



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

State of University-
Business Cooperation

MACEDONIA

University Perspective

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



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

Partners



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Executive summary

Summary

This report seeks to contribute to our understanding of the Macedonian higher education institutions' (HEI) perspective of university-business cooperation (UBC). Examination of the perceptions of academics, HEI managers and knowledge transfer professionals (KTP) points out that the extent of UBC activities are significantly less developed compared to the European averages. However, despite the low levels of cooperation, Macedonian academics show a very strong commitment to UBC, with a major portion of them expecting to increase their activities in the future. This positive attitude towards UBC can be reinforced by providing academics the guiding tools and mechanisms, network and incentives to increase their involvement in UBC.

University-Business Cooperation

Macedonian academics responding to this survey report significantly low levels of UBC engagement. While the most developed area of UBC is education, only 35% of the academics are involved in student mobility and curriculum co-delivery at a medium to high degree. More than 50% of the academics indicate they do not engage in any kind of educational UBC activities at all. Valorisation and management related UBC activities receive the lowest scores, with over 60% of the academics surveyed report they do not cooperate with businesses in these areas.

Respondents see themselves as the most proactive initiators of UBC, with 67% of respondents stating that they usually or always initiate such cooperation, along with other strong initiators they indicate as alumni, businesses, and HEI leadership.

As for the location of cooperation partners, 65% of the academics choose to cooperate with regional partners, in contrast to only 6% who collaborate with international companies to a large extent. This may be due to insufficient level of networking of the academics within the international scientific/research programs and projects. Being outside the EU, Macedonia may have reduced opportunities to be engaged in EU projects. But also, the initiative of Macedonian academics may be insufficient. And structurally, teaching and academic activities may be dominant when compared to research and applied work, the latter being more relevant for cooperation with businesses.

Regarding the size, 70% of the academics cooperate with small and micro sized business, and only 12% and 13% of academics report engaging with medium-sized and large businesses to a large extent respectively. This may be because of the high level of internationalization of larger businesses, which gives them wider opportunities to cooperate with foreign experts and consultants.

Limited finances inhibit UBC

Independent of whether the academics are currently cooperating with business or not, the top five barriers identified by the respondents are related to resources and cultural issues. The most hindering barrier to cooperation for both groups is lack of government funding, followed by limited university funding and limited resources of the SMEs. Similarly, Macedonian HEI representatives report they are inhibited by limited resources and funding to engage in UBC as well.

Low levels of government funding for scientific and research activities, as a percentage of GDP, has been

NOTE: This report provides a university 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.

always an important issue related to insufficient performance of the economy in terms of its innovativeness and entrepreneurial capacity. This perception is also caused by the general tendency by both academia and businesses to expect that government should be involved in all aspects of their activities. Also, businesses are more oriented toward the domestic market, and additionally, are dependent on the orders by public sector entities, so they are not under sufficient pressure from the international markets to innovate and invest in R&D.

Differing motivations may well be relevant, as businesses generally strive for short term fixes and shortcuts, while academics may be inclined to more systematic approach to issues. Applied scientific research oriented to solving practical everyday problems may not have a long tradition in Macedonia.

Relationships matter

For Macedonian academics, the main drivers facilitating UBC focus on the relationship aspect, highlighting the importance of a shared goal, mutual commitment and a prior relation with the business partner for successful UBC. In this respect, Macedonian results regarding the importance of relationship component to UBC is similar to those of the European cooperating academics. The perceptions of Macedonian HEI representatives for the UBC facilitators are rather different, with respondents indicating business' interest in accessing scientific knowledge as the most important driver.

Different motivations for UBC

What motivates Macedonian HEI respondents to engage in university-business cooperation? While

cooperating academics highlight motivations focused on their own research and teaching, the academics not engaged in UBC are more driven by the benefits that other stakeholders including graduates, university and society can get from UBC. On the other hand, Macedonian HEI representatives highlight the motivation to improve graduate employability, in addition to societal impact.

Lack of policy support

While the perceptions of Macedonian HEI representatives towards development of strategic mechanisms are relatively high with the top two strategies listed as the documented commitment of the university top-level management to UBC and practice of recruiting business professionals into knowledge transfer area, the development of policy mechanisms lags behind. At the operational level, entrepreneurship courses offered to students, and information sessions about UBC are the most developed mechanisms reported by the respondents. As for structures, employability and career services are the most developed mechanisms supporting UBC in Macedonian HEIs.

Positive attitude towards UBC

When it comes to capabilities for UBC, Macedonian academics report they have insufficient skills and knowledge of UBC, business contacts, and support to undertake UBC. On the contrary, they have a more positive attitude the role of the UBC actors to initiate and carry out the collaboration. Another promising result of the survey is that generally cooperating academics in Macedonia have strongly positive attitude towards UBC.

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.



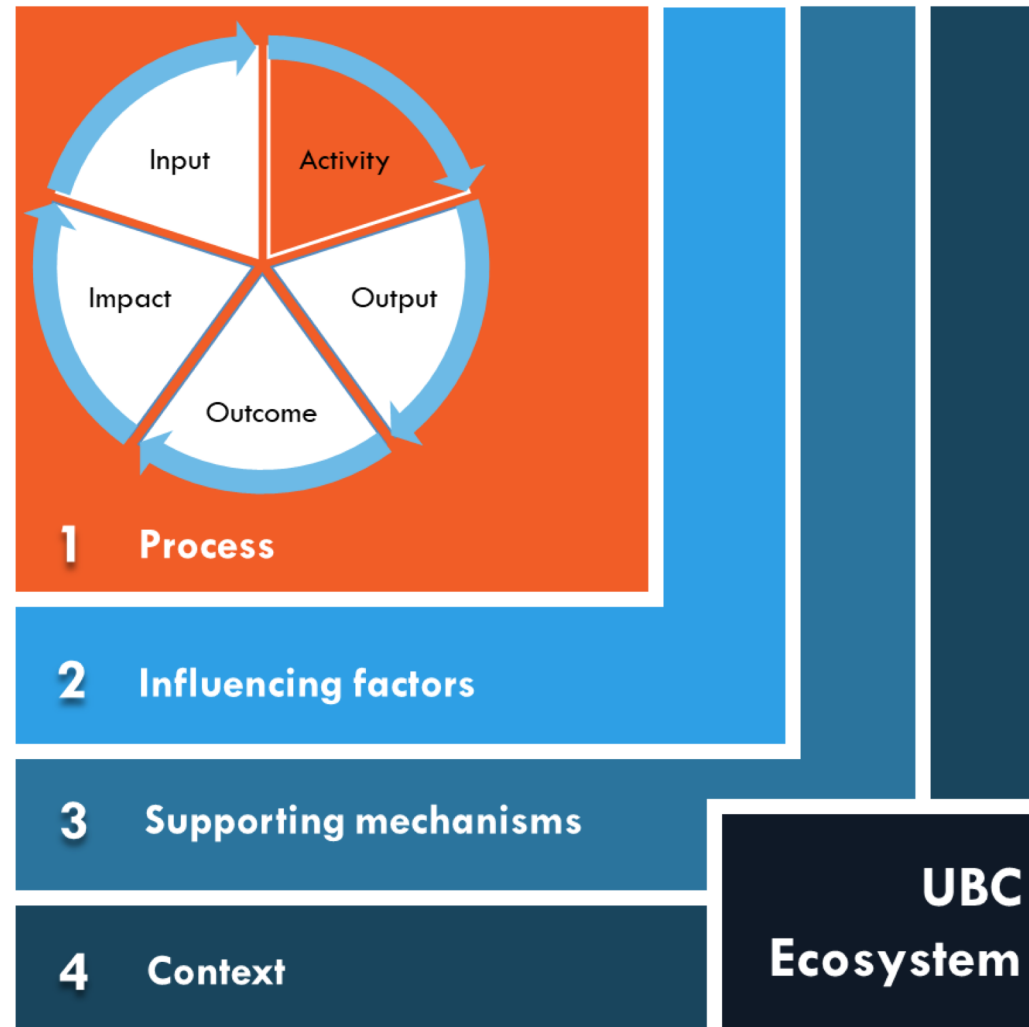
UBC activities

UBC Ecosystem Framework™

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

Development of UBC activities

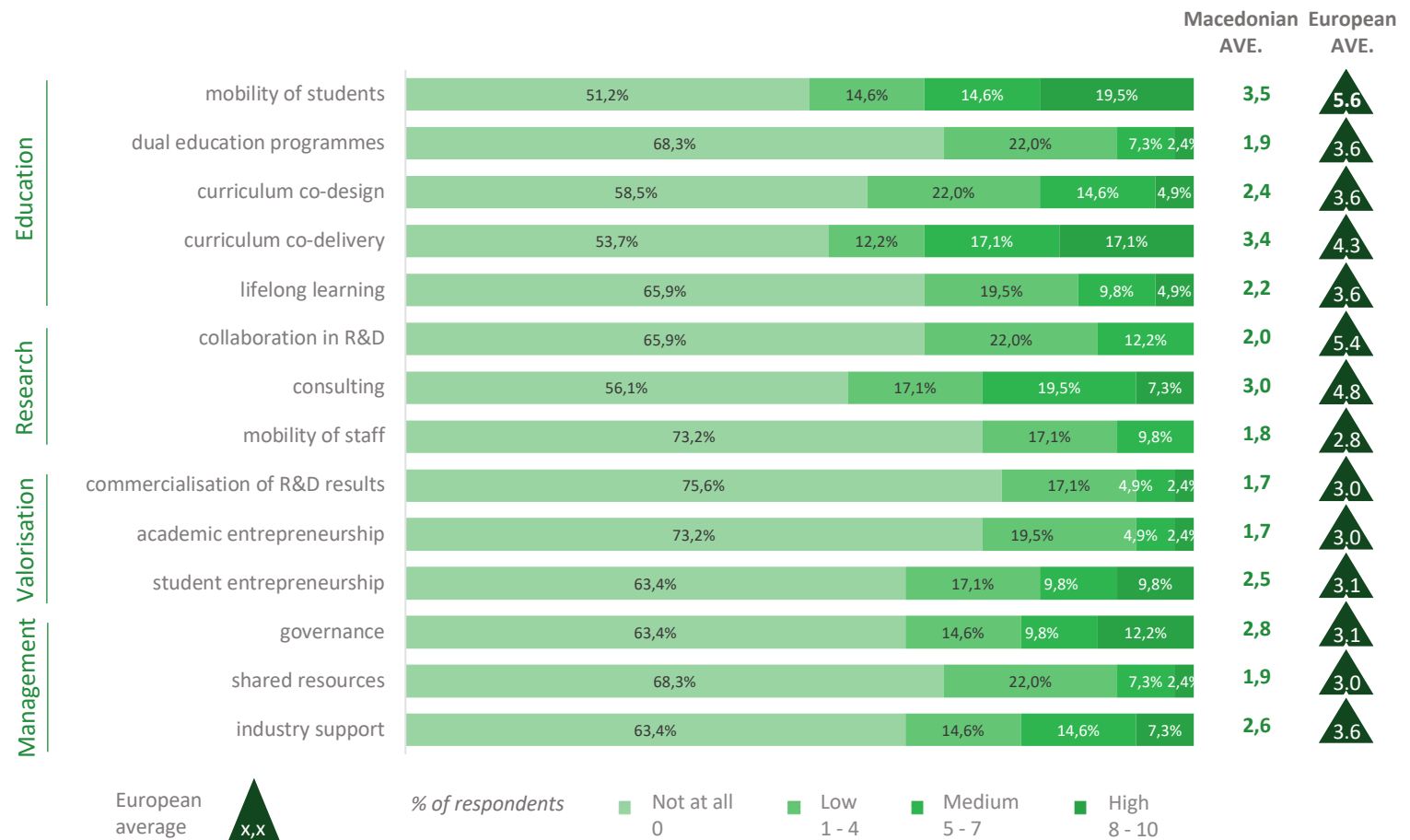
Overall, UBC activities are significantly less developed for Macedonian academics than for their European counterparts.

Macedonian academics engage with business mainly in mobility of students (3.5), curriculum co-delivery (3.4) and consulting (3.0). However, more than 50% of them do not engage in these activities at all. The further UBC education and research activities are less developed.

Overall, the development of UBC management and valorisation activities is particularly low. More than 60% of Macedonian academics are not engaged in these kind of activities at all.

The extent of development of UBC activities

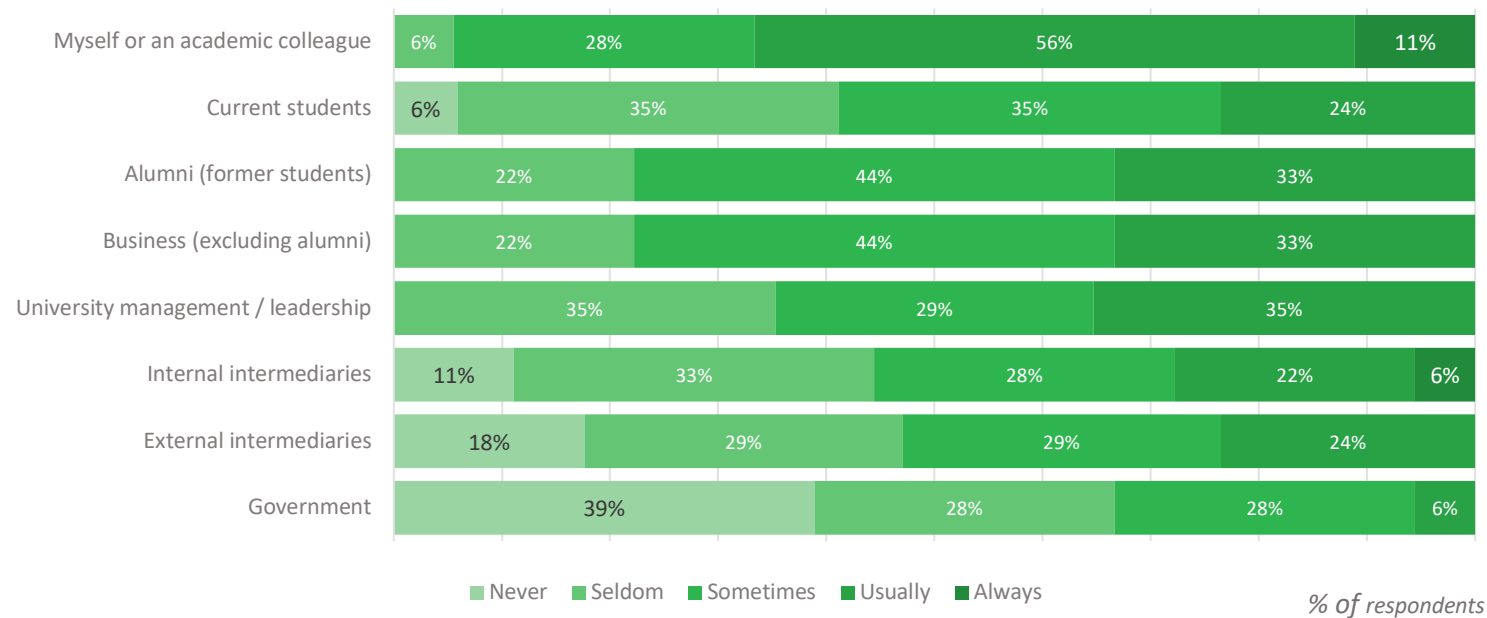
'Which UBC activities do you collaborate with businesses in?' – as answered by academics



Initiation of UBC

How UBC is initiated

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



Macedonian academics clearly see themselves as the main initiators of cooperation with businesses. Over two thirds of them (67%) state that they or their colleagues always or usually initiate UBC.

An even proportion (77%) of Macedonian academics see alumni and businesses as further stakeholder groups that usually or sometimes initiate collaborative activities.

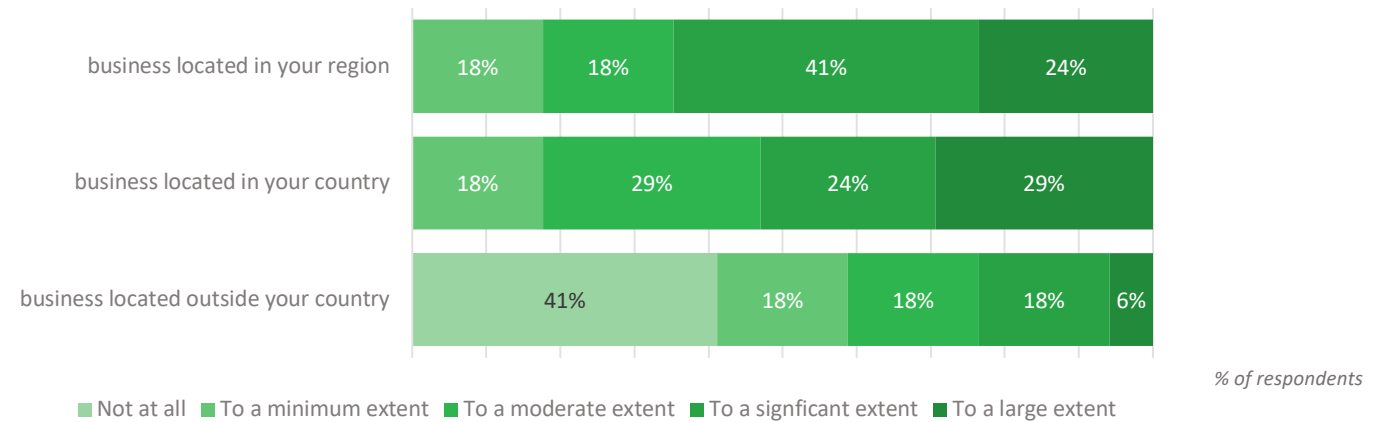
Contrary, academics perceive that government and both external and internal intermediaries are those stakeholders that less often initiate UBC.

Location of cooperating partners

The low level of collaboration of Macedonian academics with international businesses may be due to insufficient level of networking of the academics within the international scientific/research programs and projects.

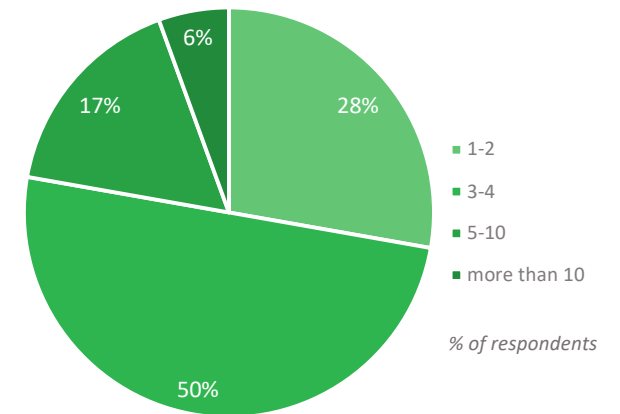
Being outside the EU, Macedonia may have little opportunities to be engaged in EU projects. But also, the initiative of Macedonian academics may well be insufficient. Structurally, teaching and academic activities are dominant when compared to applied research that is more relevant for cooperation with businesses.

Location of business partners



Macedonian academics undertake a significant or high level of cooperation with regional businesses (65%). The collaboration with national businesses is not far behind with 53%. Only 6% of academics collaborate to a large extent with international businesses and 42% do not collaborate with them at all.

Number of business partners

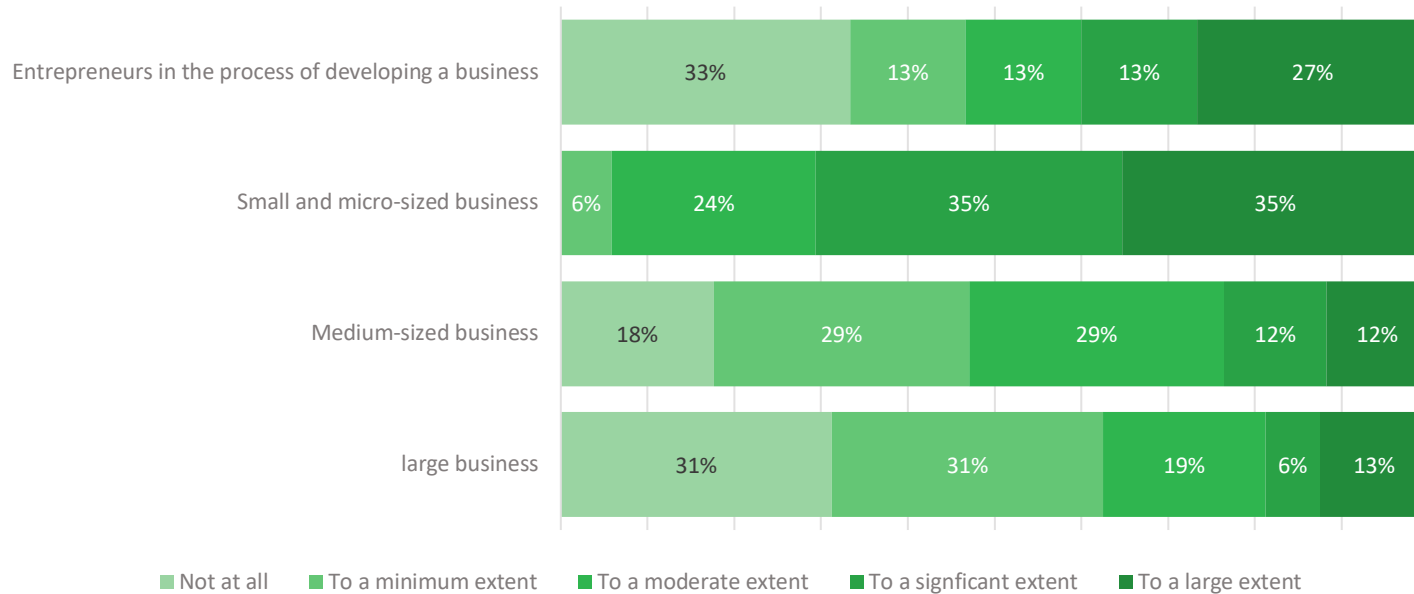


78% of Macedonian academics cooperate with 4 or less businesses. The remaining 23% have partner relations with 5 or more partners.

Size of cooperating partners

Size of cooperating partner

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



The smaller the business the more likely it is to cooperate with a Macedonian academic.

70% of cooperating academics in Macedonia engage to a significant or large extent with small and micro-sized businesses. This cooperation is reduced to 40% for entrepreneurs in the process of developing a business.

Only 12% and 13% of academics engage with medium-sized and large businesses to a large extent respectively. The reason for this limited collaboration can be explained by the higher level of internationalization for larger businesses, which ultimately means that they have wider opportunities to cooperate with foreign experts and consultants.

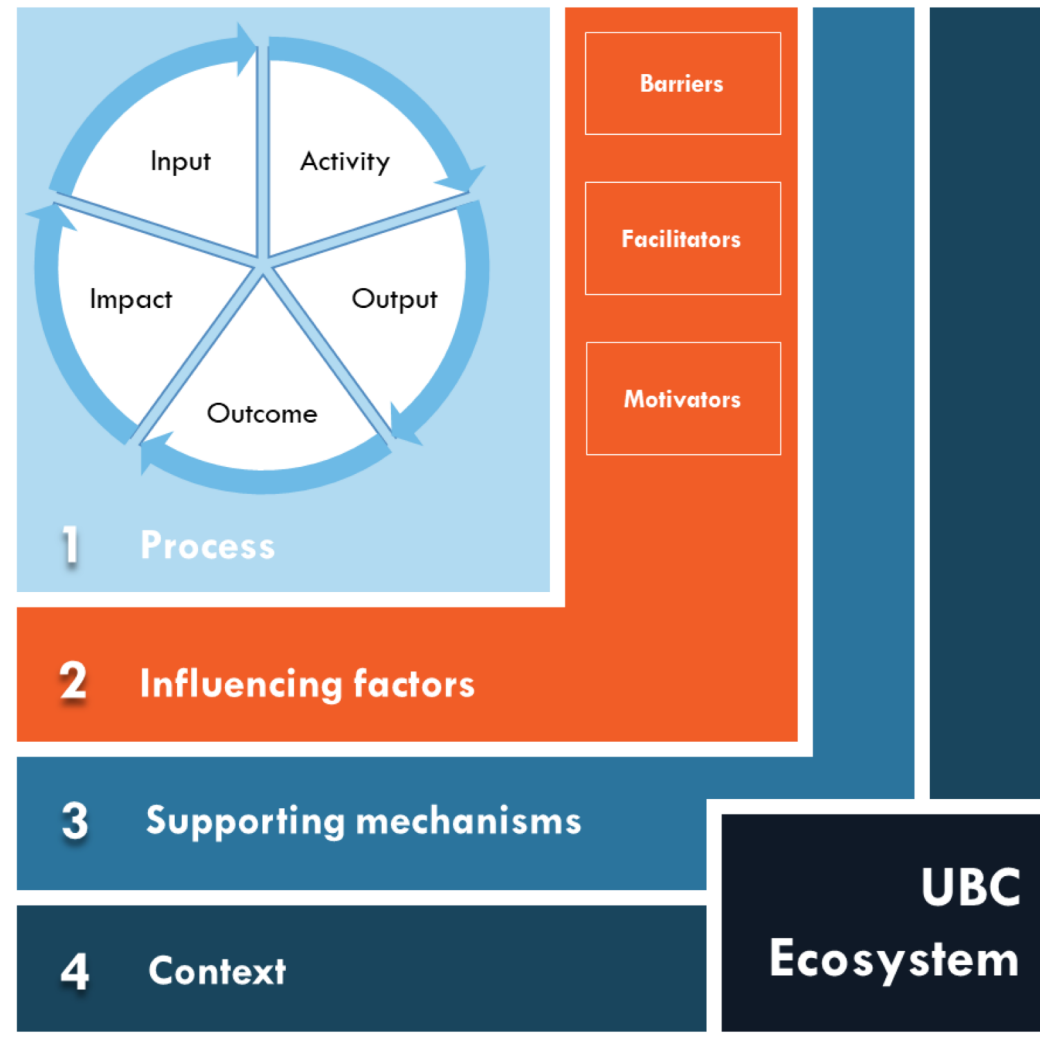
Factors influencing UBC

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.	Lack of government funding for UBC	Lack of government funding for UBC
2.	Lack of business funding for UBC	Differing motivation / values between university and business
3.	Lack of university funding for UBC	Lack of university funding for UBC
4.	Limited resources of SMEs	Limited resources of SMEs
5.	Differing motivation / values between university and business	Limited absorption capacity of business
<i>Lowest</i>	Frequent staff turnovers within my university or the business	UBC conflicts with my teaching and research responsibilities

The top five barriers, that all relate to resources and cultural issues, are very similar for both collaborating and non-collaborating academics in Macedonia.

The most hindering barrier to cooperation for both groups is the lack of government funding. Low levels of government funding for scientific and research activities, as a percentage of GDP, has been an important issue related to insufficient performance of the economy in general in terms of its innovativeness and entrepreneurial capacity. This perception is also caused by the general tendency by both academia and businesses to expect that government should be involved in all aspects of their activities.

While the lack of university funding also represents a barrier for both groups, the lack of business funding is seen as an obstacle only by collaborating academics. Additionally, the limited resources of SMEs are a major barrier for both groups.

Differing motivations are also relevant as a barrier, as businesses generally strive for short term fixes and shortcuts, while academics may be inclined to more systematic approach to issues. Applicative scientific research oriented to solving practical everyday problems doesn't have a long tradition in Macedonia.

Barriers hindering UBC

Macedonian academics perceive most barriers stronger than their European counterparts.

In Macedonia, academics are significantly more hindered than their European counterparts by the lack of funding from different sources including government, business and university.

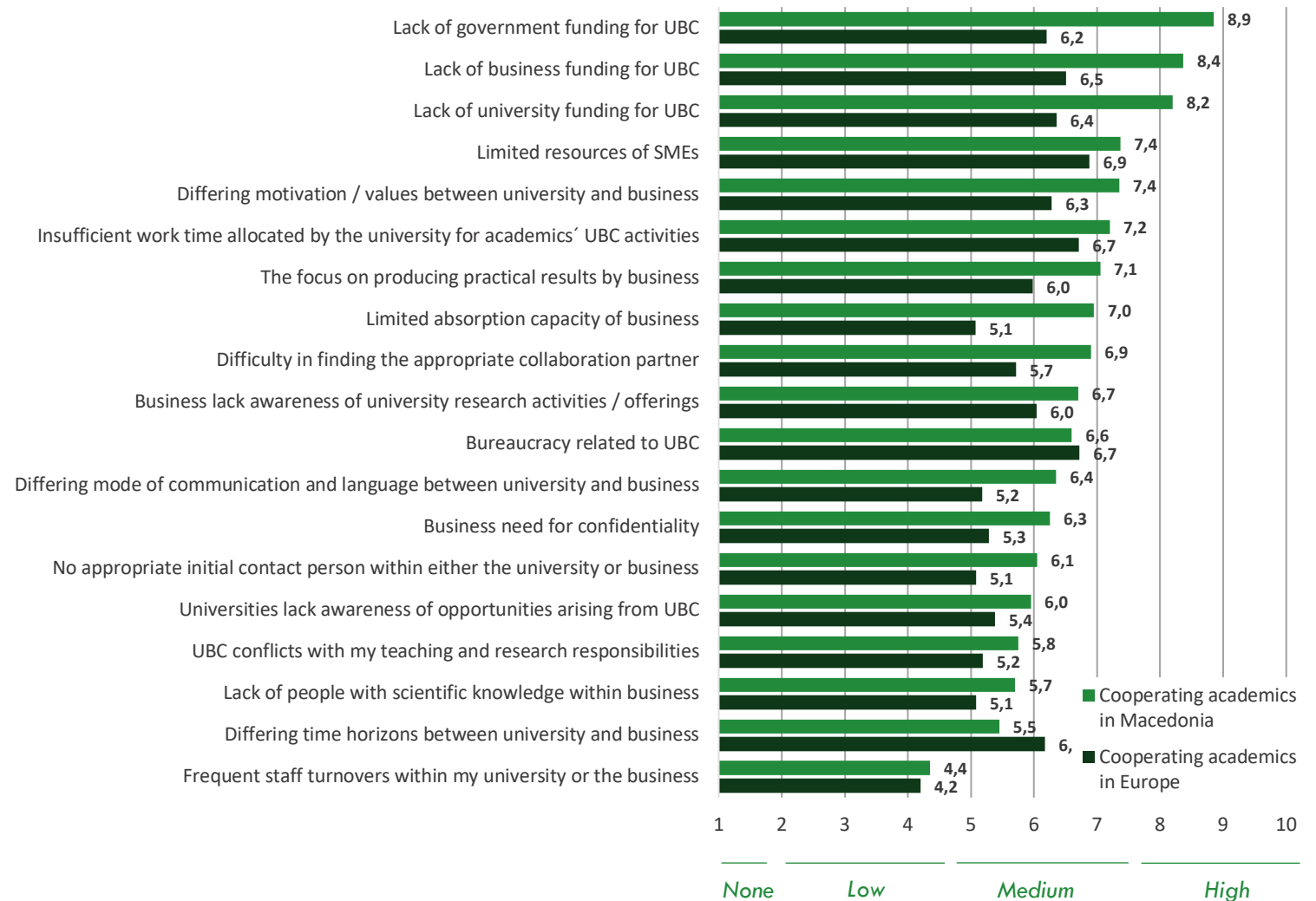
The limited absorption capacity of the business along with the difficulty in finding the appropriate partner are also significantly more inhibiting for Macedonian academics than they are for their European counterparts.

However, they are less hindered than the European academics by the differing time horizons between university and business.

Frequent staff turnovers is the weakest barrier for both groups. This can be explained by generally low mobility of the workforce in the economy and insufficient flexibility of the labour markets in Macedonia.

Barriers

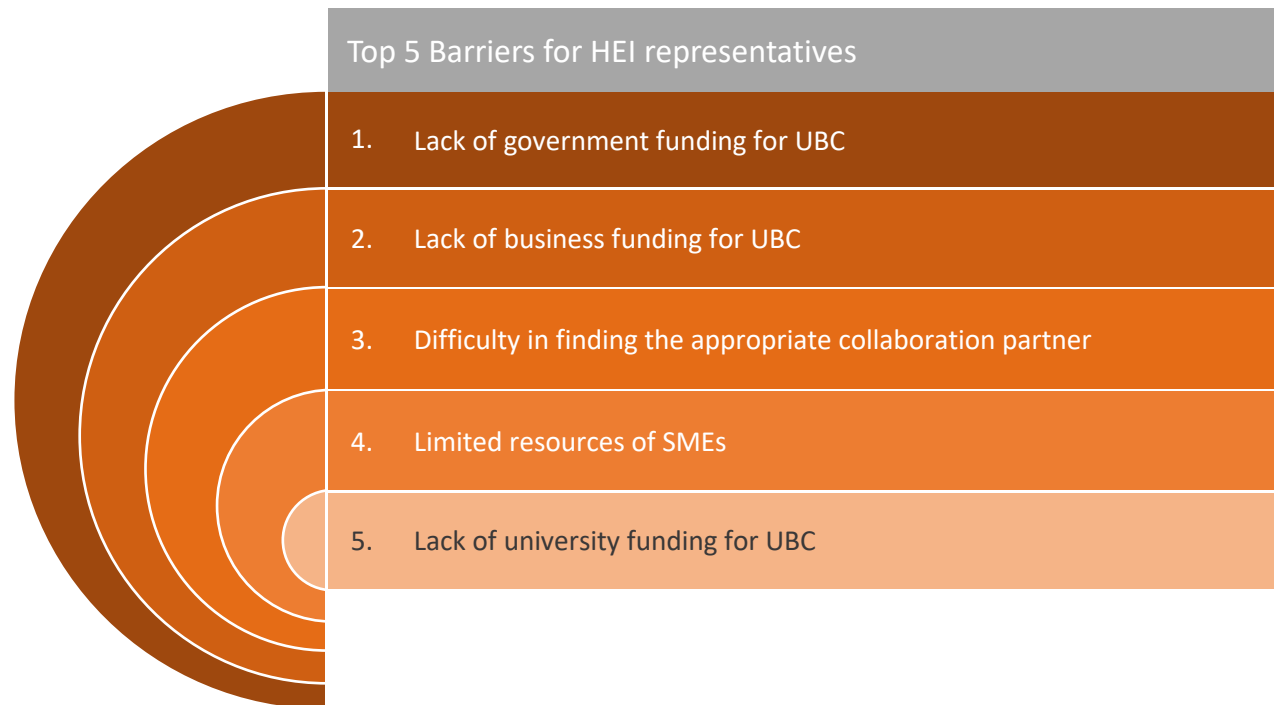
'What is inhibiting your cooperation with business?' – as answered by academics



Barriers hindering UBC

Barriers

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



Macedonian HEI representatives are inhibited to engage in UBC mostly by limited resources and funding.

Thus the lack of government and business funding are the largest barriers. This is also consistent with the perception of academics. Low levels of government funding for scientific and research activities, as a percentage of GDP, has been always an important issue related to insufficient performance of the economy in terms of its innovativeness and entrepreneurial capacity.

HEI representatives also recognise the difficulty in finding the appropriate collaboration partner as a major barrier. At the same time, SMEs limited resources and the lack of university funding can also inhibit UBC in Macedonia.

Barriers hindering UBC

Overall, most barriers are perceived similarly by Macedonian HEI representatives and their European counterparts.

Funding related factors are the most inhibiting for both groups. However, Macedonian HEI representatives perceive them considerably stronger. Contrary, they are less hindered by the lack of SMEs' resources than their European counterparts.

The business' lack of awareness about university research activities, bureaucracy and differing time horizons are also significantly less inhibiting for Macedonian HEI representatives.

Frequent staff turnovers is the weakest barrier for both groups.

Barriers

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



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

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.

The main factors that facilitate UBC for both Macedonian academics and HEI representatives are very similar.


For academics the existence of a shared goal is the most crucial factor, whereas HEI representatives perceive the interest of the university in accessing business-sector R&D facilities as the main facilitator.

The main drivers facilitating UBC focus on the relationship aspect, highlighting the importance of a shared goal, mutual commitment and a prior relation with the business partner for successful UBC.

The existence of funding to undertake UBC and the interest of business in accessing scientific knowledge are also recognised as facilitators by both groups.

Facilitators

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



	Academics cooperating	HEI representatives
1.	Existence of a shared goal	Interest of business in accessing scientific knowledge
2.	Existence of mutual commitment	Prior relation with the business partner
3.	Prior relation with the business partner	Existence of a shared goal
4.	Interest of business in accessing scientific knowledge	Existence of funding to undertake the cooperation
5.	Existence of funding to undertake the cooperation	Interest of the university in accessing business-sector R&D facilities

Drivers stimulating UBC

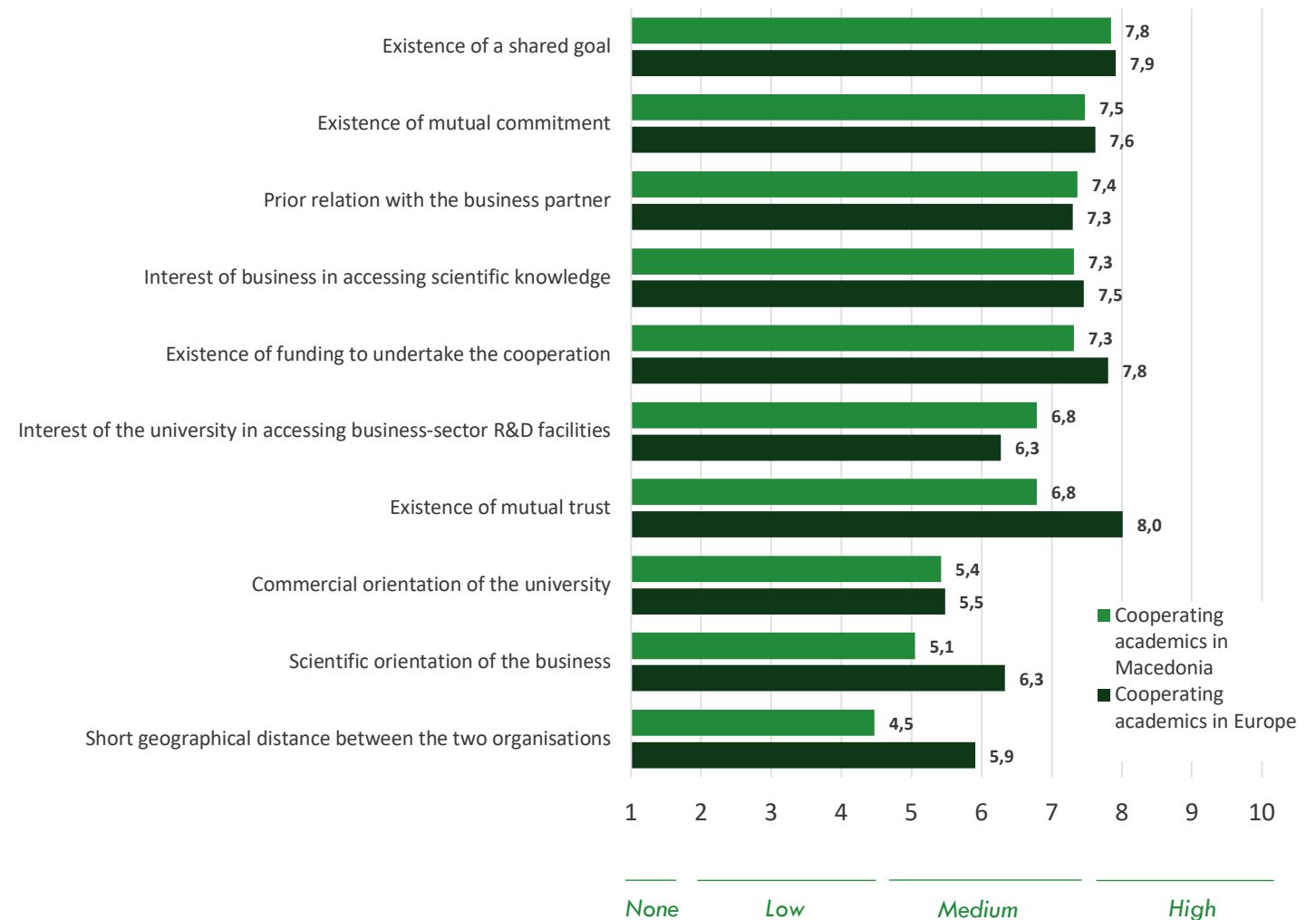
European and Macedonian perceptions of UBC facilitators are rather similar.

For both groups, the most important facilitators are related to the relationship component of UBC. The exception is however the existence of mutual trust, which is perceived significantly higher in Europe than in Macedonia.

In addition, the scientific orientation of the business along with the short geographical distance between two organisations emerge as the least strong facilitators for both, although Macedonian academics perceive them significantly lower than their European counterparts.

Facilitators

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



Drivers stimulating UBC

Facilitators

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



Macedonian HEI representatives and their European counterparts perceive the facilitators rather differently.

For Macedonian HEI representatives the main drivers relate to the business' interest in accessing scientific knowledge and relationship factors facilitating UBC including shared goal and prior relation. Yet, compared to European average, all these facilitators are perceived lower by Macedonian HEI representatives.

Furthermore, the existence of mutual commitment and trust play for Macedonian HEI representatives less significant role than for their European counterparts, who perceive these factors as the main UBC facilitators.

Short geographical distance between two organisations emerge as the least strong facilitator for both groups.

Drivers stimulating UBC

Motivators of Macedonian academics who already cooperate with businesses and motivators of non-cooperating academics have certain discrepancies.

While cooperating academics highlight motivations focused on their own research and teaching, the academics not engaged in UBC are more driven by the benefits that other stakeholders including graduates, university and society can get from UBC.

Motivators

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

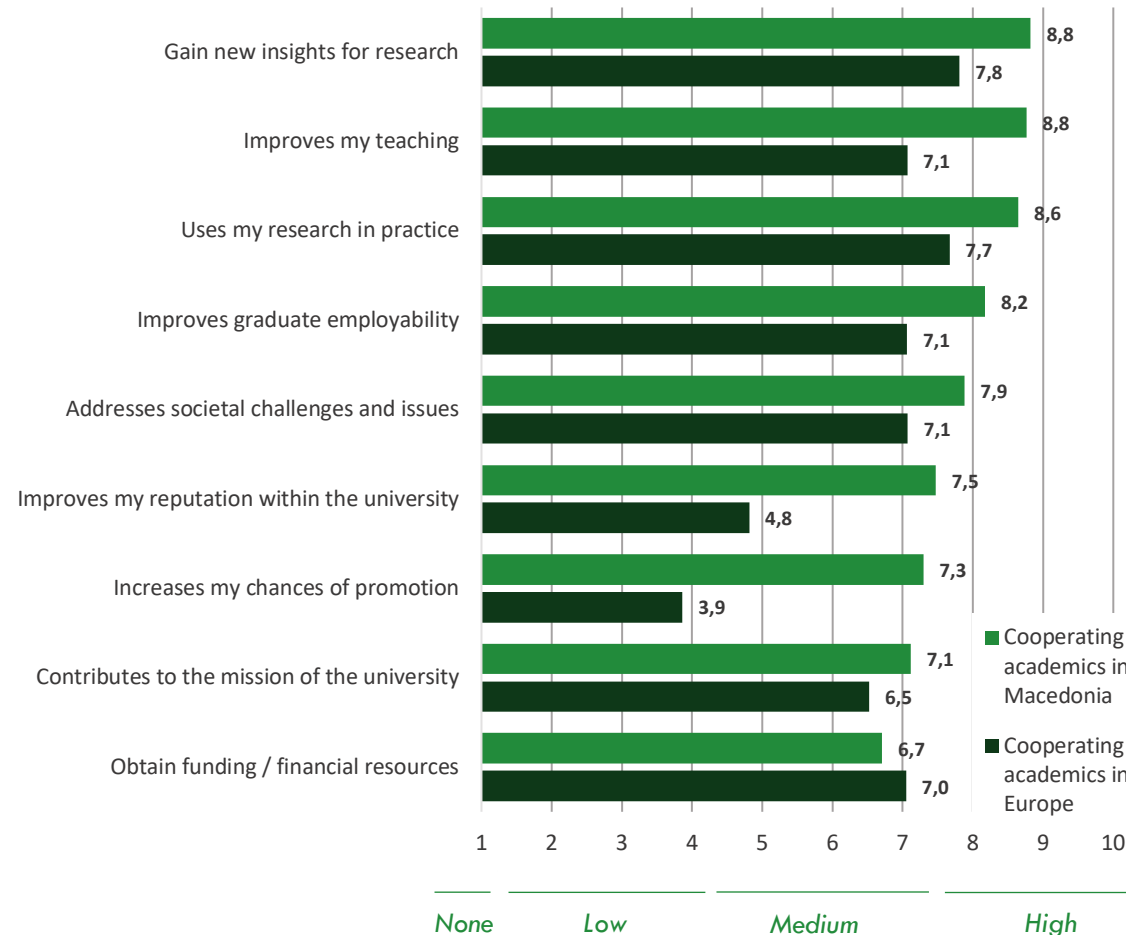


	Academics who cooperate	Academics who <u>do not</u> cooperate
1.	Gain new insights for research	Improves graduate employability
2.	Improves my teaching	Contributes to the mission of the university
3.	Uses my research in practice	Addresses societal challenges and issues
4.	Improves graduate employability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

Drivers stimulating UBC

Motivators

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



Macedonian academics rate most UBC motivators significantly higher than their European counterparts.

Yet, their perspectives in respect to the highest motivators align. Thus both groups are mostly driven by the willingness to improve research, teaching and graduate employability.

Notably, while for European academics promotion and reputation related motivators are the weakest drivers, for their Macedonian counterparts those are the motivators related to the funding and mission of the university.

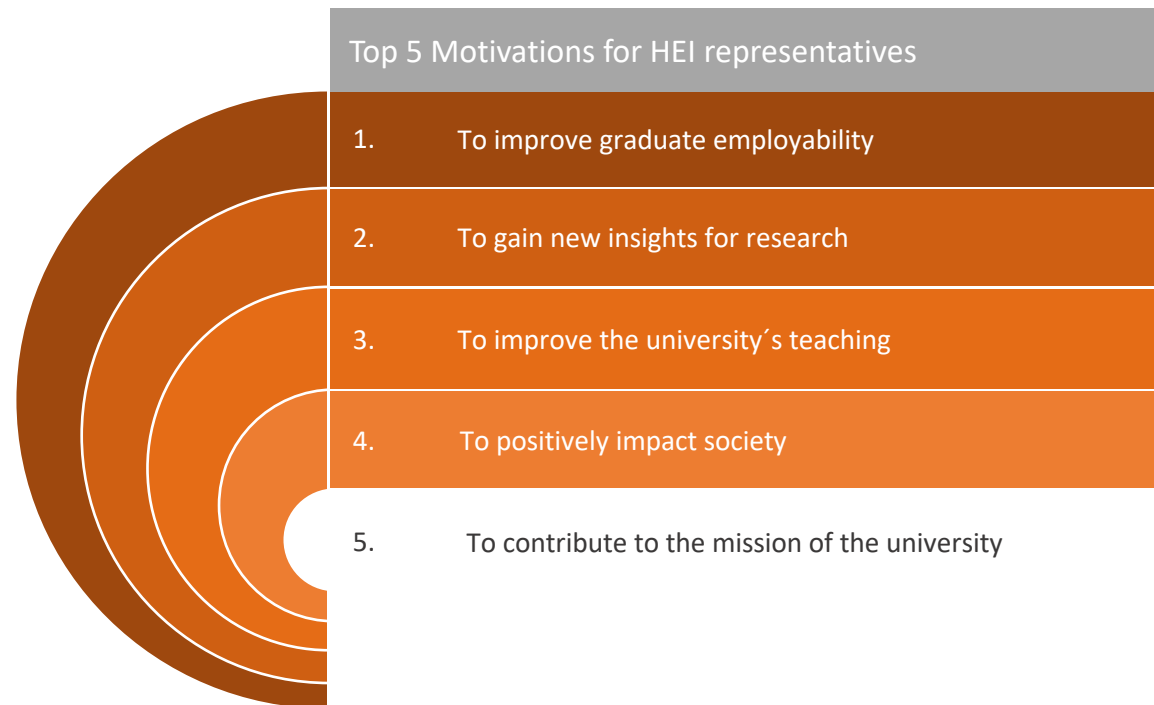
Drivers stimulating UBC

Macedonian HEI representatives highlight the motivation to improve graduate employability.

Research and teaching related motivations along with the willingness to positively impact society and contribute to the university's mission are also perceived as important.

Motivators

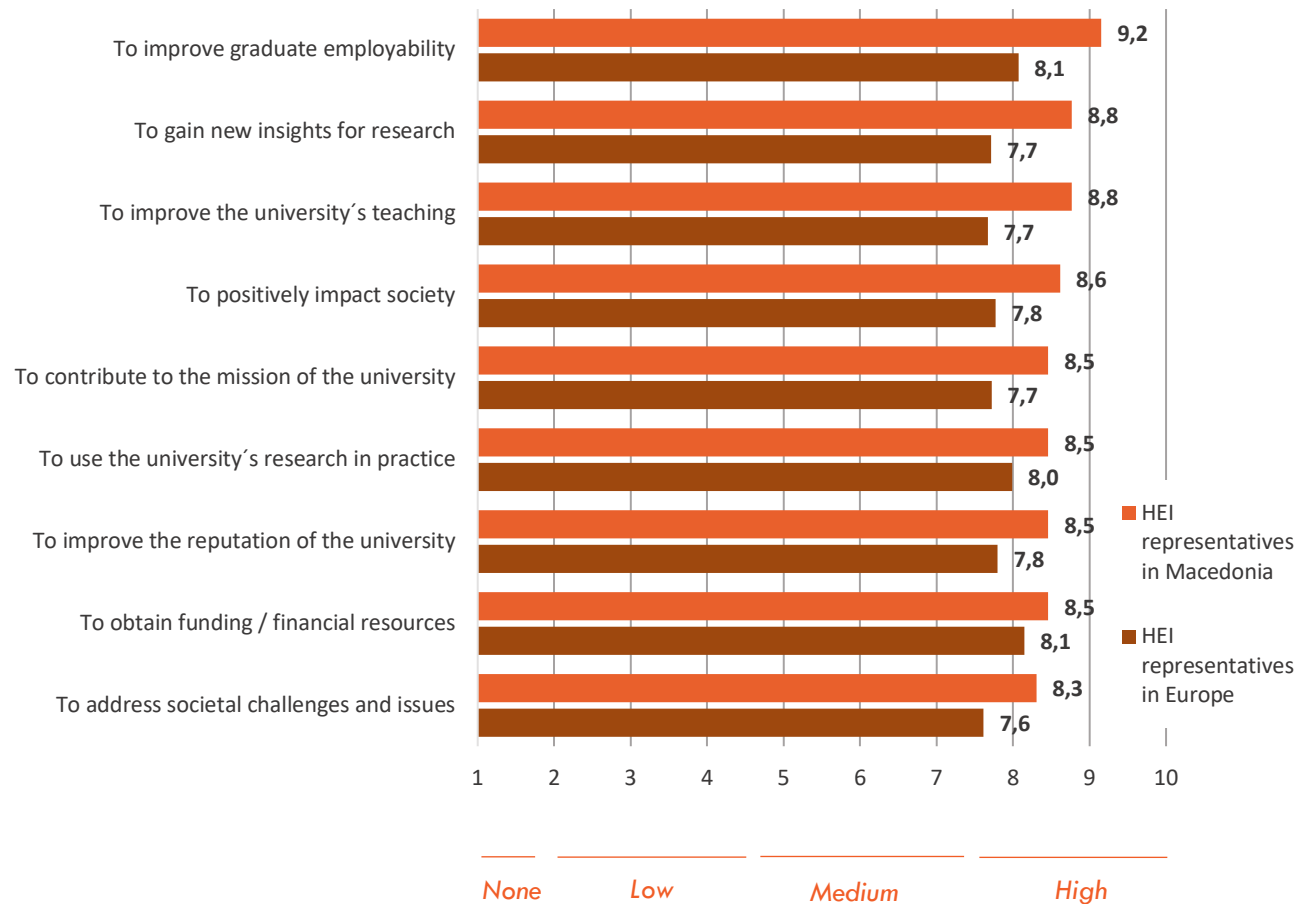
'What motivates your HEI to cooperate with business?'- As answered by HEI representatives



Drivers stimulating UBC

Motivators

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



Macedonian HEI representatives perceive all motivators higher than the European HEI representatives.

Notably, while the motivation related to funding was rated almost the lowest by Macedonian HEI representatives, their European counterparts highlight it as their strongest motivation to cooperate with business.

Overall for both, European and Macedonian HEI representatives, all motivators were ranked of nearly equal importance (from 7.6 to 9.2), which ultimately means that all these motives have a potential of stimulating UBC for universities

Benefits of UBC

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

Students and universities are perceived by both groups as the stakeholder groups who benefit the most from UBC. They are followed by society and businesses.

Interestingly, academics see for themselves little benefits from collaboration with businesses. Their perception fully aligns with the view of HEI representatives in this respect.

The Macedonian government is believed by both groups to gain the least benefits from UBC.


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

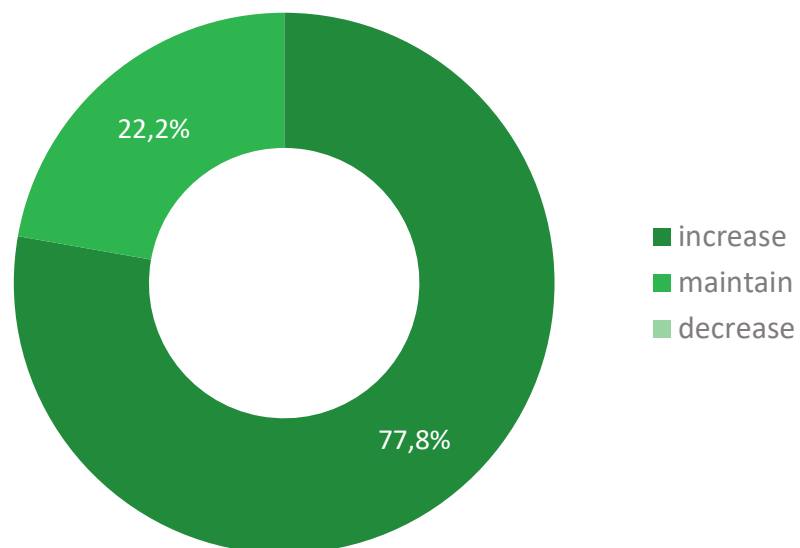


	Academics	HEI representatives
1.	Universities	Students
2.	Students	Universities
3.	Society	Society
4.	Businesses	Businesses
5.	Academics	Academics
6.	Government / public authorities	Government / public authorities

Future intentions

Future UBC intentions – Macedonia

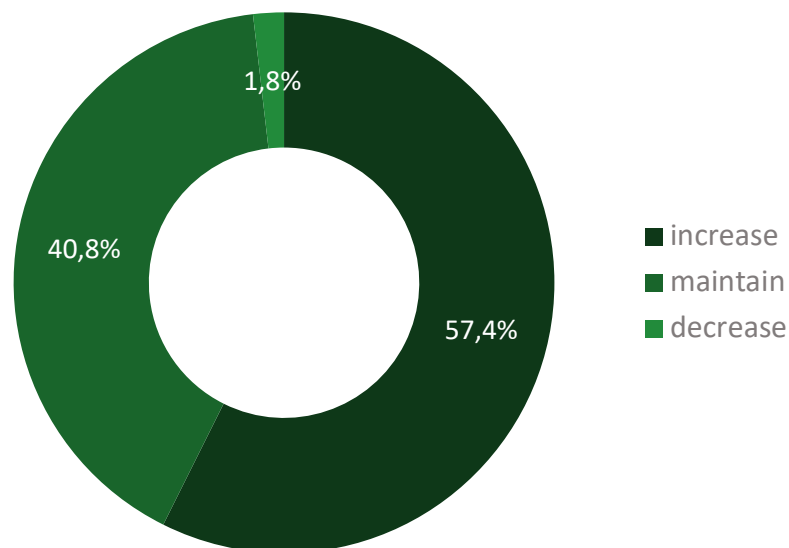
As answered by Macedonian academics



Macedonian academics show a very strong commitment to UBC. 100% of them expect to maintain or increase their UBC activities.

Future UBC intentions – EUROPE

As answered by European academics



Academics in Europe also show a strong commitment to increasing UBC activities. 57.4% of cooperating academics expect to increase their cooperation and only 1.8% plan to decrease their collaborative activities with businesses.

Willingness to recommend UBC

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

Macedonian academics are significantly more satisfied with UBC in research than their European counterparts (NPS=56). While 69% of them will promote it positively, only 13% would do it negatively.

Similarly, they are also significantly more satisfied than the European academics in education-related UBC (NPS = 39 for Macedonian and -14 for European academics).

Overall the willingness of Macedonian academics to recommend UBC is higher for collaboration in research.

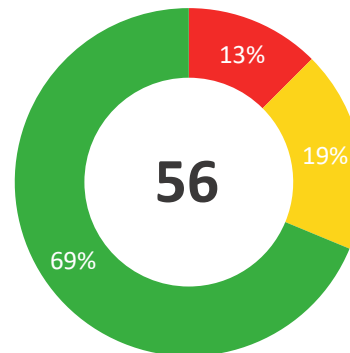
Willingness to recommend to an academic colleague cooperation with business in R&D and education

As answered by academics

	Detractors	Passives	Promoters	Net promotor score
Academics cooperating in E&T	17%	28%	56%	39
Academics cooperating in R&D	13%	19%	69%	56

Satisfaction in cooperation with businesses (net promotor score)

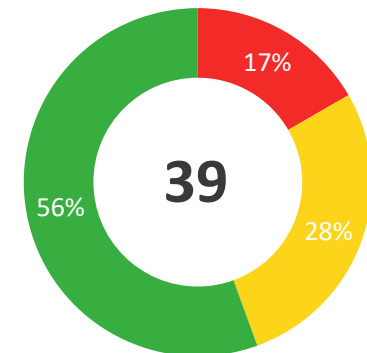
Academics cooperating in research



■ Detractors ■ Passives ■ Promoters

European academics' NPS: 17

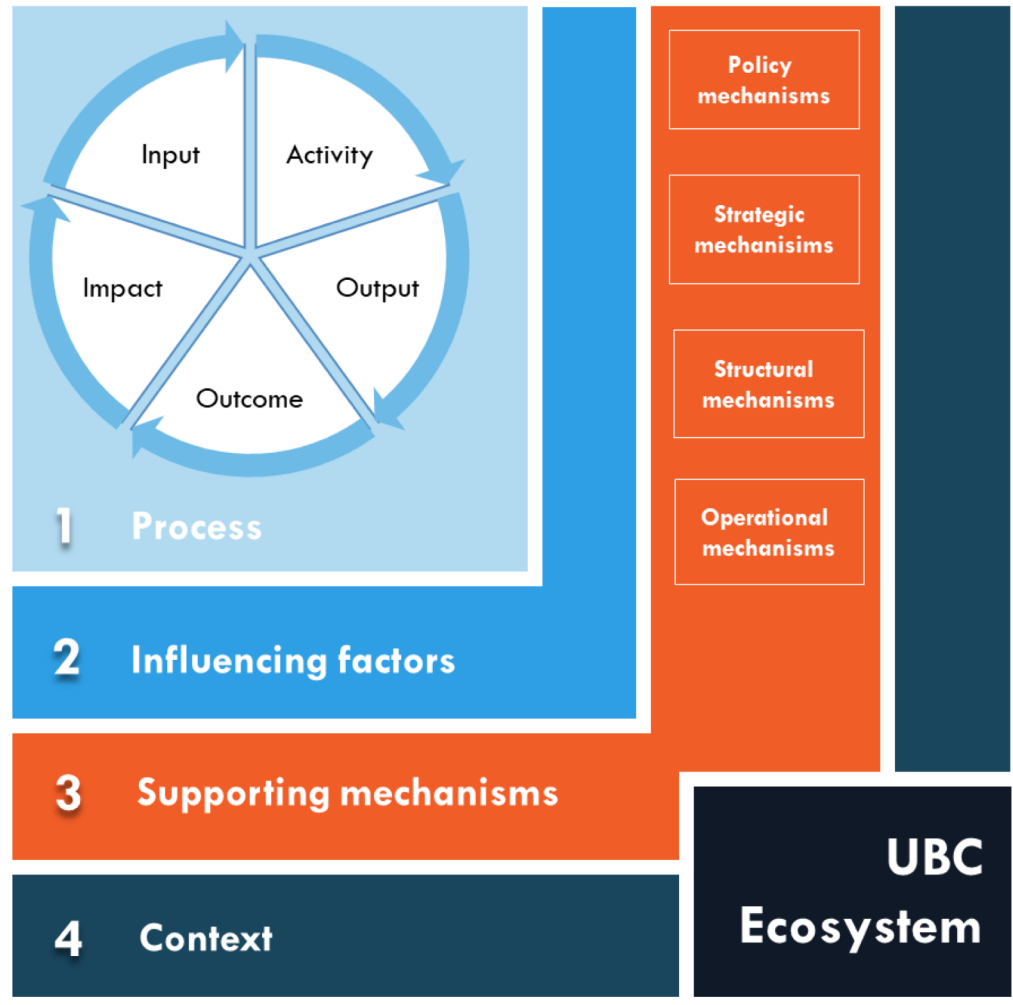
Academics cooperating in education



■ Detractors ■ Passives ■ Promoters

European academics' NPS: -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

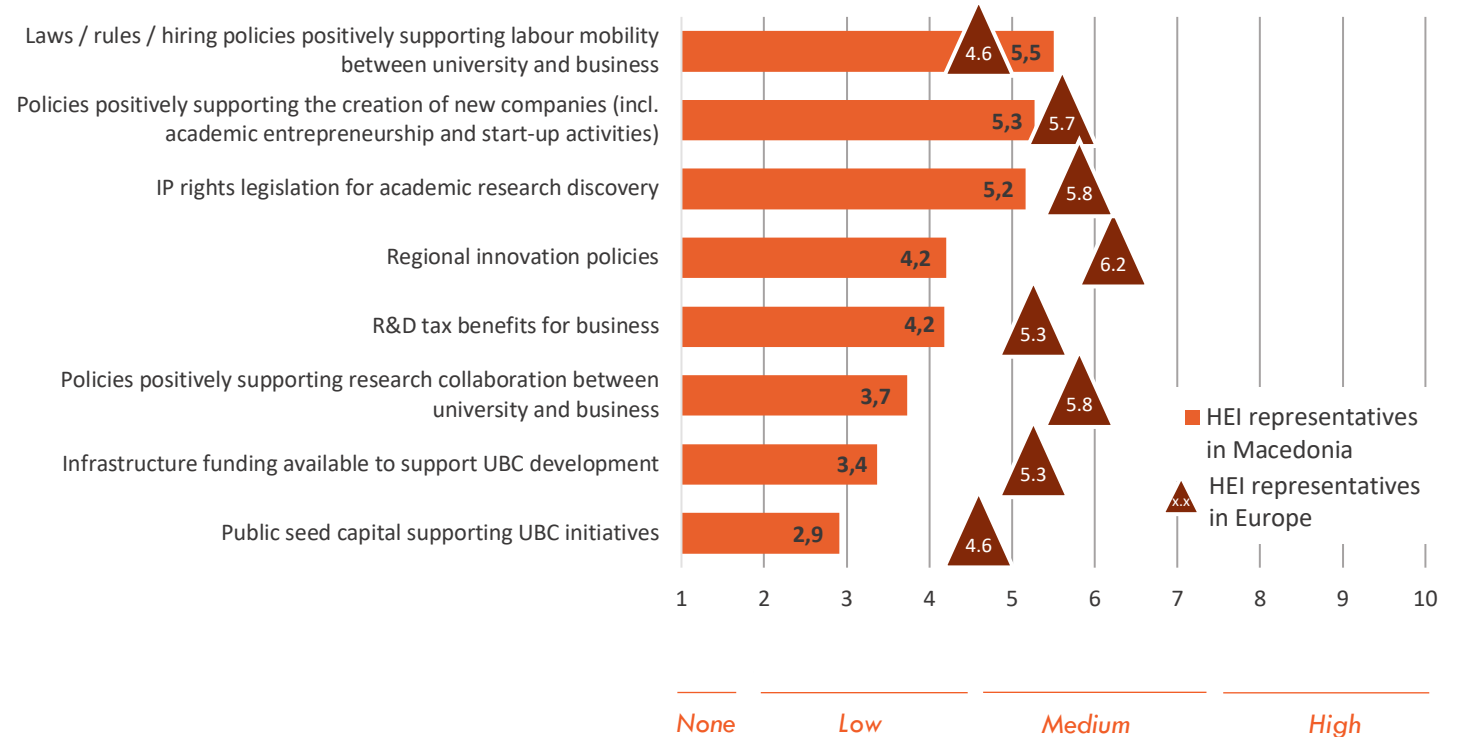
Macedonian HEI representatives perceive policy mechanisms to be developed to a medium-low level. These perceptions are also lower than the perceptions of their European counterparts.

Policies supporting labour mobility are indicated as the most developed supporting mechanism (5.5) and the only one above the EU average.

Policies supporting research UBC, infrastructure funding and public seed capital supporting UBC initiatives are the least developed mechanisms and are also significantly lower than the EU average.

Policy mechanisms

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



Supporting mechanisms for UBC

Strategic mechanisms

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



Overall, the development of the strategic mechanisms in Macedonian and European HEIs is similar.

The most developed mechanism is a documented commitment of the university top-level management (7.8). This strategy is followed by the practice of recruiting business professionals into knowledge transfer area (7.2), which is significantly less developed in European HEIs (5.2).

The least developed mechanisms are related to the reduction of teaching time (4.6) and dedication of resources to support UBC.

Overall the paper strategies are more developed than implementation strategies, showing the official commitment of Macedonian HEIs to UBC about the actual dedication of resources.

Supporting mechanisms for UBC

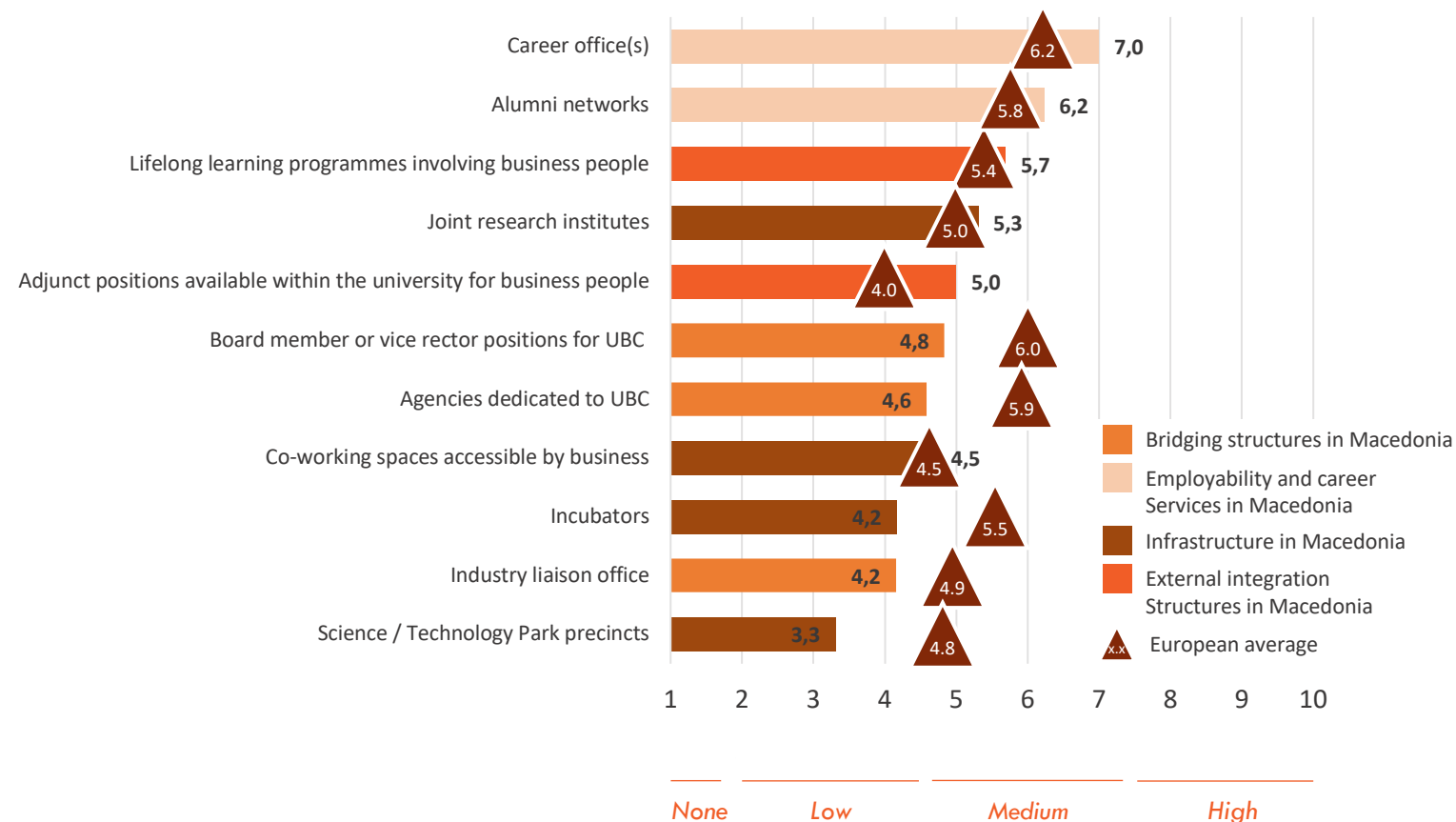
Overall, the development of most structural mechanisms is lower in Macedonian HEIs than in European HEIs.

European and Macedonian HEI representatives indicated the same top two structural mechanisms, both related to employability and career services. They are career offices and alumni networks, which are slightly more developed in Macedonian HEIs.

Bridging structures and infrastructure related mechanisms are significantly less developed in Macedonia than in Europe.

Structural mechanisms

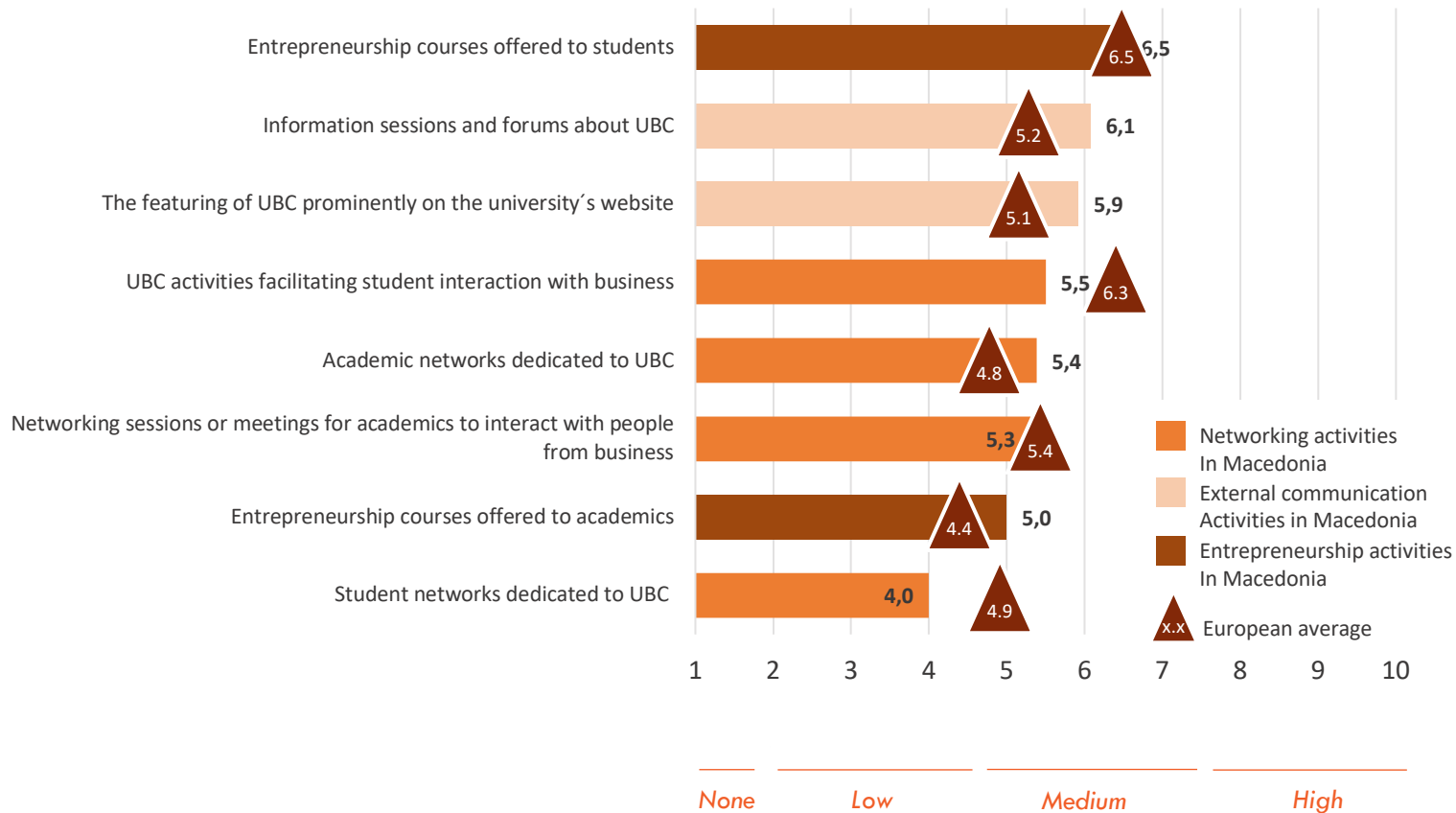
'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives



Supporting mechanisms for UBC

Operational mechanisms

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



Overall, the perspectives of Macedonian and European HEI representatives align in respect to the development of operational mechanisms supporting UBC.

Entrepreneurship courses offered to students and information sessions about UBC are the most developed mechanisms in Macedonian HEIs.

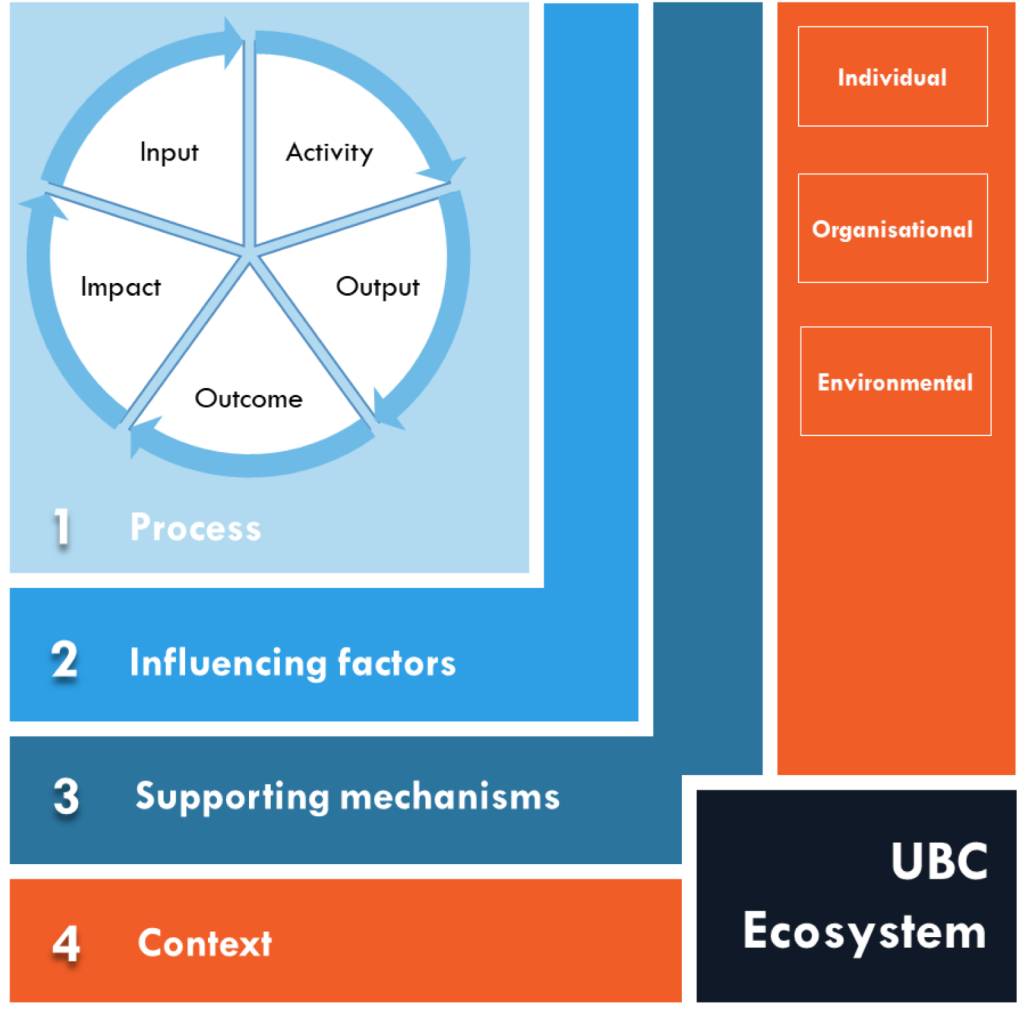
Notably external communication activities are more developed in Macedonian HEIs than in European HEIs. Contrary, compared to the European average, networking activities are less developed in Macedonian HEIs.

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 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.).

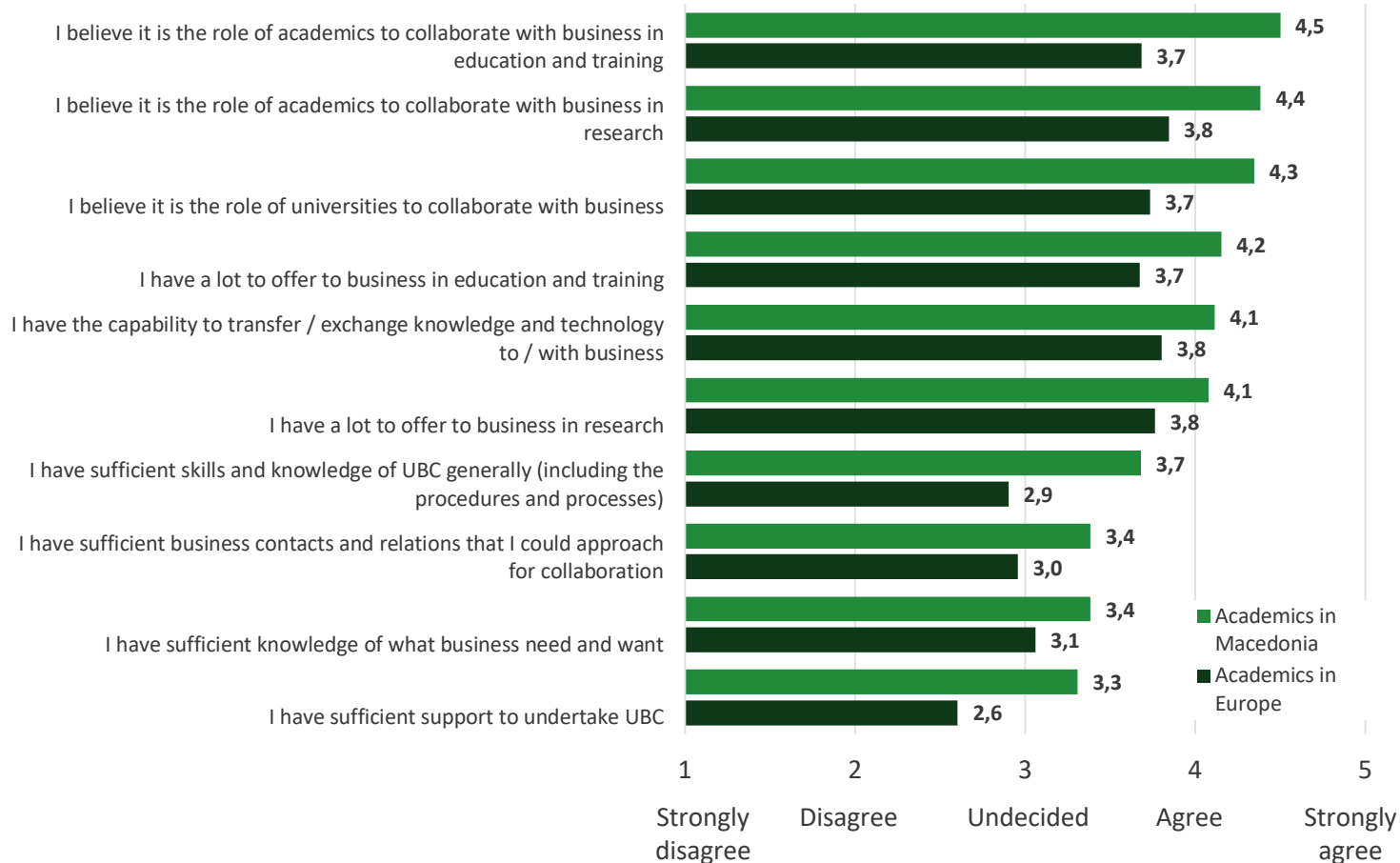
This section outlines how some contextual factors influence UBC in the country.



UBC capabilities

Capabilities for UBC

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



Macedonian academics identified moderate capabilities and beliefs about UBC. For all of them they have a more positive attitude than their European counterparts.

Macedonian academics believe that is their and universities' role to collaborate with businesses in both education (4.5) and research (4.4).

Like their European counterparts, Macedonian academics perceive they have insufficient business contacts (3.4), knowledge of what businesses need and want (3.4) and general support (3.3) to undertake UBC.

Context

Macedonian and European academics perceive the contextual factors differently.

Overall, Macedonian academics perceive they have stronger educational and research profile.

Both groups have a positive attitude towards UBC (4.3 and 4.5).

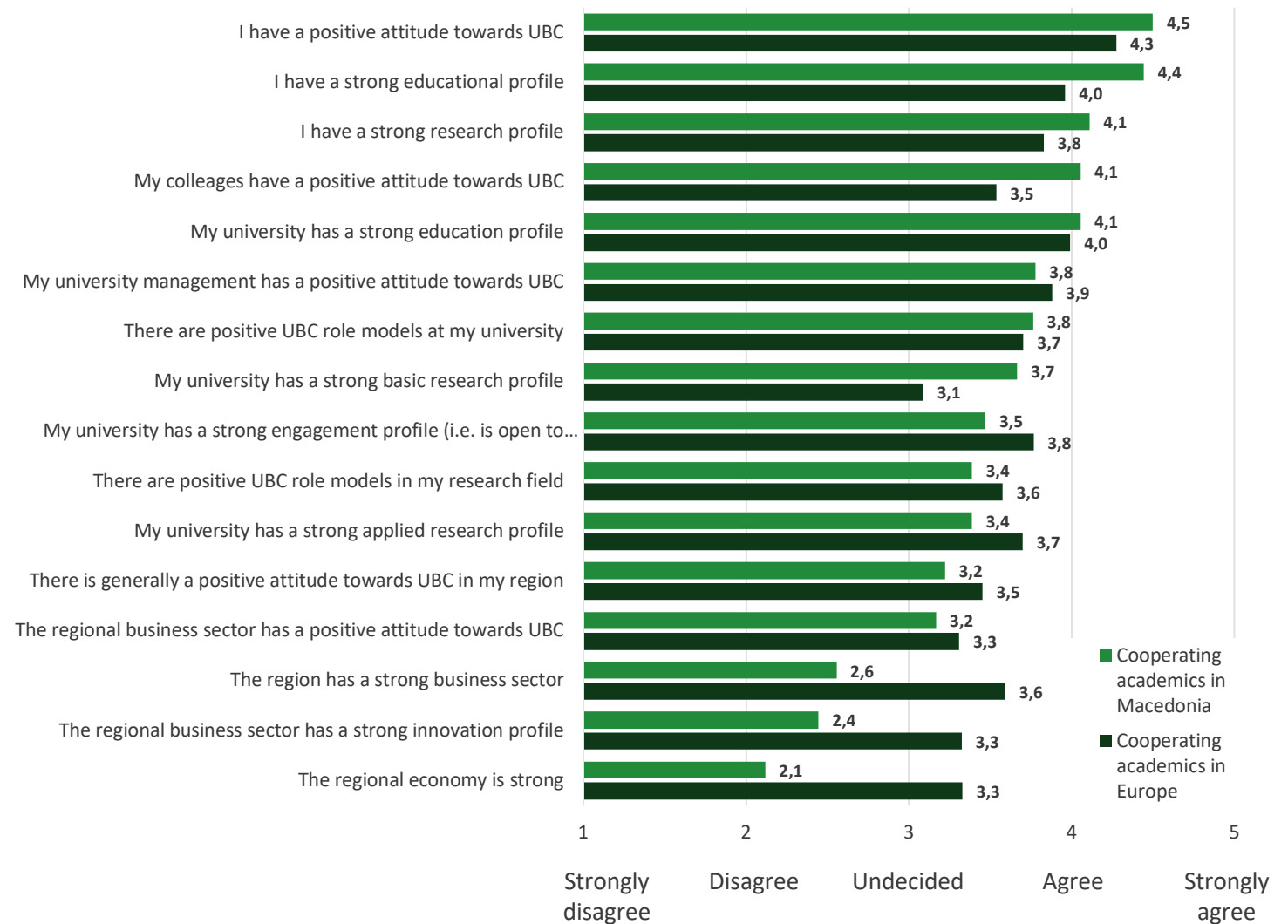
Notably, Macedonian academics perceive a more positive attitude of their colleagues towards UBC.

As for their HEIs and regions, their attitude is less positive compared to the European average.

European academics perceive their regional economy, business sector and innovation profile significantly stronger than Macedonian academics.

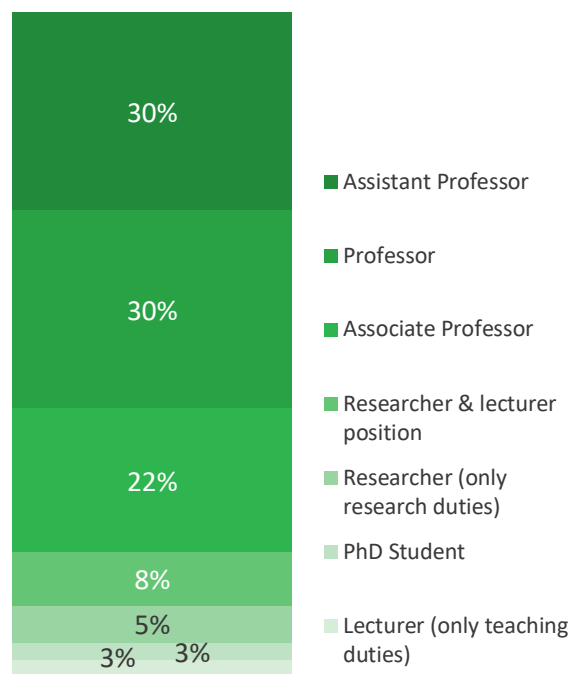
Contextual factors affecting UBC

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



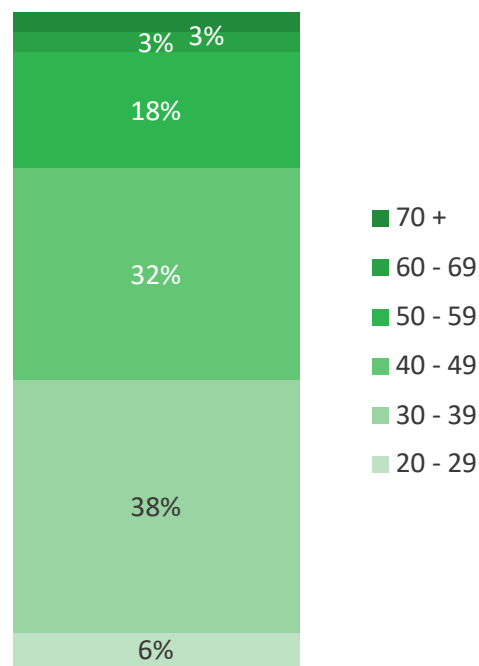
Respondent profile – academics

Position of respondent



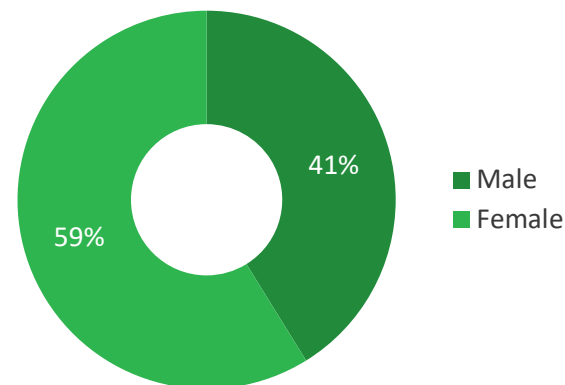
Assistant professors and professors comprise the two largest groups (30% each), followed by associate professors (22%) and researchers and lecturers (8%). The remaining academics identified themselves as researchers, PhD students and lecturers.

Age of respondents



38% of academics in the Macedonian sample are in their thirties. A third of the academics (32%) are aged 40-49 and 18% are aged 50-59. 6% of academics are older than 60, and the remaining 6% are younger than 30

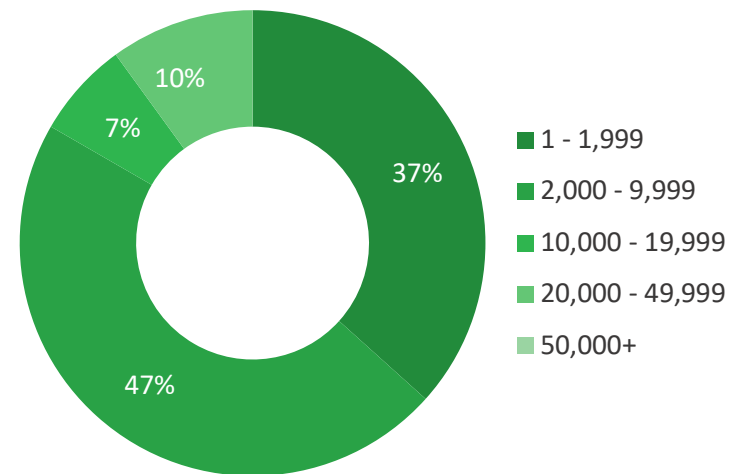
Gender of respondents



The gender distribution in the academic sample in Macedonia is skewed towards female respondents, with 59% of respondents.

Respondent profile – academics

Number of students of the HEI

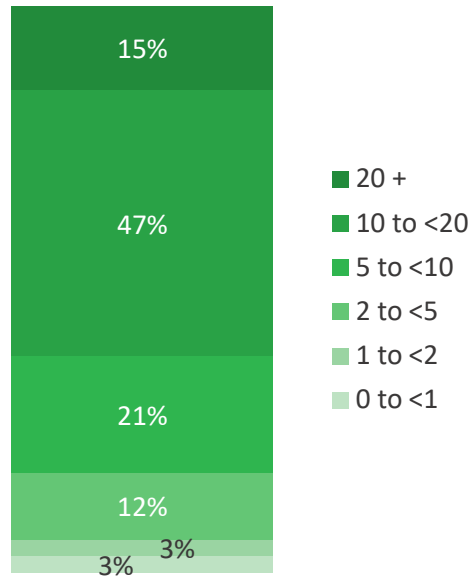


Sample Size	
Macedonian Academics	n=41
European Academics	n=10.836
Macedonian HEI representatives	n=14
European HEI representatives	n=3.482

Almost half of the Macedonian academics (47%) in the sample work for small HEIs (2,000-9,999 students) and 37% of them work for very small HEIs (under 1,999 students). Medium-large HEIs (20,000-49,999 students) are represented by 10% of respondents. Only 7% of the academics work at medium-sized HEIs (10,000-19,999 students).

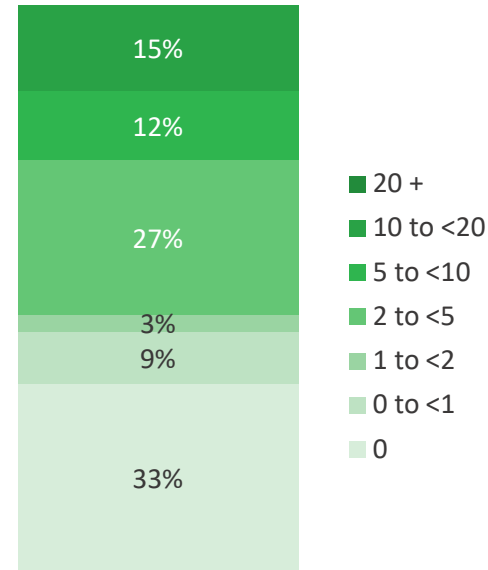
Respondent profile – academics

Years working in university



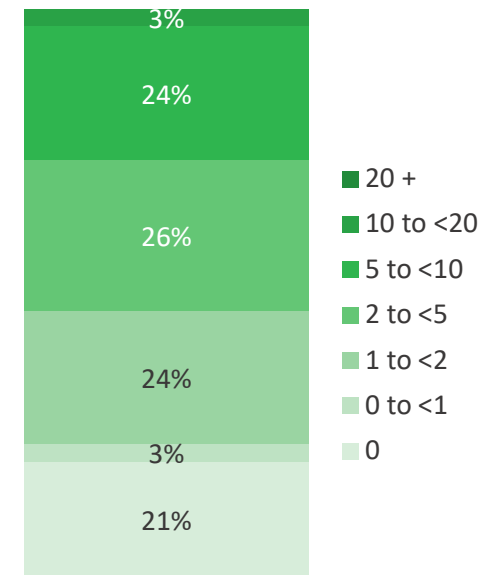
Most academic respondents have worked in academia for several years. Almost two thirds (62%) have worked in academia for over 10 years. 21% have 5-10 years of experience and 12% have worked in academic for 2-5 years. Only 6% of the academics have less than 2 years of experience.

Years working in business



Academic respondents are experienced in businesses. Over two thirds (67%) of the Macedonian academic respondents have worked in industry before. An even proportion (27%) of them have 2 to 5 years and 5 to 20 years of experience. Only 12% have worked in business for less than 2 years.

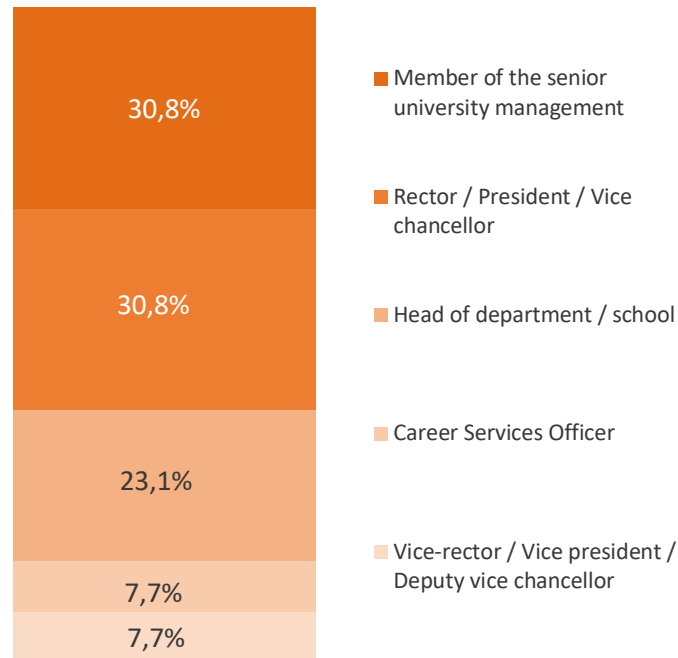
Years involved in UBC whilst working at a university or business



Most academic respondents in Macedonia have UBC experience. Although only 3% have been involved in UBC for over 10 years, 50% have 5 to 20 years of experience and 27% have been collaborating for 1 to 5 years of experience. 21% of academics in the sample have never engaged in UBC.

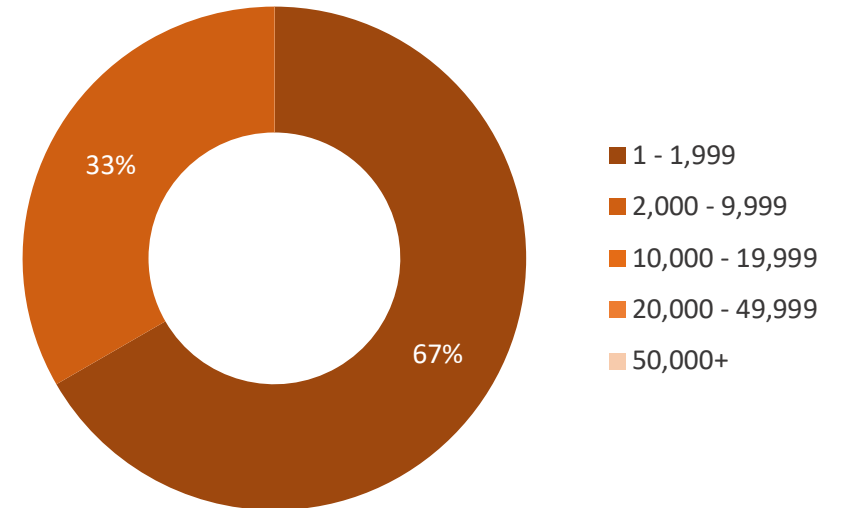
Respondent profile – HEI representatives

Position of respondent



Macedonian HEI representatives hold a variety of roles. An even proportion (30.8%) of them are members of the senior university management and rectors or presidents. 23% of the HEI representatives in the sample identified themselves as heads of department/school. The smallest groups are represented by career services officers and vice-rectors or vice-presidents (each 7.7%).

Number of students of the HEI



100% of HEI representatives in the Macedonian sample work for small HEIs (under 9,999 students), from whom 67% work for very small HEIs (under 1,999 students).

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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