

State of University- Business Cooperation MACEDONIA

Business Perspective

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



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

Partners



Authors: Nino Japarashvili, Balzhan Orazbayeva, Vladimir Filiposki, Filip Fidanoski, Marina Ranga, Todd Davey, Arno Meerman, Victoria Galán-Muros and Mihai Melonari.

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



Executive summary

Summary

This report seeks to contribute to our understanding of the Macedonian business perspective on university-business cooperation (UBC). Examining the perceptions of a wide range of businesses provides positive signs for the future, with 100% of businesses that cooperate with universities planning to maintain or increase their cooperation in the future. Yet, more can be done for example in supporting businesses in Macedonia with the development of structures and policies that can support their cooperation efforts, as well as in developing capabilities, particularly of those businesses not currently engaged in cooperation.

About the study

The results presented in this report reflect the perceptions of businesses in Macedonia with respect to cooperation between universities and business. 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 32 Macedonian responses. The study measured the perceptions of respondents with respect to their businesses and cooperation efforts.

University-Business Cooperation

Education-related cooperation between the Macedonian businesses involved in this survey and universities is diverse. While 53% of respondents cooperate with universities in student mobility and 37% in lifelong learning, fewer businesses are involved in the delivery and design of the

curricula. Research activities, such as consulting and joint R&D, are also reported as rather well-developed areas of UBC.

Yet, the study shows that more than 50% of businesses do not undertake any valorisation related activities. In Macedonia these activities are limited, due to a closed academic environment and very limited interaction between theory-based university knowledge and practice-based business expertise. Furthermore, Macedonian UBC generally seems to be more formal in its nature, with the clear lack of willingness of involved parties to challenge the established ways of functioning on both sides.

It is notable that very few of the Macedonian businesses cooperate with more than 4 HEI partners. Taken that the number of partners may be related to the size of businesses, the aforementioned result could be driven from the fact that big companies in Macedonia are relatively small compared to the big companies in the EU, or in the region of Central and Eastern Europe.

Business says government needs to step up

Primary barrier identified by the respondents relates to insufficient government funding. This shows a lasting perception of Macedonian business sector as underfunded and not sufficiently supported, which could relate to the lack of entrepreneurial approach within Macedonian businesses. There seems to be a general attitude among businesses that everything should be intermediated by the government.

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

Moreover, respondents point towards the universities, including the lack of people with business knowledge and having no appropriate contact persons within universities. Difficulty in finding the appropriate collaboration partner and well-recognised differences between businesses and universities, such as differing motivations, are also represented in the sample.

Relationships matter

While existence of funding to undertake cooperation emerges as one of the top five facilitators, relationship related factors are much more prominent. It is the existence of mutual trust, mutual commitment and a shared goal, alongside prior relations with a partner, which are identified as top drivers stimulating UBC in Macedonia. These results indicate that any effort towards enabling cooperation between businesses and universities should focus on relationship development as a central ingredient.

It is not just for us

What motivates businesses to cooperate with universities? Macedonian businesses seem most enthused to undertake UBC in order to access better qualified graduates and get access to new technologies and knowledge. They are also highly motivated to positively impact society. In addition, factors, such as improved innovation capacity or the improved reputation, are sought to be among the top drivers of UBC in the country.

Operation and strategy first

Less is known about supporting mechanisms of UBC in the realm of the Macedonian businesses. This study indicates that operational mechanisms are the most highly developed in the country, with 44% of respondents identifying that employment fairs are adopted by their organisation. Strategic mechanisms, such as existence of a top-level management commitment and a strategy to cooperation with universities are also accounted for. A different picture emerges with regards to supporting policies and structures, which are less adopted by the businesses represented in the sample.

More to learn

Macedonian businesses cooperating with universities have higher perceptions regarding their UBC capabilities in the area of education and training, and research. Skills and knowledge in relation to UBC procedures and processes, in particular, emerge as in need of development. Results also indicate the need to provide more clarity for businesses on what motivates universities to collaborate.

Introduction

About the study

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

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

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

Main activities

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

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

Why care about university-business cooperation?

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

Study Objectives

The specific objectives for the study are:

- Chart the current state of play and provide an in-depth analysis of UBC in the countries covered by this study, from the HE and business perspectives;
- Deliver 52 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

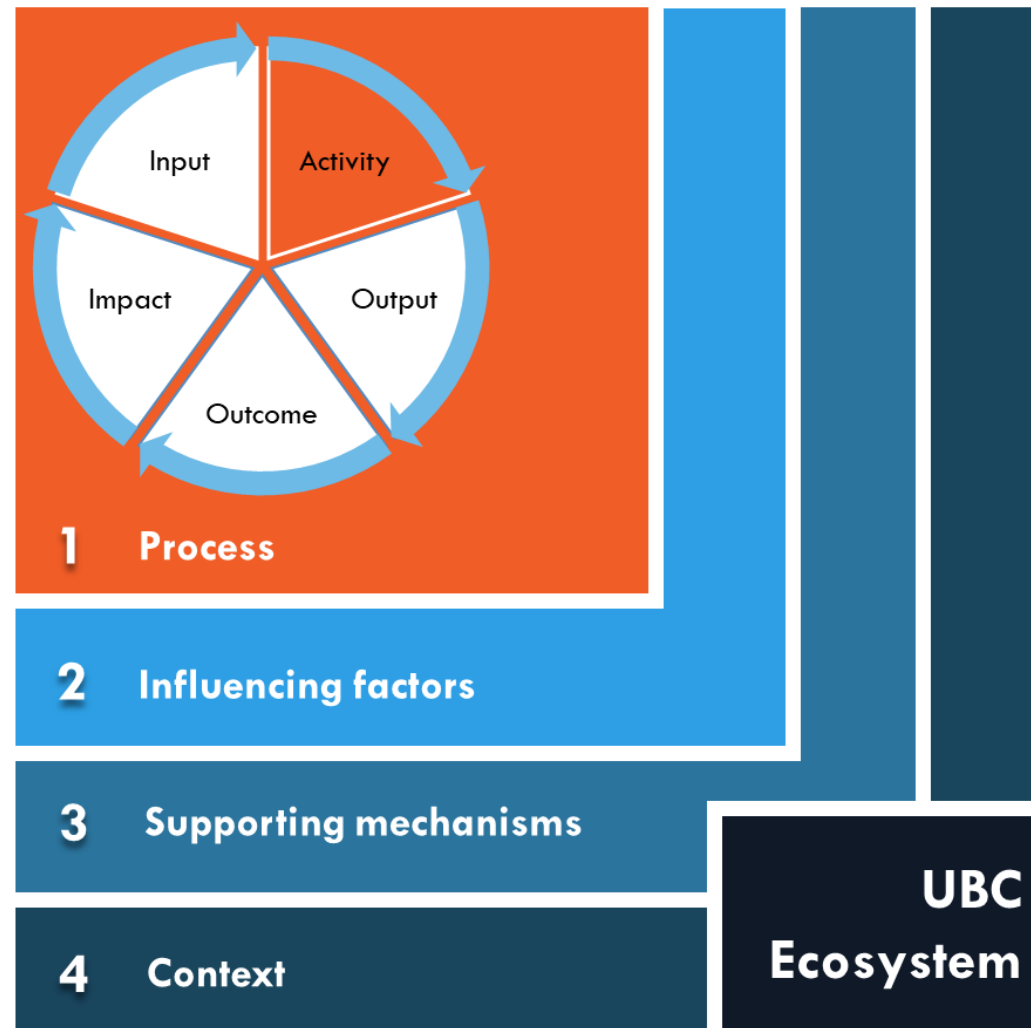
UBC activities

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 business people 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

Macedonian businesses mainly engage in mobility of students (5.3) and lifelong learning (3.9). Thus almost 40% of businesses do not undertake these activities at all. As for research activities, consulting (3.8) and joint R&D (3.7) are also reported as well-developed.

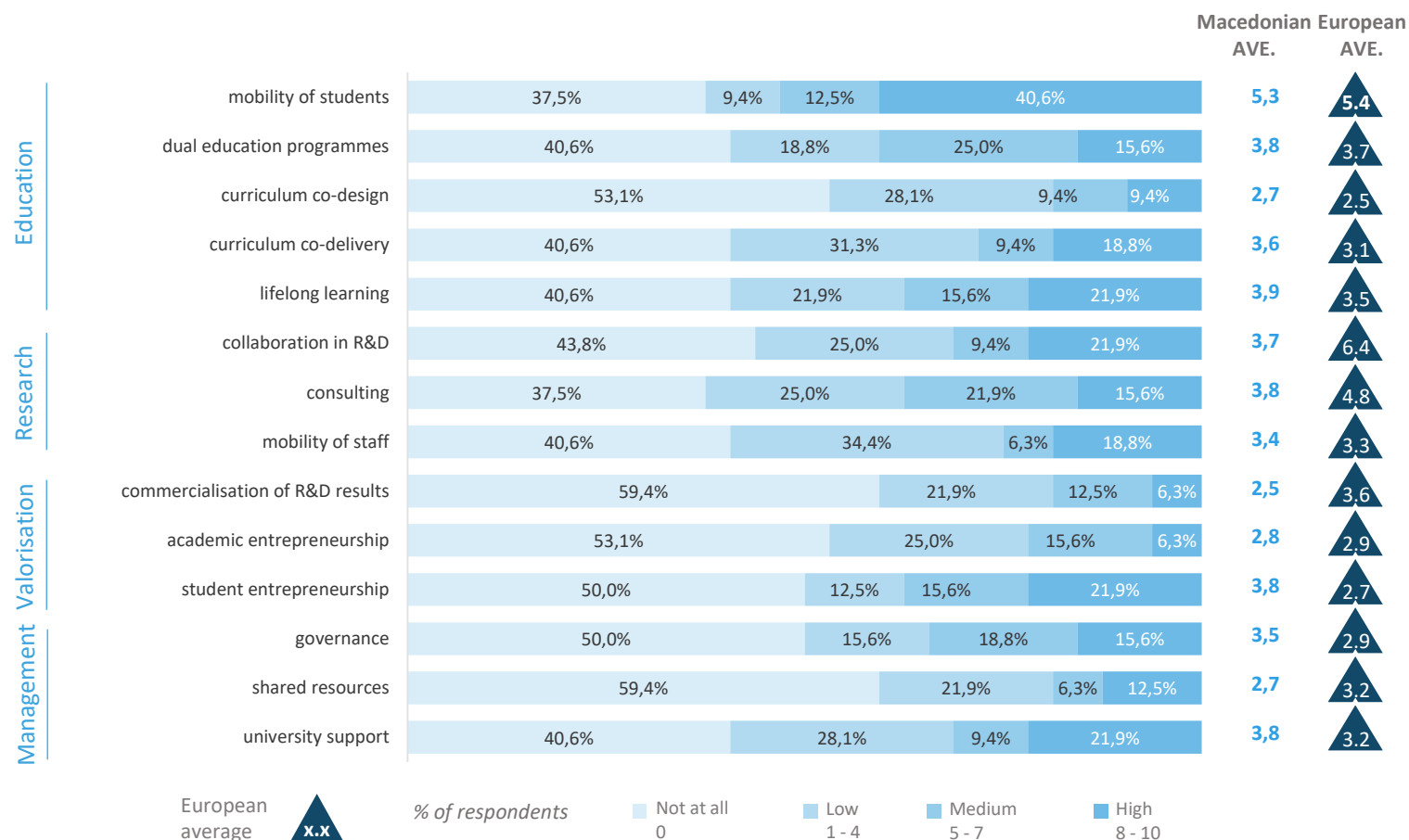
Yet, more than 50% of businesses do not undertake any valorisation related collaboration (except university support). In Macedonia these activities are limited, due to a closed academic environment and very limited interaction between theory-based university knowledge and practice-based business expertise. Furthermore, Macedonian UBC generally seems to be more formal in its nature, with the clear lack of willingness of involved parties to challenge the established ways of functioning on both sides.

Particularly low are the activities of curriculum co-design (2.7), shared resources (2.7) as well as commercialisation of R&D results (2.5).

Overall, in comparison with the development of the UBC activities for European business, the Macedonian UBC extent is very similar.

UBC activities development

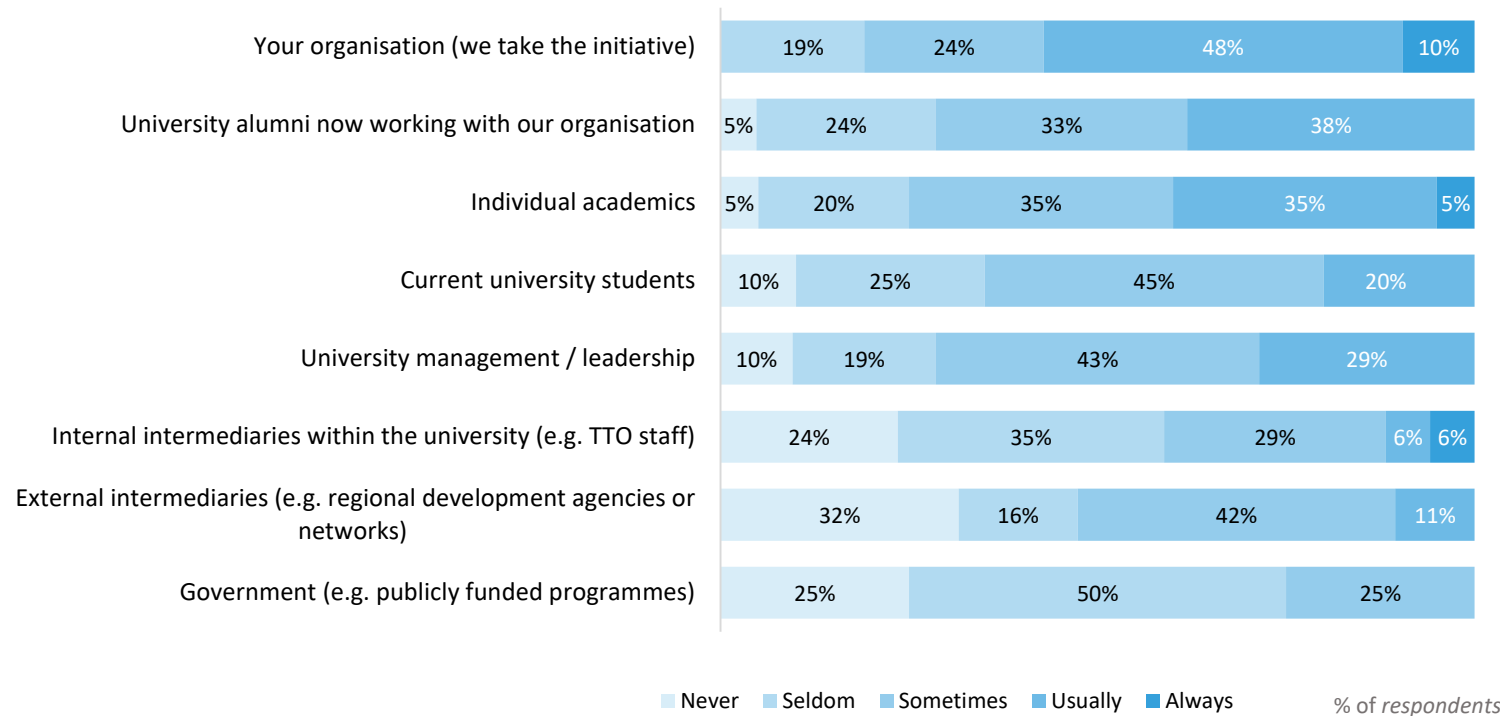
'Which UBC activities do you collaborate with universities in?'



Initiation of UBC

How UBC is initiated

'How often various stakeholders initiate UBC activities'



Macedonian businesses clearly see themselves as the major initiator of cooperation with universities. 58% of businesses state that their organisation always or usually initiate UBC.

Macedonian businesses also see individual academics as active actors in initiating cooperation, although to a lesser extent.

Government, internal and external intermediaries are perceived as passive in UBC initiation. 75%, 59% and 48% of the businesses respectively report that they never or seldom take the initiative towards UBC.

Geographical location still matters

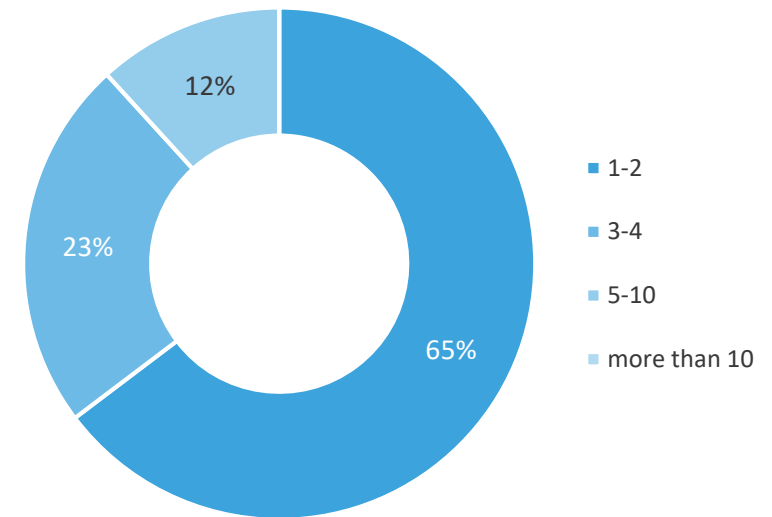
It is notable that very few of the Macedonian businesses cooperate with more than 4 HEI partners. Taken that the number of partners may be related to the size of businesses, the aforementioned result could be driven from the fact that big companies in Macedonia are relatively small compared to the big companies in the EU, or in the region of Central and Eastern Europe.

Location of university partners

Percentage of cooperating businesses with...	
universities in their region	95%
universities in their country	89%
universities outside their country	68%

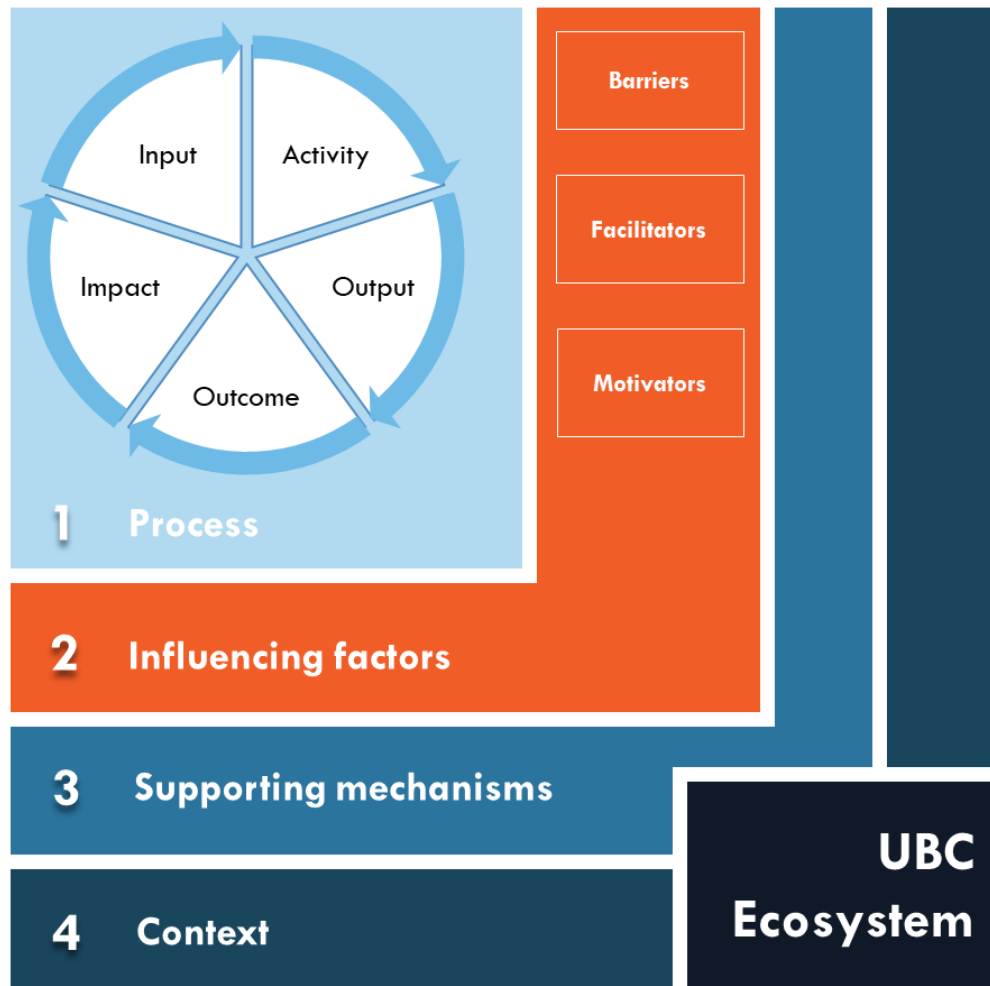
While most Macedonian businesses cooperate with universities in their region (95%), the results also show high percentages for universities within Macedonia (89%). 68% cooperate with universities outside Macedonia.

Number of university partners



88% of Macedonian business respondents cooperate with less than 4 HEI partners leaving only 12% that have established relations with 5 to 10 partners.

Factors influencing UBC



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

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

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

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

Barriers hindering UBC

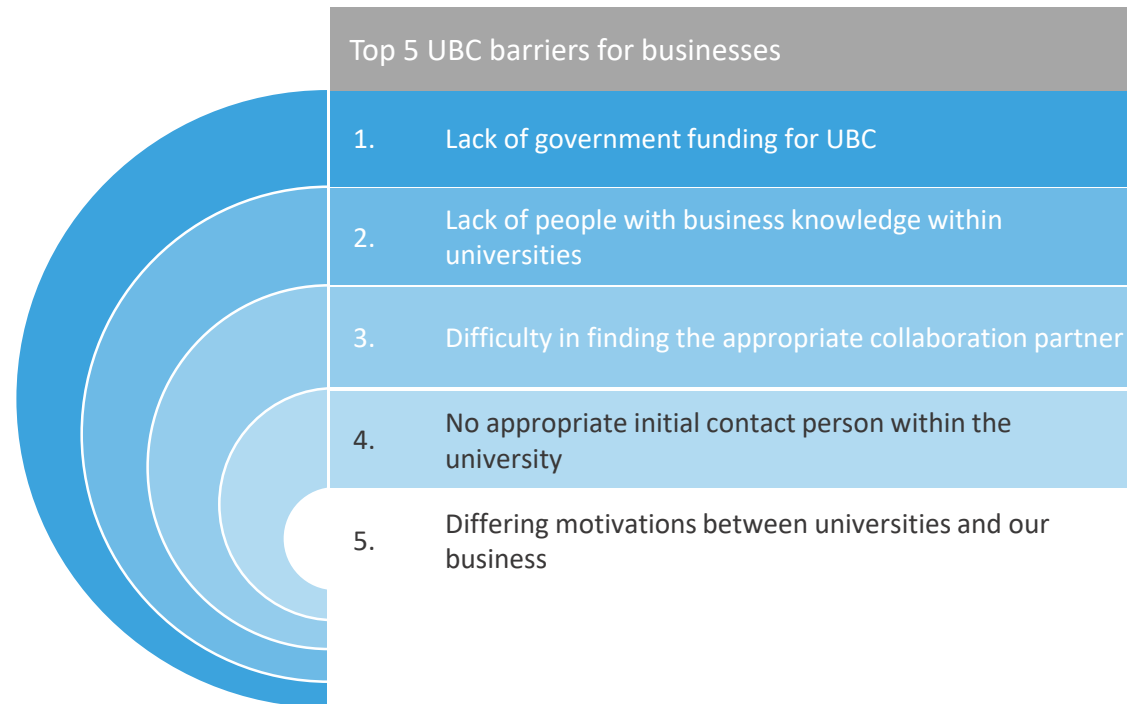
The main barriers inhibiting collaboration for Macedonian businesses include the lack of government funding and the lack of people with business knowledge within universities. Difficulty in finding the appropriate partner and no appropriate initial contact person within the university also inhibit UBC for Macedonian businesses.

A further barrier is related to the cultural issue namely differing motivations between business and university.

These results show a lasting perception of Macedonian business sector as underfunded and not sufficiently supported, which could relate to the lack of entrepreneurial approach within Macedonian businesses. There seems to be a general attitude among businesses that everything should be intermediated by the government.

Barriers

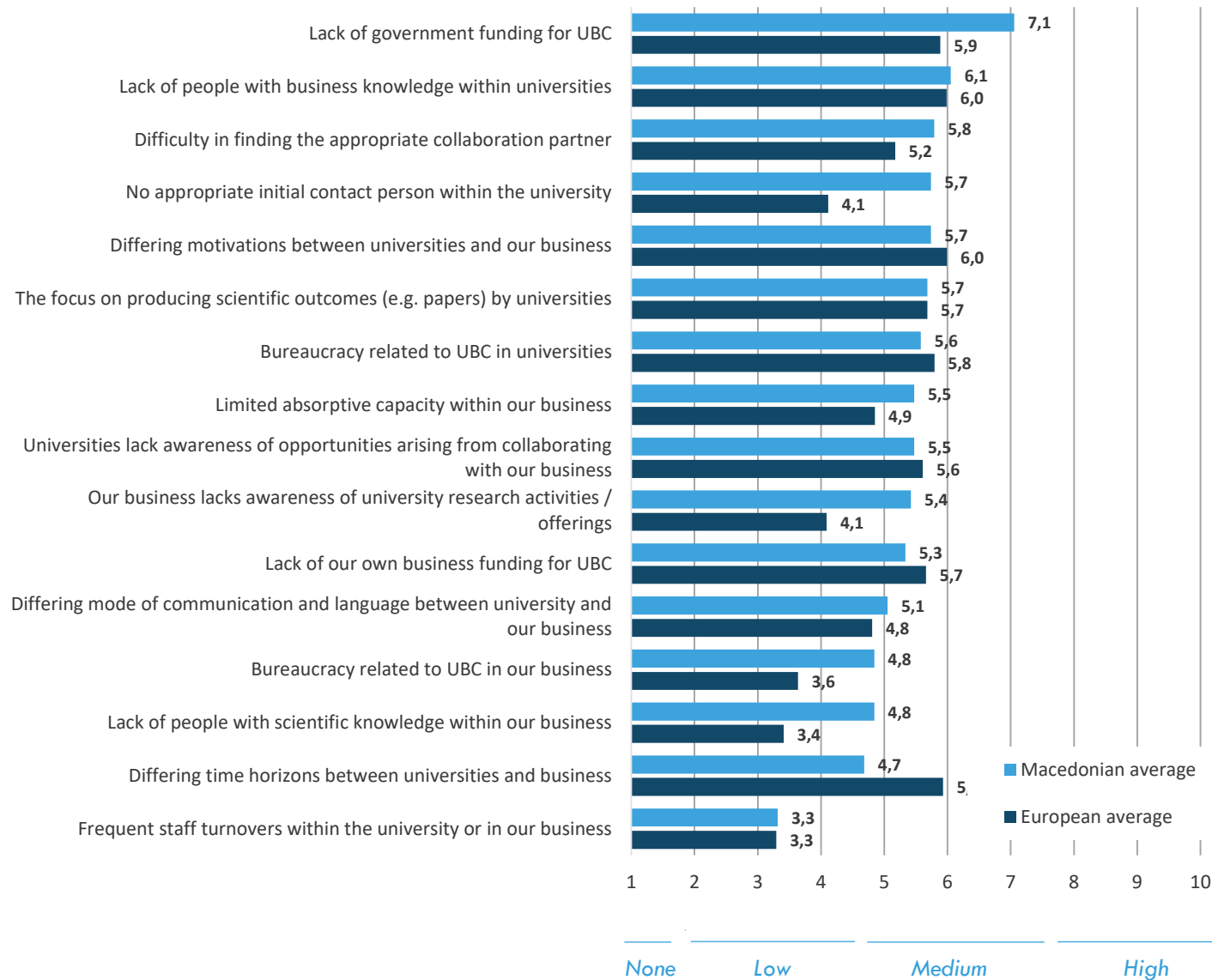
'What is inhibiting your cooperation with universities?'



Barriers hindering UBC

Barriers

'What is inhibiting your cooperation with universities?'



Overall, Macedonian businesses perceive the barriers stronger than their European counterparts.

The lack of government funding is significantly more inhibiting for Macedonian businesses (7.1) than it is for their European counterparts (5.9).

Similarly, no appropriate initial contact person as well as business' lack of awareness of university offerings are perceived considerably stronger by Macedonian businesses.

Conversely, differing time horizons between two organisations is less inhibiting for UBC in Macedonia (4.7) than for businesses Europe (5.9).

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

Drivers stimulating UBC

The main factors that facilitate Macedonian business cooperation with universities are related to relationship and funding drivers.

A relationship based on trust, commitment, shared goal and prior history highly facilitates UBC for Macedonian businesses, resulting in smoother and more successful collaboration with universities.

The funding to undertake UBC also facilitates UBC in Macedonia.

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

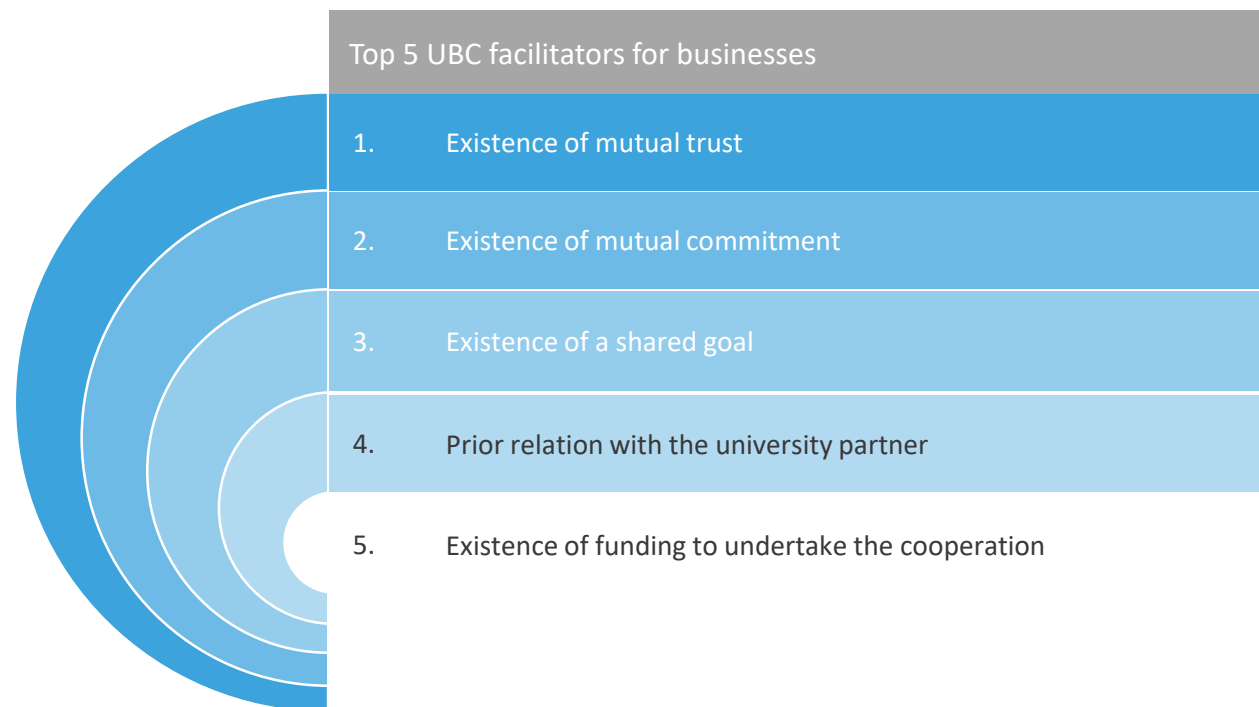
1. **Facilitators** – factors that enable or ease cooperation
2. **Motivators** – incentives or benefits that the respective stakeholders would like from the cooperation

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

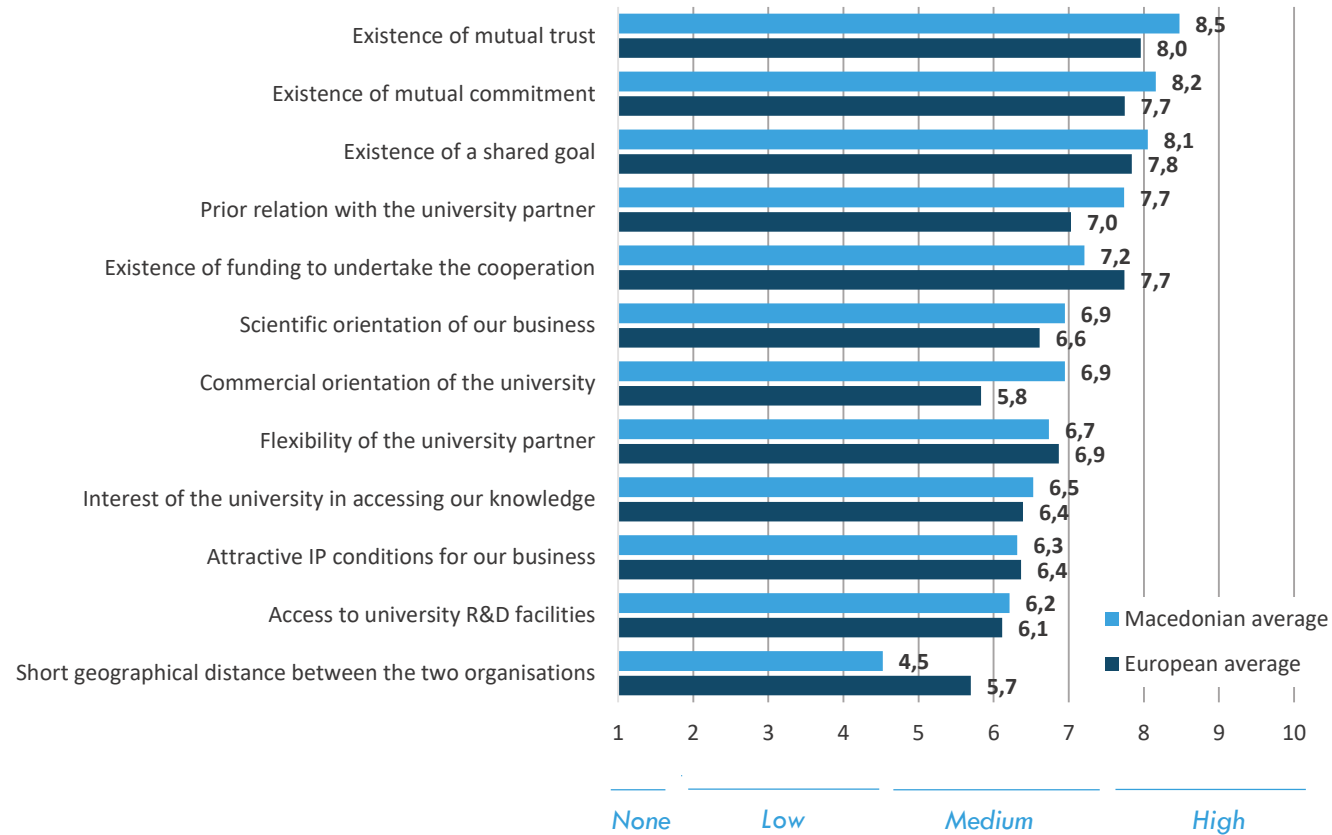
'What is facilitating your cooperation with universities?'



Drivers stimulating UBC

Facilitators

'What is facilitating your cooperation with universities?'



Macedonian business have a stronger perception of most facilitators than their European counterparts.

This is the case for those personal relationship facilitators, which bear great importance in the advance of UBC in Macedonia.

The commercial orientation of the university also facilitates UBC for Macedonian businesses to a larger extent.

However, the existence of funding to undertake the cooperation and the short geographical distance between the two organisations have lower importance as facilitators for Macedonian businesses than for their European counterparts.

Drivers stimulating UBC

The main motivators for Macedonian businesses to undertake UBC are related to competitiveness and funding.

Businesses cooperate with universities primarily to get access to better qualified graduates.

Macedonian businesses are also motivated to access new technologies and knowledge as well as discoveries at an early stage.

They also have a willingness to positively impact society when collaborating with universities.

A less important but still relevant motivation is to improve the business reputation.

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

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

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

Motivators

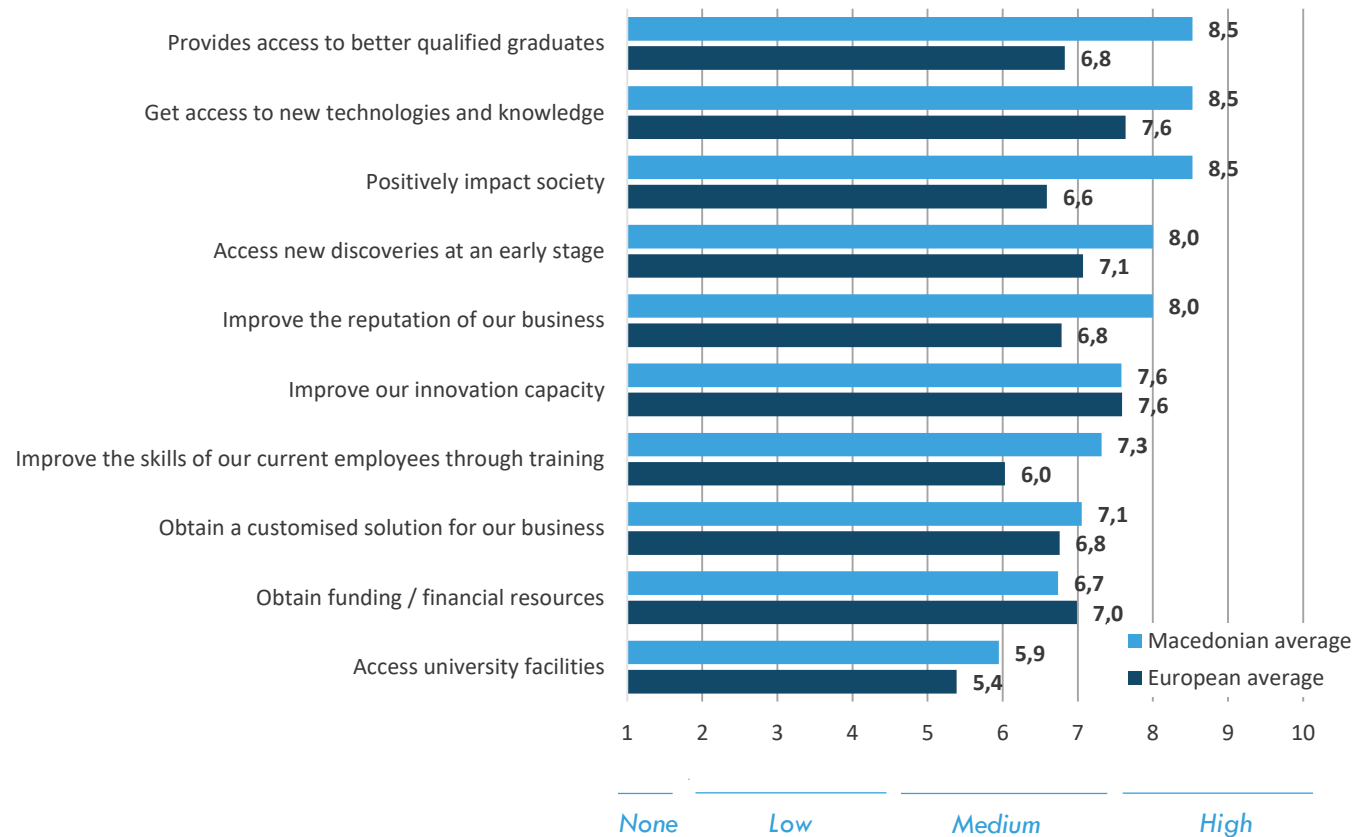
'What motivates you to cooperate with universities?'



Drivers stimulating UBC

Motivators

'What motivates you to cooperate with universities?'



Overall, Macedonian businesses perceive motivations to cooperate with universities notably higher than the European businesses.

The top three motivators that relate to the access to qualified graduates, new technologies and willingness to positively impact society are perceived considerably higher by Macedonian businesses than they are by their European counterparts.

Like their European counterparts, Macedonian businesses are not highly motivated by the willingness to access university facilities.

Benefits of UBC

Macedonian and European businesses have rather a different perception in respect to which stakeholder group benefits more or less from UBC.

Yet, both groups see students as the primary beneficiaries of UBC.

Notably, Macedonian businesses see themselves also as beneficiary, whereas European businesses perceive their own benefits to a slightly lower extent.

There are less UBC benefits for society and academics from the perspective of Macedonian businesses. The lowest benefits are perceived by both Macedonian and European businesses to be for 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?'

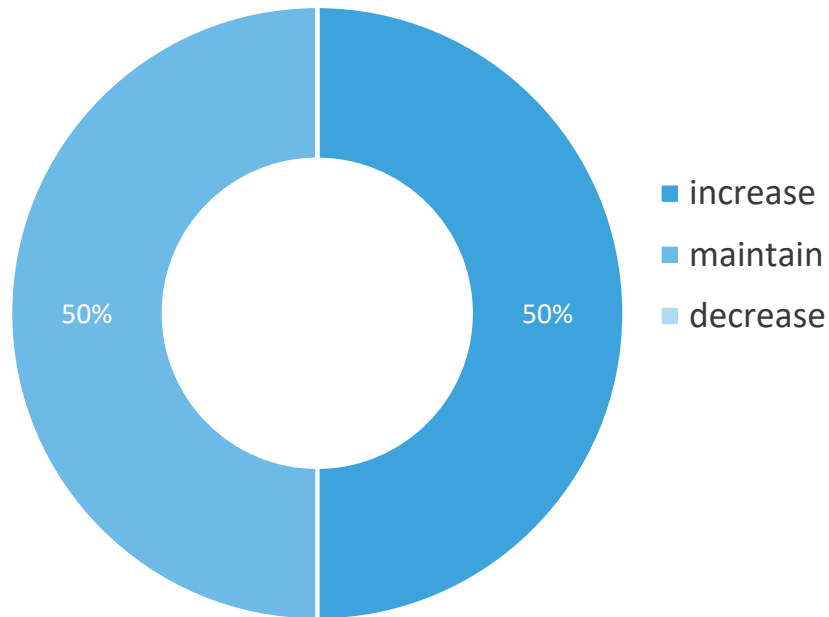


	Macedonian businesses	European businesses
1.	Students	Students
2.	Businesses	Universities
3.	Universities	Businesses
4.	Society	Academics
5.	Academics	Society
6.	Government/public authorities	Government/ public authorities

Future intentions

Future UBC intentions – Macedonia

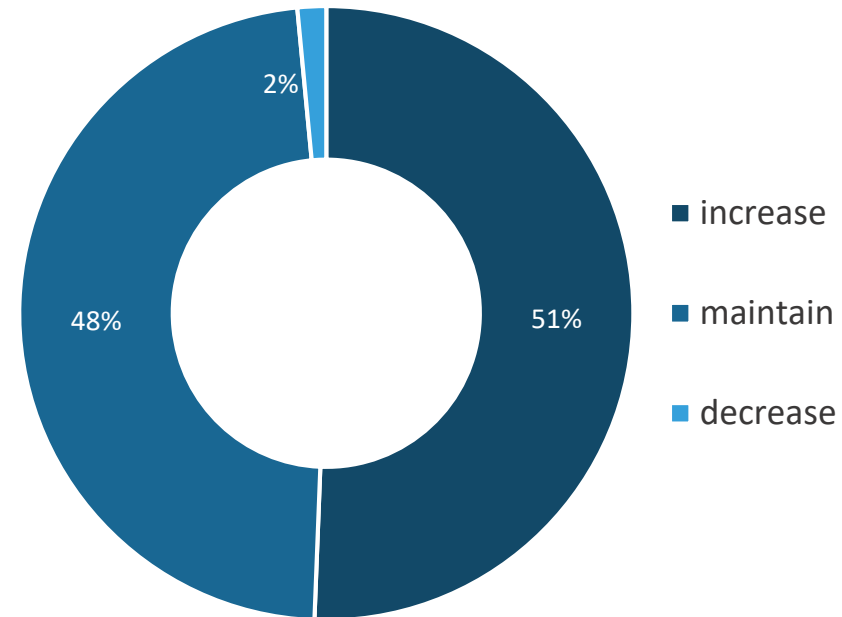
As answered by Macedonian businesses



100% of businesses in the Macedonian sample that cooperate with universities indicate that they plan to maintain or increase their cooperation.

Future UBC intentions – Europe

As answered by European businesses



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

Willingness to recommend UBC

The willingness of Macedonian cooperating businesses to recommend to a colleague to engage in UBC does not vary much depending on whether this cooperation is in research or in education.

Macedonian businesses are less satisfied with UBC in research than their European counterparts (NPS=16). While 42% of them will promote it positively, 26% would do it negatively.

Regarding cooperation in education, Macedonian businesses are significantly more satisfied in this area of UBC than European businesses are (NPS=32). 53% would highly recommend it and only 21% will not recommend it at all.

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

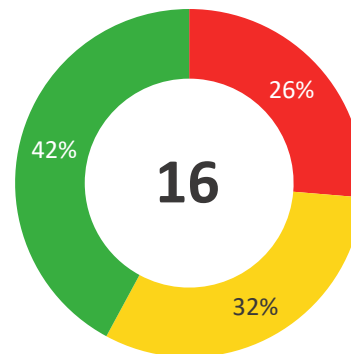
education and training (E&T). The *Net Promoter Score* metric offers a proxy for customer satisfaction.

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

	Detractors	Passives	Promoters	Net promoter score
Business cooperating with universities in R&D	26%	32%	42%	16
Business cooperating with universities in E&T	21%	26%	53%	32

Satisfaction with cooperation with universities (net promoter score)

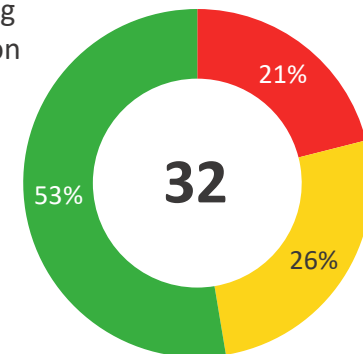
Business cooperating in research



■ Detractors ■ Passives ■ Promoters

European business NPS result: 28.2

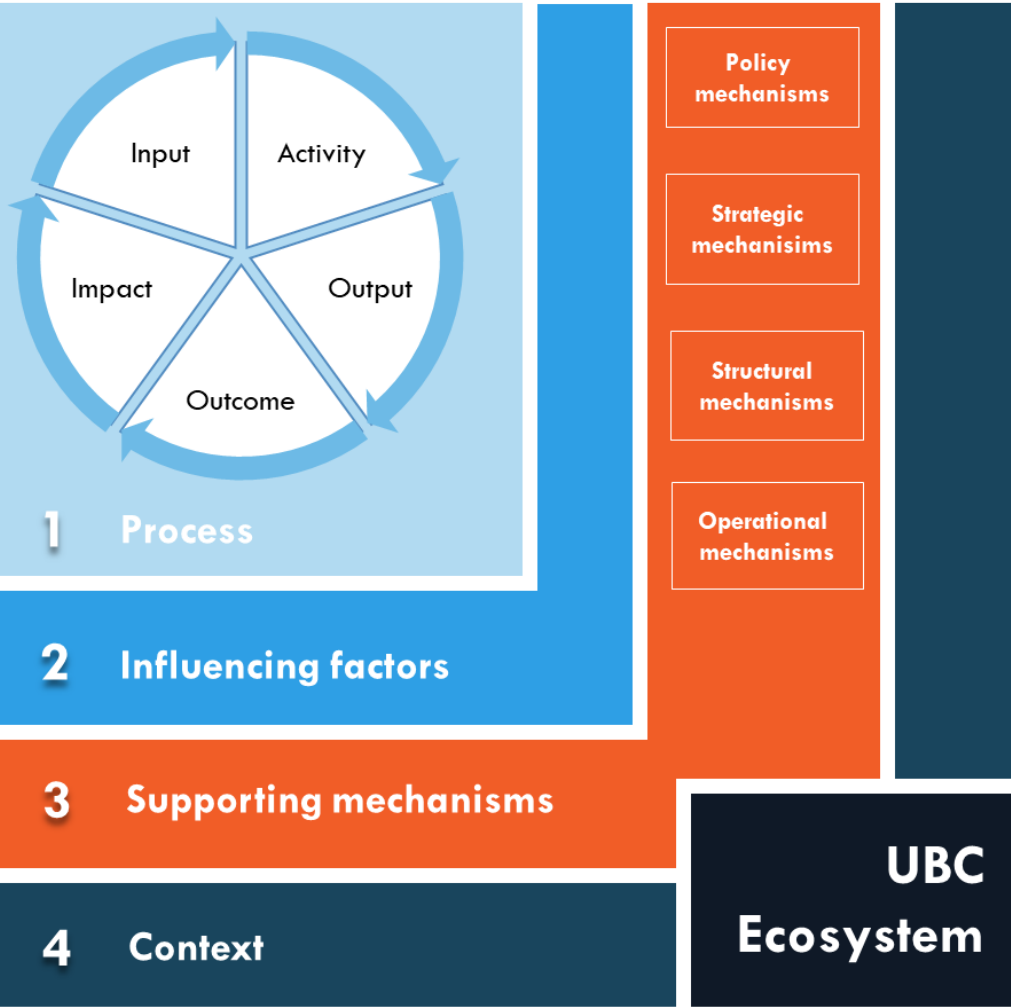
Business cooperating in education



■ 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

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

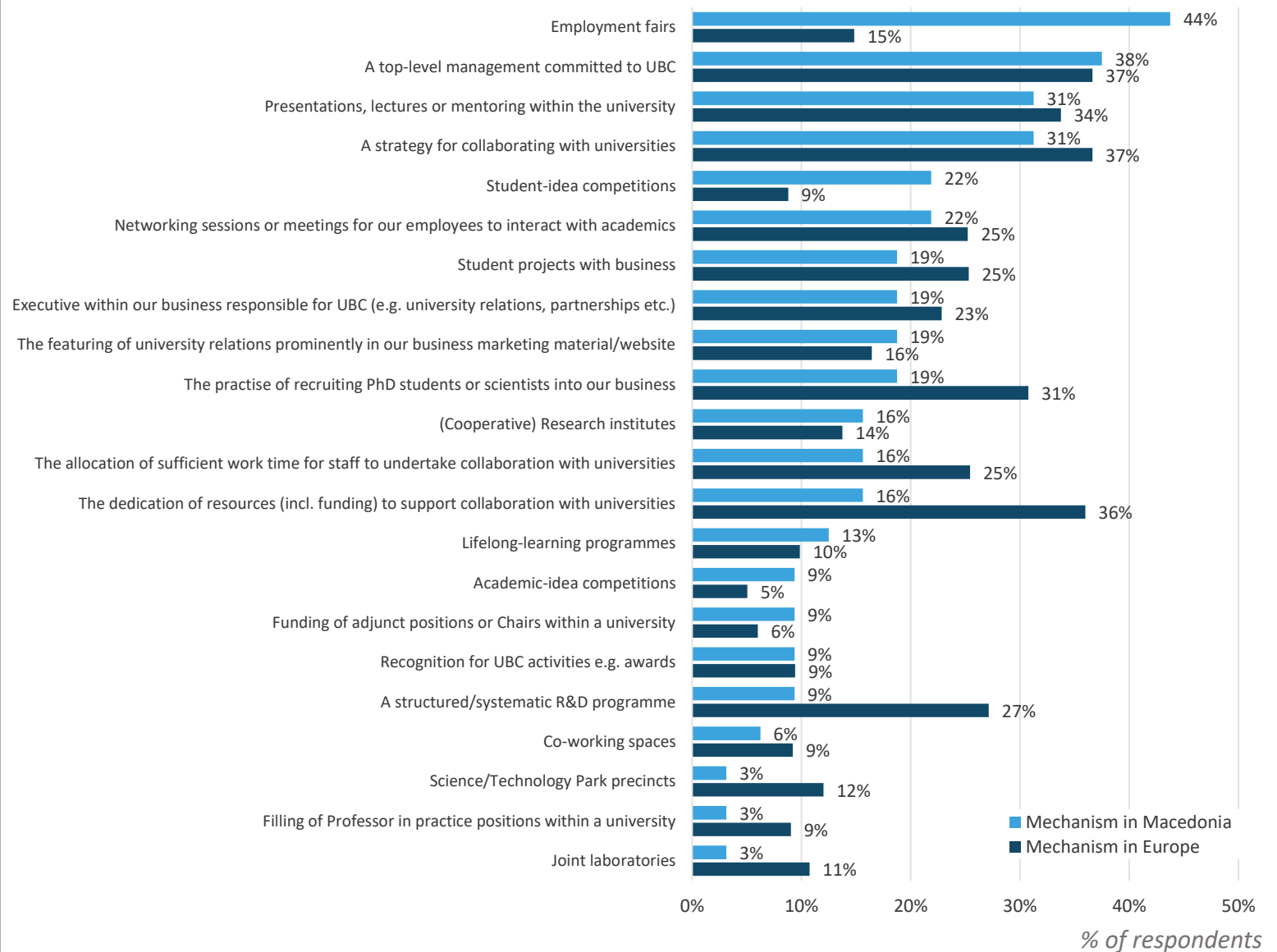
Interestingly, the most developed mechanism is related to the employment fairs, with 44% of the Macedonian businesses indicating that this mechanism is adopted by their organisation, which is significantly higher than the EU average (15%).

Like their European counterparts, Macedonian businesses employ mechanisms related to a top-level management committed to UBC (38%) as well as presentations, lectures or mentoring within the university (31%).

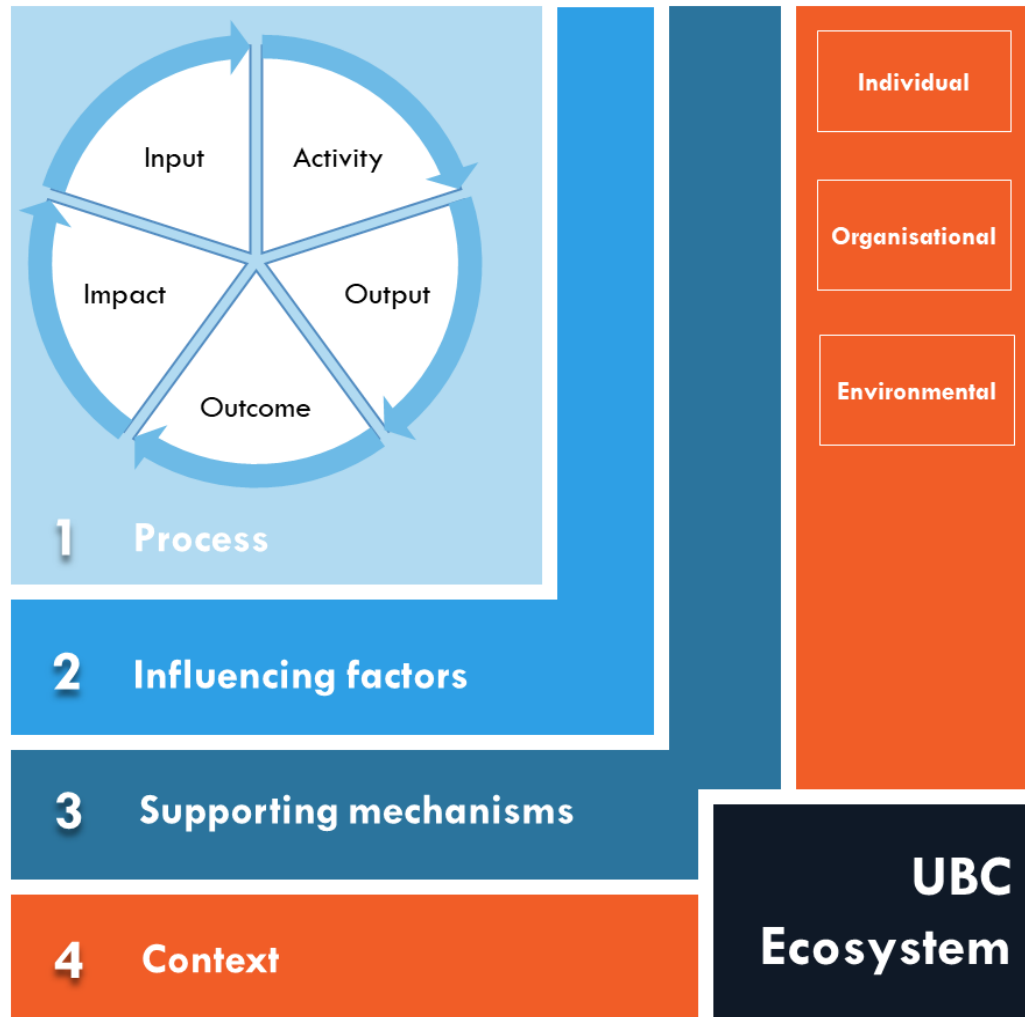
Compared to the European average, the recruitment of PhD students, the allocation of sufficient work time for staff to undertake collaboration with universities, the dedication of resources (incl. funding) to support collaboration with universities, along with a structured R&D programme are significantly less common in Macedonian businesses than in European ones.

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

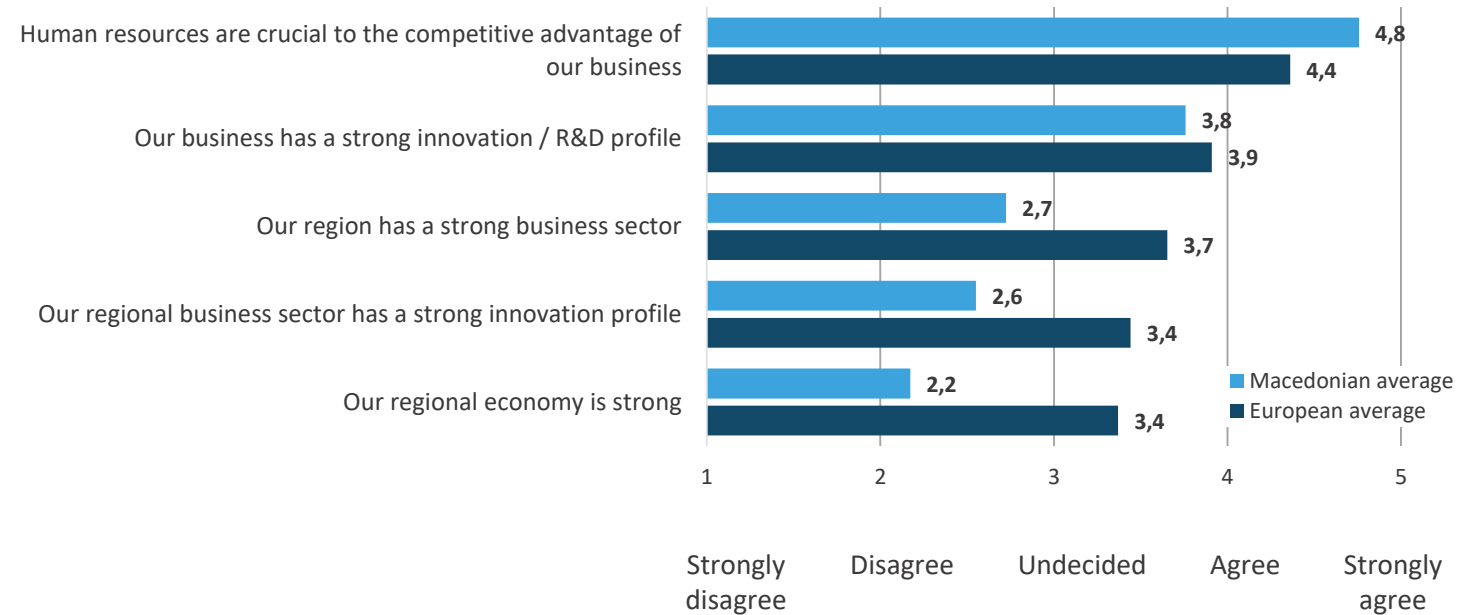
Macedonian businesses cooperating with universities perceive their context similarly to European cooperating businesses.

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

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

Contextual factors affecting UBC

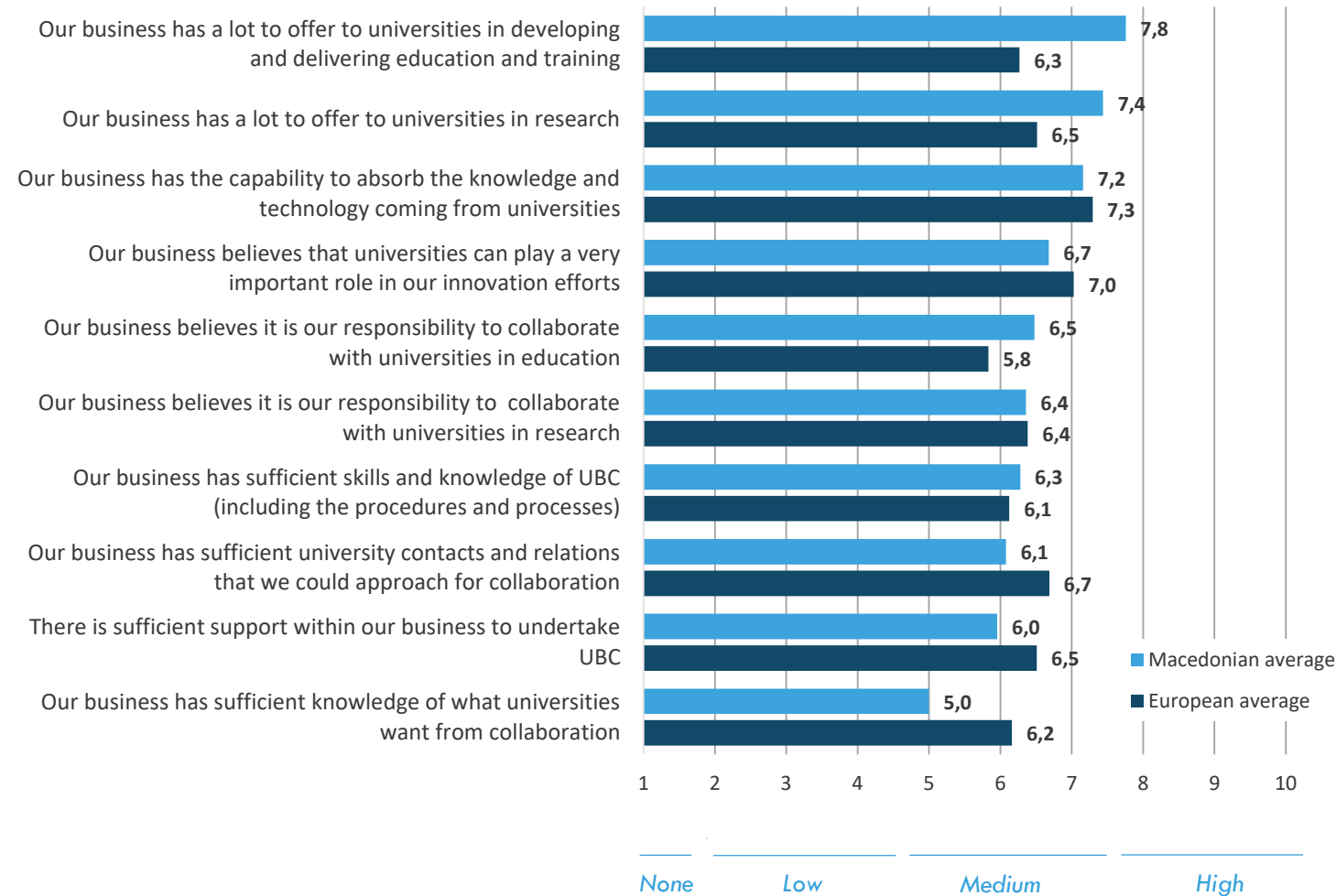
'To what extent do you agree with the following statements?'



UBC capabilities and beliefs

Supportive UBC environment

How supportive are your organisation and environment for UBC?'



Businesses in Macedonia perceive themselves as supportive towards cooperation with universities.

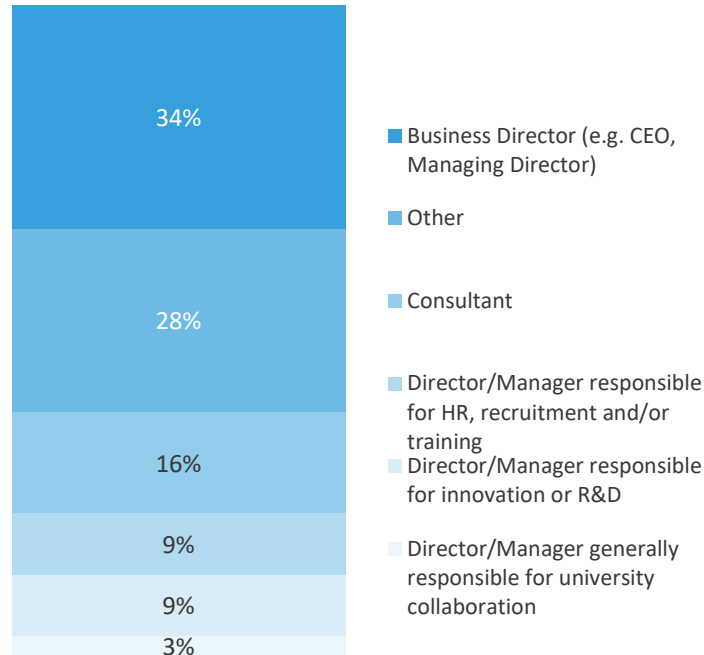
In particular they identify their strengths in delivering education and training (7.8) as well as doing research (7.4) with or for universities. Compared to European average, they are notably more certain about these capabilities.

Macedonian businesses perceive that they have the capability to absorb knowledge and technology from universities and that universities play an important role in their innovation efforts.

However, Macedonian businesses consider lack of support to undertake UBC (6.0) and have insufficient knowledge of universities' needs (5.0), both ranked considerably lower than the EU average.

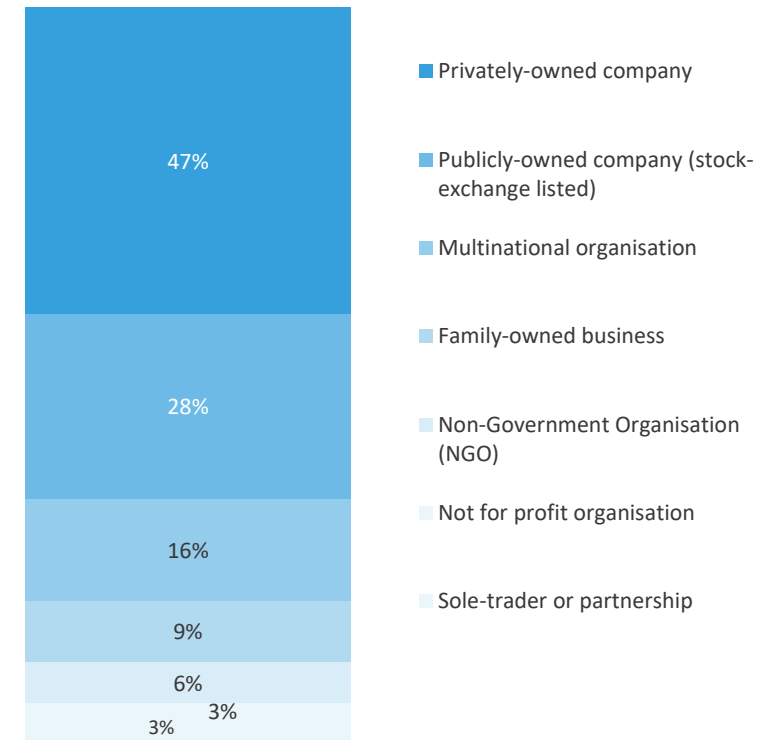
Respondents profile

Position of respondent



Business directors represent the largest group in the Macedonian sample (34%), followed by consultants (16%). The remaining respondents identified themselves as directors for HR, recruitment and training, directors responsible for innovation or R&D and directors responsible for university collaboration. 28% of Macedonian business respondents hold 'other' positions.

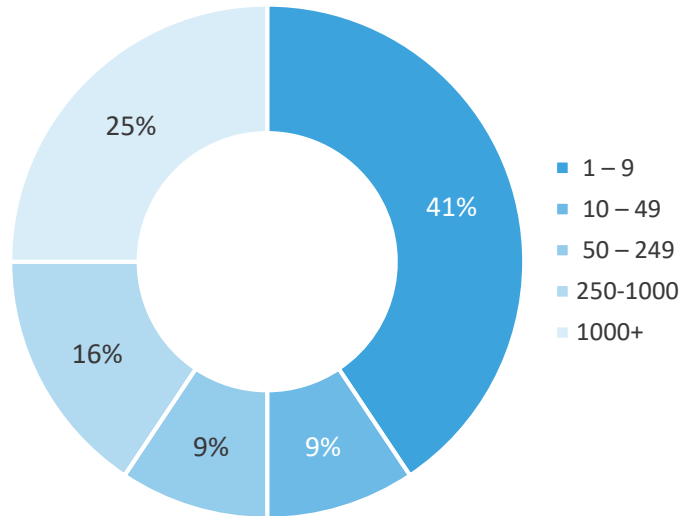
Type of business



A wide variety of businesses were represented in the Macedonian sample. Almost half of them (47%) are privately-owned companies, followed by publicly-owned companies (28%) and multinational organisations (16%). The type of business with less than 10% representation included family owned businesses, NGOs, not for profit organisations and sole traders.

Respondents profile

Business size



Sample Size	
Macedonian business representatives	n = 32
European business representatives	n = 3.113

Half of the Macedonian business sample is comprised by small and micro-sized firms. Large companies (250 to 1000+ employees) are represented by 41% and medium-sized companies represent only 9% of the sample.

Contact us

Todd Davey - davey@uiin.org

Arno Meerman - meerman@uiin.org

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

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