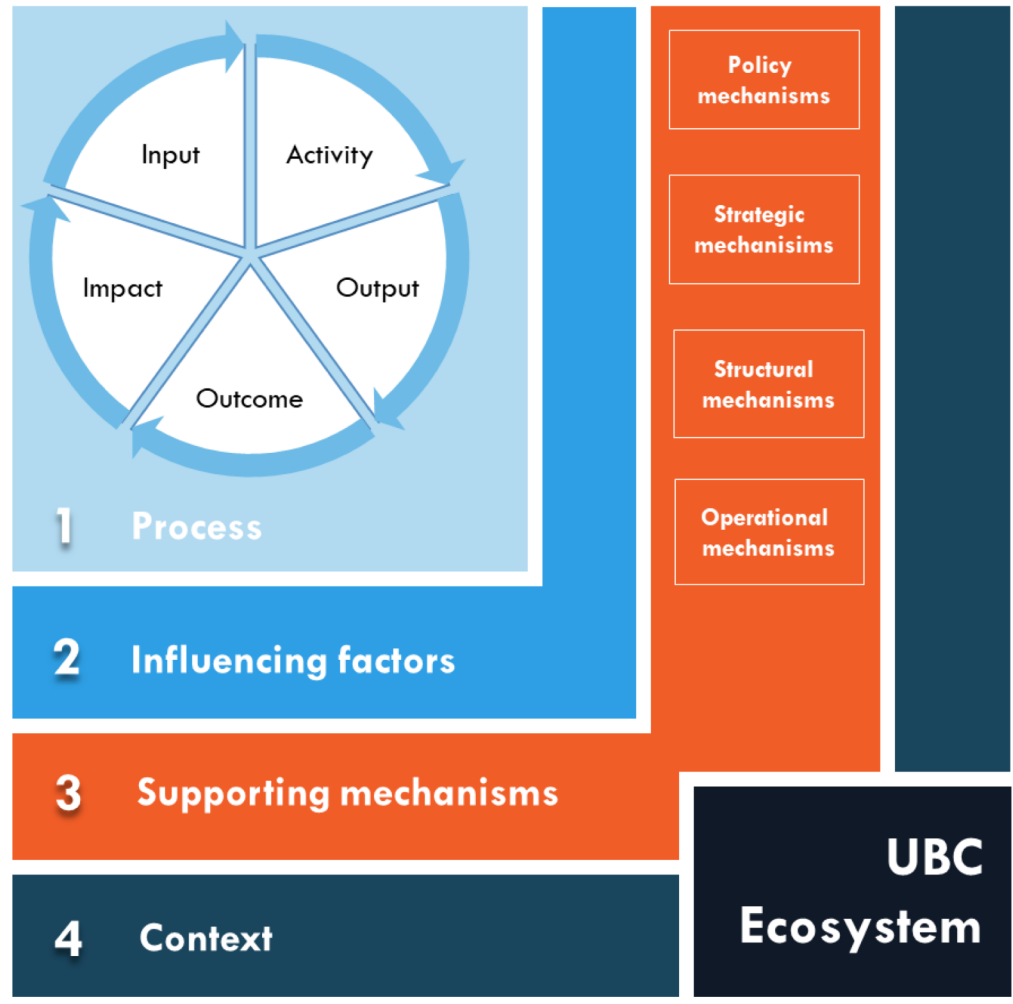
Supporting mechanisms are interventions designed to support the development of cooperation between HEIs and business.

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

Portuguese HEI representatives perceive policy mechanisms to be developed to a medium-low level. This perception is consistent with the European average.

Policies positively supporting the creation of new companies are the most developed supporting mechanism in Portugal (6.5) which development rate exceeds European average.

It is followed by regional innovation policies (6.2) and policies supporting UBC in research (6.0).

The above mentioned three topics have been particularly supported by public policy measures to stimulate RTD and innovation in businesses.

The least developed mechanisms, as indicated by both Portuguese and European HEI managers, are public seed capital for UBC (5.1) and policies supporting labour mobility between university and business (4.4).

Policy mechanisms

'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives

Chart legend:
- HEI representatives in Portugal (orange bars)
- HEI representatives in Europe (triangle markers, x.x)

Mechanism	Portugal	Europe
Policies positively supporting the creation of new companies (incl. academic entrepreneurship and start-up activities)	6,5	5.7
Regional innovation policies	6,2	6.2
Policies positively supporting research collaboration between university and business	6,0	5.8
Infrastructure funding available to support UBC development	5,8	5.3
IP rights legislation for academic research discovery	5,6	5.8
R&D tax benefits for business	5,3	5.3
Public seed capital supporting UBC initiatives	5,1	4.6
Laws / rules / hiring policies positively supporting labour mobility between university and business	4,4	4.6

Scale: None — Low — Medium — High

Supporting mechanisms for UBC

Strategic mechanisms

'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives

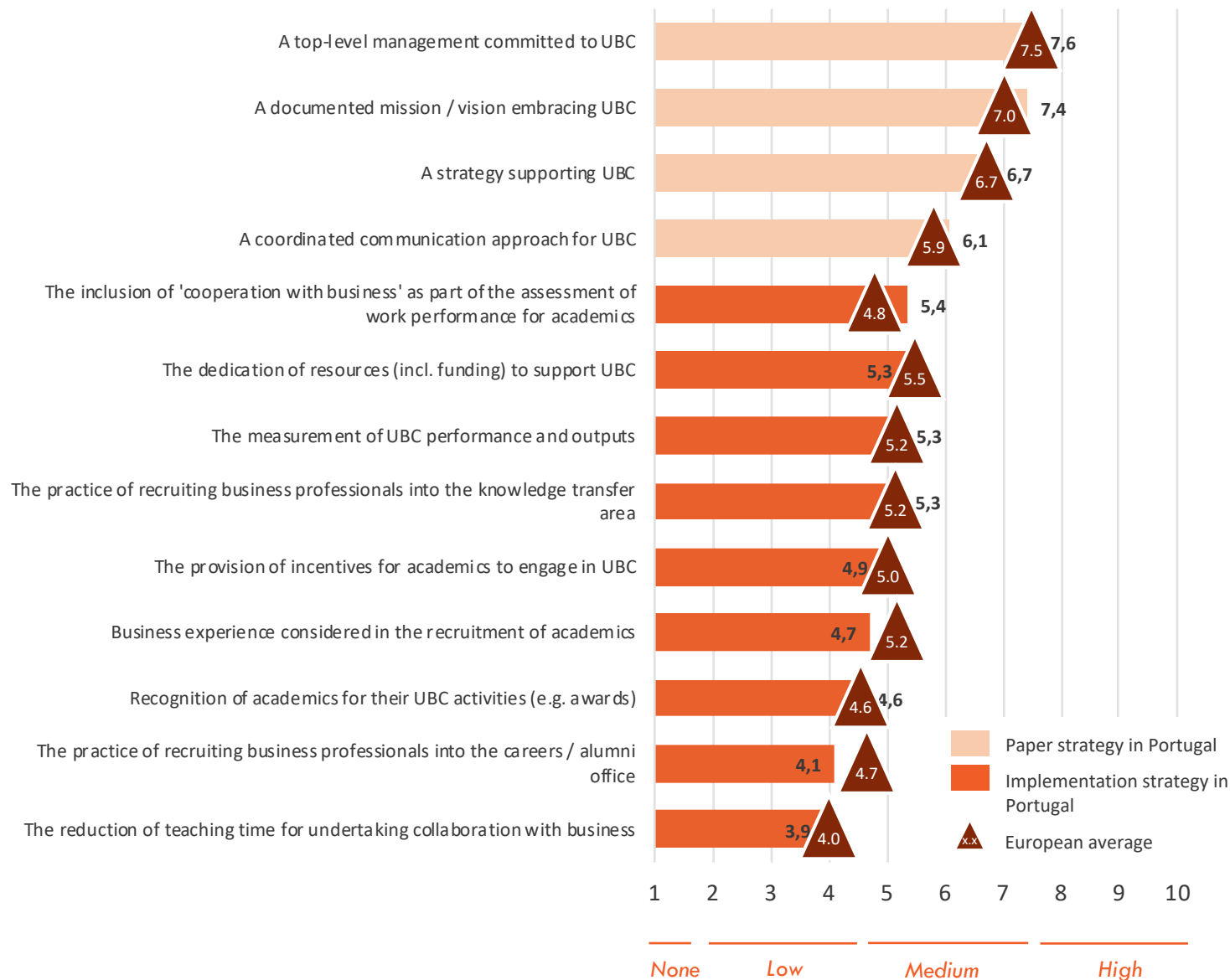| Mechanism	Implementation strategy in Portugal	European average	Paper strategy in Portugal
A top-level management committed to UBC		7.5	7,6
A documented mission / vision embracing UBC		7.0	7,4
A strategy supporting UBC		6.7	6,7
A coordinated communication approach for UBC		5.9	6,1
The inclusion of 'cooperation with business' as part of the assessment of work performance for academics	4.8		5,4
The dedication of resources (incl. funding) to support UBC	5,3	5.5	
The measurement of UBC performance and outputs	5.2		5,3
The practice of recruiting business professionals into the knowledge transfer area	5.2		5,3
The provision of incentives for academics to engage in UBC	4,9	5.0	
Business experience considered in the recruitment of academics	4,7	5.2	
Recognition of academics for their UBC activities (e.g. awards)	4.6		4,6
The practice of recruiting business professionals into the careers / alumni office	4,1	4.7	
The reduction of teaching time for undertaking collaboration with business	3,9	4.0	

None — Low — Medium — High

The development of the strategic mechanisms in Portuguese and European HEIs is similar.

The top-level management of Portuguese HEIs is highly committed to UBC (7.6).

The relationship with other stakeholders, and in particular with business community, has been increasingly valued by Portuguese HEI that see this cooperation as a way of earning higher reputation, impacting on economy and society, and obtaining more resources for their activities.

Generally, the paper strategies are substantially more developed than the implementation strategies in both Portugal and European HEIs.

The least developed mechanisms are related to the practice of recruiting business professionals in career offices (4.1) and the reduction of teaching time for UBC cooperating academics (3.9).

Supporting mechanisms for UBC

All structural mechanisms are more developed in Portuguese HEIs than in universities in Europe.
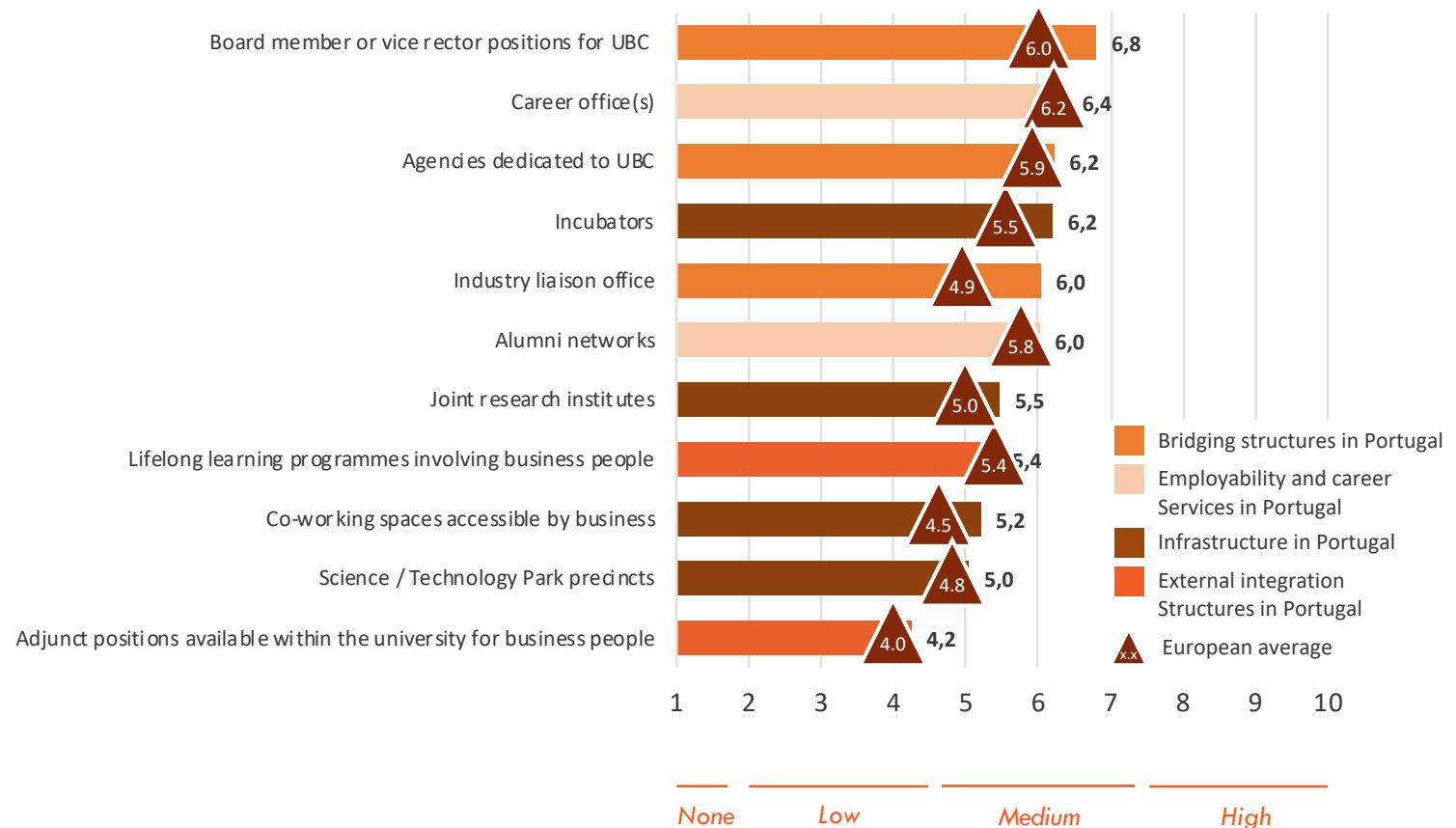
Both European and Portuguese HEI representatives indicated same top three structural mechanisms, related to UBC bridging structures and employability services.

Less developed UBC supporting structural mechanisms are those related to infrastructure including co-working spaces accessible by business (5.2) and technology parks (5.0).

External integration structures, such as adjunct positions available within university for business people (4.2) are the least common structural mechanisms in Portuguese HEIs.

Structural mechanisms

'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives

Chart: "Structural mechanisms" showing Portugal values and European average (triangles)

Mechanism	Portugal	European average
Board member or vice rector positions for UBC	6,8	6.0
Career office(s)	6,4	6.2
Agencies dedicated to UBC	6,2	5.9
Incubators	6,2	5.5
Industry liaison office	6,0	4.9
Alumni networks	6,0	5.8
Joint research institutes	5,5	5.0
Lifelong learning programmes involving business people	5,4	5.4
Co-working spaces accessible by business	5,2	4.5
Science / Technology Park precincts	5,0	4.8
Adjunct positions available within the university for business people	4,2	4.0

Legend:
- Bridging structures in Portugal
- Employability and career Services in Portugal
- Infrastructure in Portugal
- External integration Structures in Portugal
- x.x European average

Scale: 1–10 (None, Low, Medium, High)
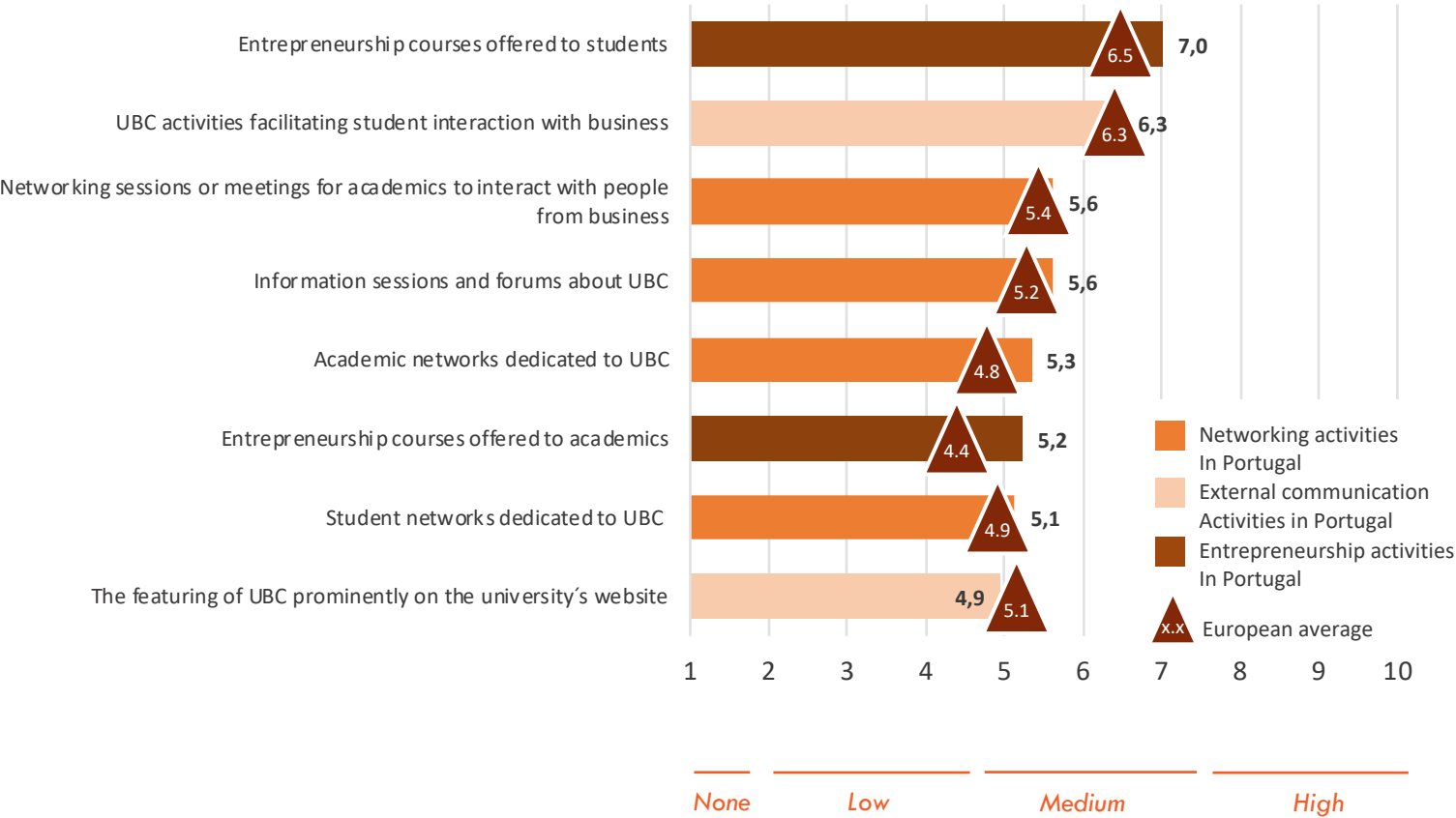
Supporting mechanisms for UBC

Operational mechanisms

'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives

Mechanism	In Portugal	European average
Entrepreneurship courses offered to students	**7,0**	6.5
UBC activities facilitating student interaction with business	**6,3**	6.3
Networking sessions or meetings for academics to interact with people from business	**5,6**	5.4
Information sessions and forums about UBC	**5,6**	5.2
Academic networks dedicated to UBC	**5,3**	4.8
Entrepreneurship courses offered to academics	**5,2**	4.4
Student networks dedicated to UBC	**5,1**	4.9
The featuring of UBC prominently on the university's website	**4,9**	5.1

Legend:
- Networking activities In Portugal
- External communication Activities in Portugal
- Entrepreneurship activities In Portugal
- x.x European average

Scale: 1 2 3 4 5 6 7 8 9 10

None — Low — Medium — High

Overall, operational mechanisms UBC supporting are relatively more developed in Portuguese HEIs than in universities in Europe.

Student-oriented mechanisms are the most developed for both European and Portuguese HEI representatives, with entrepreneurship courses offered to students and UBC activities facilitating student interaction with businesses ranked the highest.

The student networks dedicated to UBC and the promotion of UBC by businesses on their websites are indicated as the most undeveloped UBC operational mechanisms.

Context

The degree to which UBC takes place is influenced by a set of element present in the context of the organisation that cannot be changed in short or medium 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.).
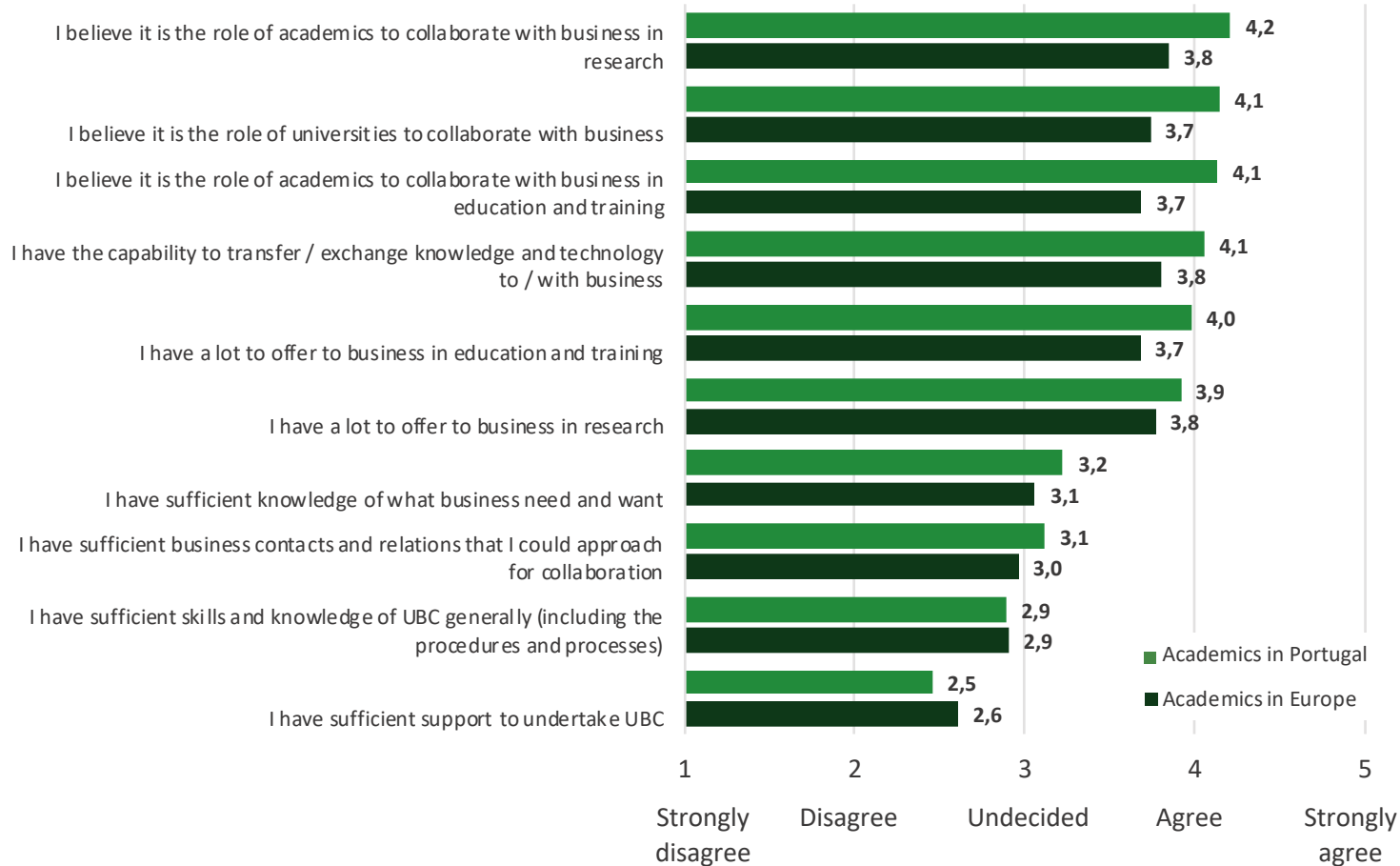
This section outlines how some contextual factors influence UBC in the country.
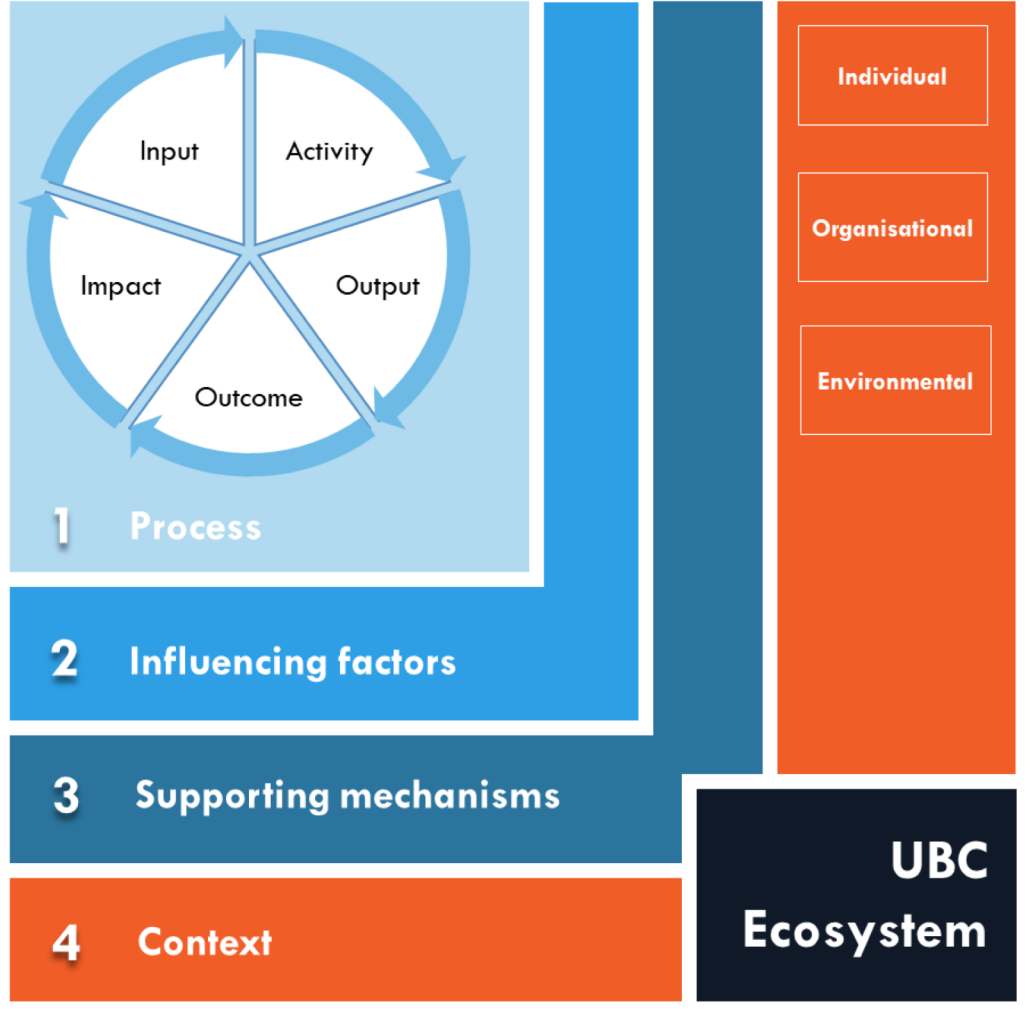
UBC capabilities

Capabilities for UBC

'To what extent do you agree or disagree with the following statements?' - as answered by academics

Statement	Academics in Portugal	Academics in Europe
I believe it is the role of academics to collaborate with business in research	4,2	3,8
I believe it is the role of universities to collaborate with business	4,1	3,7
I believe it is the role of academics to collaborate with business in education and training	4,1	3,7
I have the capability to transfer / exchange knowledge and technology to / with business	4,1	3,8
I have a lot to offer to business in education and training	4,0	3,7
I have a lot to offer to business in research	3,9	3,8
I have sufficient knowledge of what business need and want	3,2	3,1
I have sufficient business contacts and relations that I could approach for collaboration	3,1	3,0
I have sufficient skills and knowledge of UBC generally (including the procedures and processes)	2,9	2,9
I have sufficient support to undertake UBC	2,5	2,6

Scale: 1 Strongly disagree — 2 Disagree — 3 Undecided — 4 Agree — 5 Strongly agree

Portuguese academics identify moderate capabilities for UBC and beliefs about the role of UBC. For the majority of them, Portuguese academics have a more positive attitude than their European counterparts.

Portuguese academics believe it is their and universities' role (4.1) to collaborate with businesses in both research (4.2) and education (4.1).

They identified their strengths in the ability to exchange knowledge (4.1), providing education (4.1) and doing research for companies (3.9).

However, Portuguese academics consider their business contact base and general knowledge about UBC insufficient (3.1 and 2.9 respectively).

Generally, they report that they lack support to undertake UBC (2.4).

34

Context

European and Portuguese academics perceive the contextual factors, affecting UBC similarly, with only few exceptions.

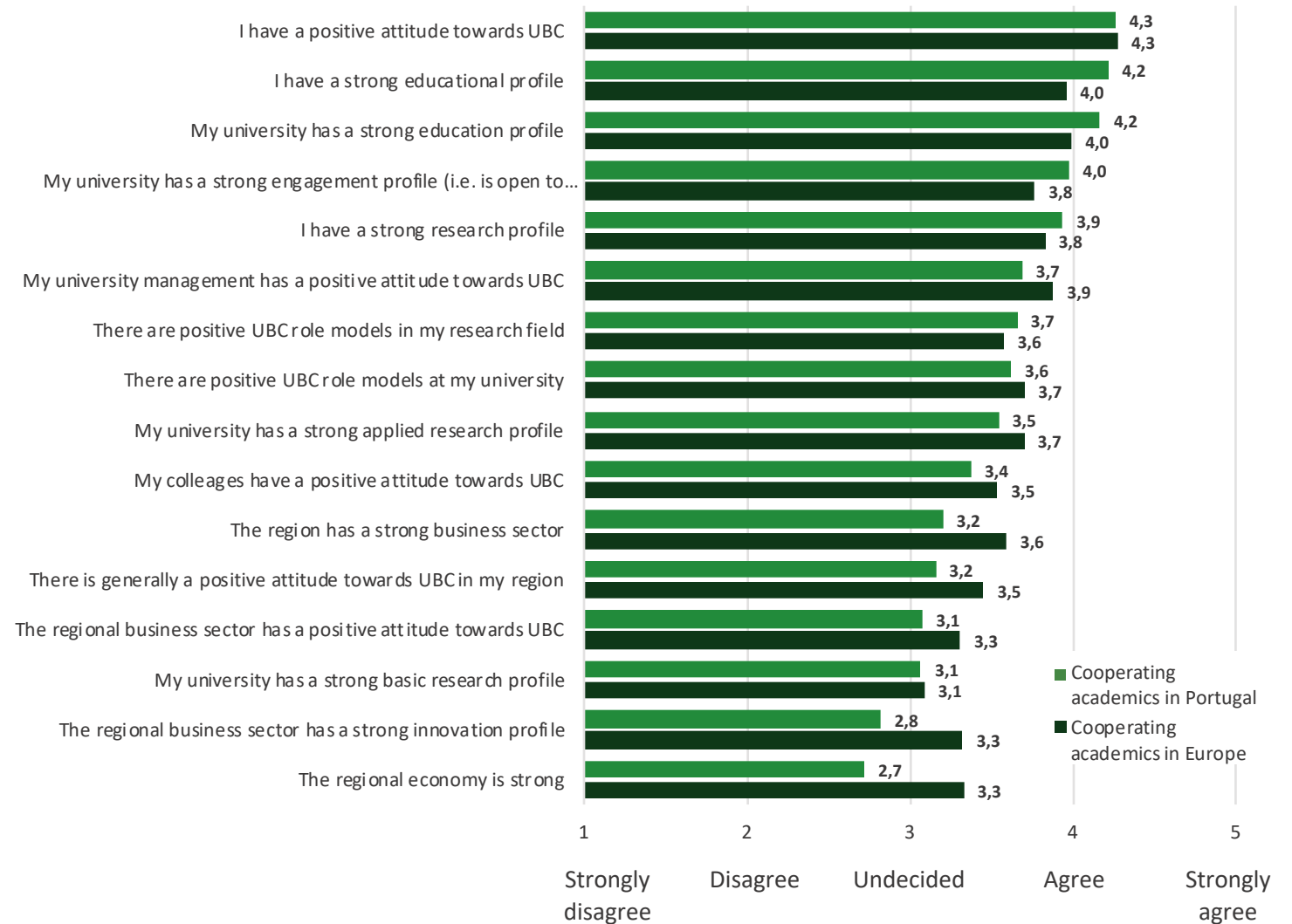Overall, both groups have a positive attitude towards UBC (4.3).

Portuguese academics perceive themselves and their universities to have strong educational profile (4.2 each).

However, Portuguese academics are less certain than their European counterparts about the university management having positive attitude towards UBC.

Portuguese academics perceive the strength of the regional economy as well as regional business sector, its innovation profile noticeably lower compared to European average.
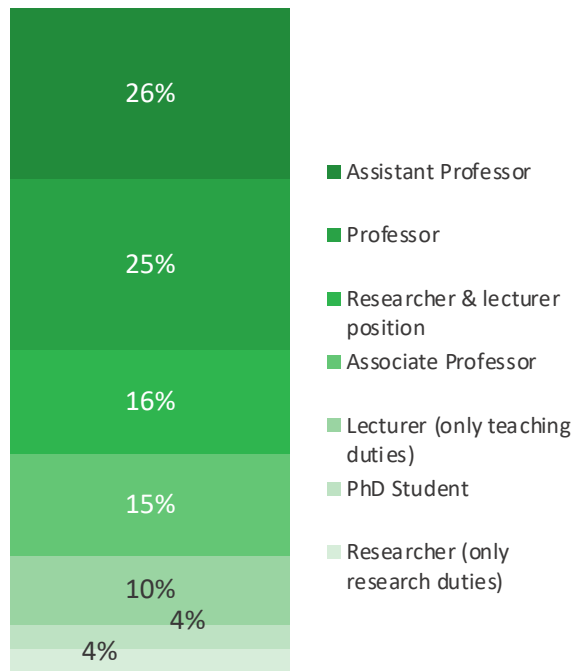
Contextual factors affecting UBC

*'To what extent do you agree or disagree with the following statements?' - as answered by academics*

Statement	Cooperating academics in Portugal	Cooperating academics in Europe
I have a positive attitude towards UBC	4,3	4,3
I have a strong educational profile	4,2	4,0
My university has a strong education profile	4,2	4,0
My university has a strong engagement profile (i.e. is open to…)	4,0	3,8
I have a strong research profile	3,9	3,8
My university management has a positive attitude towards UBC	3,7	3,9
There are positive UBC role models in my research field	3,7	3,6
There are positive UBC role models at my university	3,6	3,7
My university has a strong applied research profile	3,5	3,7
My colleagues have a positive attitude towards UBC	3,4	3,5
The region has a strong business sector	3,2	3,6
There is generally a positive attitude towards UBC in my region	3,2	3,5
The regional business sector has a positive attitude towards UBC	3,1	3,3
My university has a strong basic research profile	3,1	3,1
The regional business sector has a strong innovation profile	2,8	3,3
The regional economy is strong	2,7	3,3

1 Strongly disagree — 2 Disagree — 3 Undecided — 4 Agree — 5 Strongly agree

35

Respondent profile – academics

Position of respondent

26% Assistant Professor
25% Professor
16% Researcher & lecturer position
15% Associate Professor
10% Lecturer (only teaching duties)
4% PhD Student
4% Researcher (only research duties)

Age of respondents

8% 1%
34%
36%
18%
2%

70 +
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29

Gender of respondents

48% 52%

Male
Female

Assistant professors represent the largest group of Portuguese respondents (26%), closely followed by professors (25%) and those occupying researcher and lecturer position (16%). The remaining respondents identified themselves as associate professors (15%), lecturers (10%), PhD students (4%) and researchers (4%).
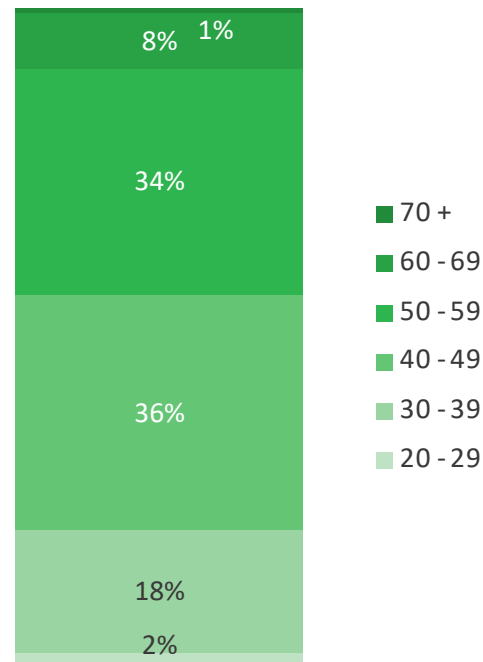
The majority of Portuguese academics in the sample are in their 40s and 50s (36% and 34% respectively). 18% in the sample are aged 30-39. 8% of academics are aged 60-69. Academics younger than 30 are 2%, and older than 70 are barely present (1%).
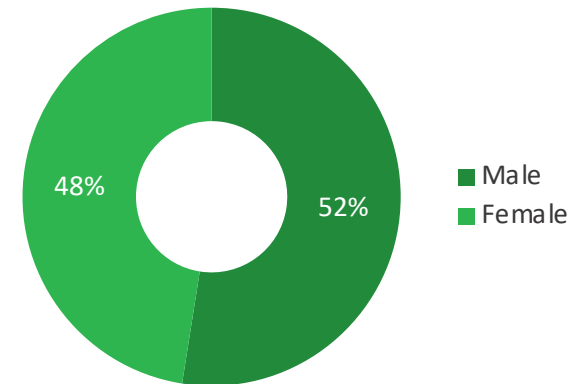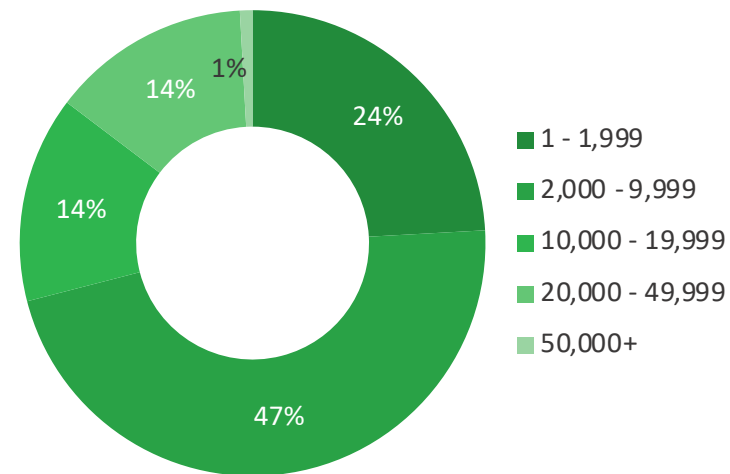
There is almost an even gender distribution in the Portuguese academic sample with 52% male and 48% female respondents.

Respondent profile – academics

Number of students of the HEI

Pie chart legend:
- 1 - 1,999 — 24%
- 2,000 - 9,999 — 47%
- 10,000 - 19,999 — 14%
- 20,000 - 49,999 — 14%
- 50,000+ — 1%

Sample Size	
Portuguese Academics	n=835
European Academics	n=10.836
Portuguese HEI representatives	n=215
European HEI representatives	n=3.482

The majority of Portuguese academics (71%) in the sample work for micro-sized (1 to 1,999 students) and small size HEIs (2,000 to 9,999 students). 14% of all respondents work for medium-sized HEIs (10,000 to 19,999 students). Medium-large HEIs (up to 49,999 students) are represented by 14% of respondents. Only 1% of the academics work at very large HEIs with over 50,000 students.

Respondent profile – academics

Years working in university

41%	
37%	
11%	
6%	
3%	2%

Legend:
- 20 +
- 10 to <20
- 5 to <10
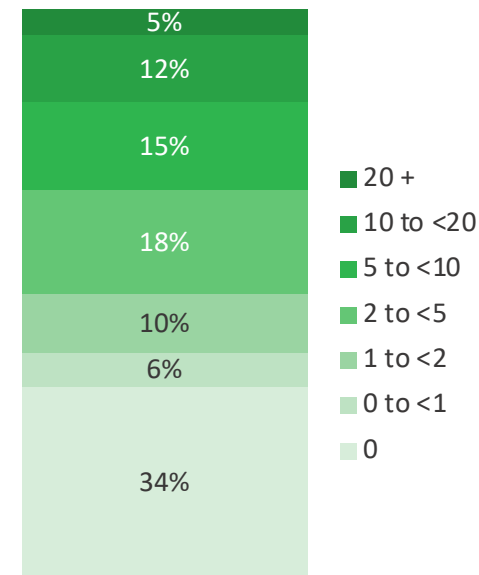- 2 to <5
- 1 to <2
- 0 to <1
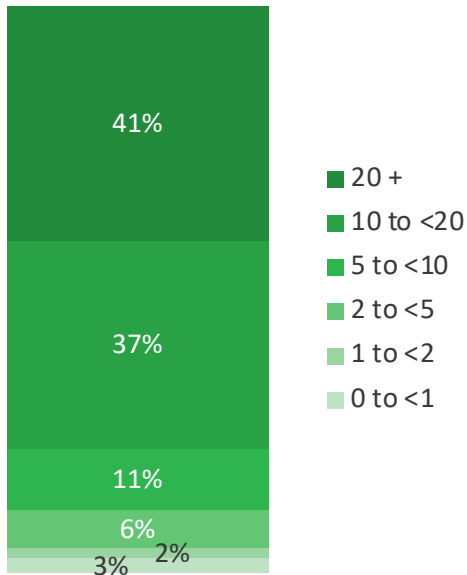
41% of academics have worked in academia for over 20 years, while another further 37% have done so for over 10 years. 11% have 5 to 10 years of experience and 6% have worked in universities for 2 to 5 years. 5% of the respondents have less than 2 years of academic experience.

Years working in business

10%
14%
12%
15%
8%
7%
33%

Legend:
- 20 +
- 10 to <20
- 5 to <10
- 2 to <5
- 1 to <2
- 0 to <1
- 0
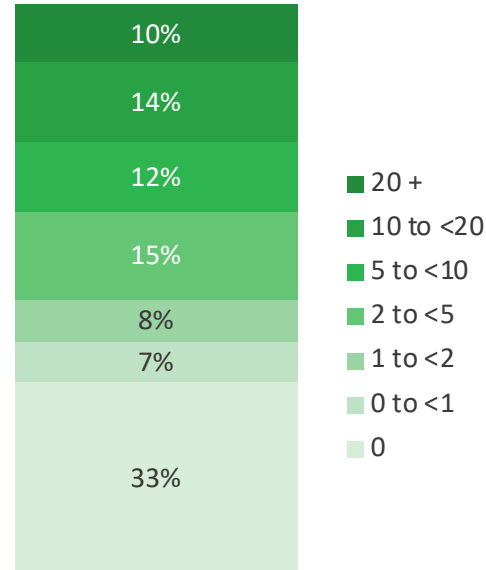
40% of academics have little or no industry experience. 15% have less than 2 years of experience. 36% of respondents worked for more than 5 years in industry before. 10% of those have worked in business for over 20 years.
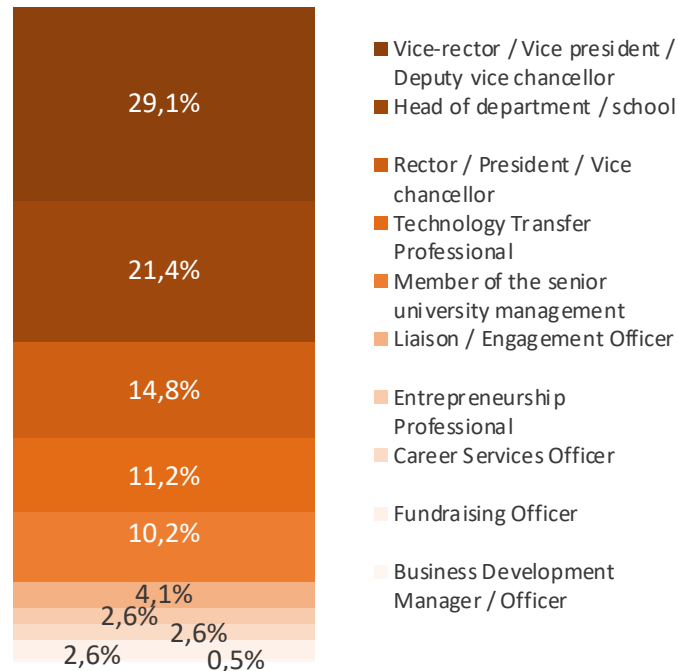
Years involved in UBC whilst working at a university or business

5%
12%
15%
18%
10%
6%
34%

Legend:
- 20 +
- 10 to <20
- 5 to <10
- 2 to <5
- 1 to <2
- 0 to <1
- 0

Over a third (34%) of academic respondents in Portugal have no UBC experience. 16% of respondents have shortly been involved in UBC (0 to 2 years), 18% have 2 to 5 years of experience, while 15% have been engaged in UBC for more than 5 years. Only 5% of academics in the sample engaged in UBC for more than 20 years.

Respondent profile – HEI representatives

Position of respondent

- Vice-rector / Vice president / Deputy vice chancellor
- Head of department / school
- Rector / President / Vice chancellor
- Technology Transfer Professional
- Member of the senior university management
- Liaison / Engagement Officer
- Entrepreneurship Professional
- Career Services Officer
- Fundraising Officer
- Business Development Manager / Officer

29,1%
21,4%
14,8%
11,2%
10,2%
4,1%
2,6%
2,6%
2,6%
0,5%

Number of students of the HEI

- 1 - 1,999
- 2,000 - 9,999
- 10,000 - 19,999
- 20,000 - 49,999
- 50,000+

23%
47%
21%
10%

Vice rectors or vice presidents represent the largest group of Portuguese HEI representatives (29.1%). 21.4% identified themselves as heads of department, 14.8% as rectors or presidents, 11.2% as technology transfer professionals, and 10.2% as members of the senior university management. The remaining respondents are liaison/engagement officers (4.1%), entrepreneurship professionals, career service officers and fundraising officers (2.6% each) and business development managers (0.5%) .
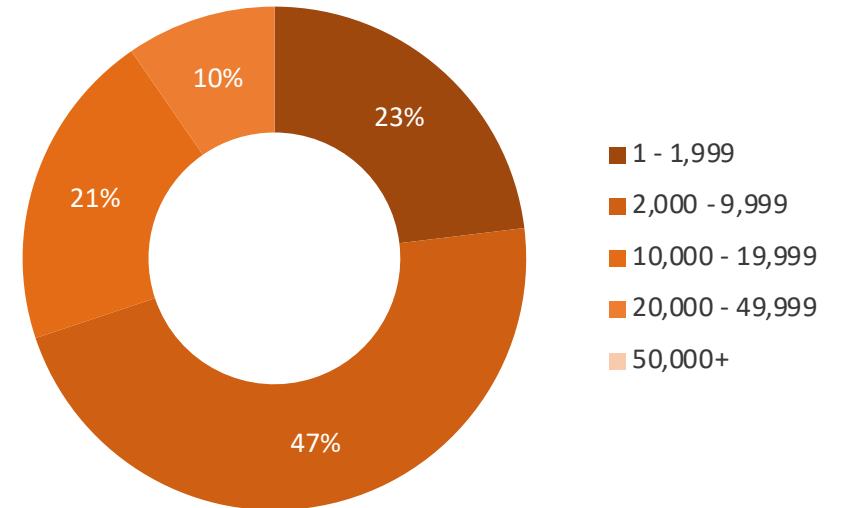
Overall, almost two thirds of HEI representatives work for micro-sized (1 to 1,999 students) or small HEIs (2,000 to 9,999 students). 21% of them work for medium-sized HEIs (10,000 to 19,000 students). Only 10% work in medium-large HEIs (20,000 to 49,999 students). None is affiliated with very large HEIs.

UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

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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

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