



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

State of University- Business Cooperation

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University Perspective

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



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

Partners



Authors: María Paula Troutt, Hacer Tercanli, Jóhanna Vigdís Guðmundsdóttir, Todd Davey, Victoria Galán-Muros, Arno Meerman, Balzhan Orazbayeva 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 provides the findings of a study on university-business cooperation (UBC) in Iceland 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, with the majority of respondents currently cooperating with businesses planning to increase their cooperation in the future. In this sense Iceland proves to be an attractive country for UBC.

Yet, currently UBC in Iceland is considerably less developed compared to the European average. There is significant room for improvement, specifically in supporting academics in their UBC efforts, including the provision of additional financial resources, fostering the enhancement of UBC infrastructure, and the development of incentive and performance measurement systems for academics engaging in UBC.

About the study

The results presented in this report reflect the perceptions of academics, HEI managers and KTPs in Iceland 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 36 Icelandic responses. The study measured the perceptions of respondents with respect to their cooperation efforts, barriers, drivers, supporting mechanisms and perceived capabilities.

University-business cooperation

Icelandic academics responding to this survey are involved in a variety of different cooperation types, with consulting, curriculum co-delivery, joint R&D and student mobility emerging as the most developed UBC activities.

The development of management and valorisation activities is low as over 60% of Icelandic academics are not engaged in any of them at all.

Lack of resources hinders UBC

Icelandic HEI respondents are considerably hindered by the lack of government, university and business funding and the limited resources of SMEs. The business lack of awareness of university research activities is also perceived as a hindrance for UBC.

Relationship is key

Despite the lack of funding acting as the biggest barrier, the main facilitator for HEI respondents relate to the relationship aspect of UBC, highlighting the importance of trust, a prior relationship with the business partner, mutual commitment and a shared goal towards UBC.

Relationships facilitate and thus drive cooperation in Iceland. This ultimately means that any effort dedicated to enable and increase cooperation between businesses and universities should start with and focus on relationship development as the main success factor.

NOTE: This report provides a 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.

Society and research matter

Icelandic HEI representatives are motivated to cooperate with businesses mainly to positively impact society and address societal challenges. They are also driven by the possibility to enhance the university's research and teaching.

Strategy first

The development of most supporting mechanisms for UBC is low in Iceland.

High-level strategic mechanisms such as top-level management commitment for UBC and a documented mission/vision embracing UBC are perceived as the most developed. Yet, specific incentive systems, the integration of UBC in academic performance assessment and the reduction in teaching time in exchange for extended cooperation emerge are poorly developed, which shows the formal commitment of Icelandic HEIs to UBC above the actual dedication of resources.

Most highly developed structural mechanisms in the given sample include lifelong learning programmes involving business people and adjunct positions available within universities for business people. Their level of development is slightly above the European average.

However, the development of the further structural supporting mechanisms is low and the development gap when compared to the European average is ample.

When examining the development of specific activities, a strong focus on students emerges, with the highest development reported in relation to student entrepreneurship courses, and UBC activities facilitating student interaction with business.

Policy mechanisms are underdeveloped in Iceland, especially the provision of public seed capital for UBC and the existence of hiring procedures supporting the labour mobility between universities and business.

Positive attitude towards UBC

Icelandic HEI respondents have a positive view of their abilities and roles in undertaking UBC. They believe it is their and universities' role to collaborate with businesses, in both research and education.

Overall, they have a positive attitude towards UBC. Yet, Icelandic HEI respondents perceive a less positive attitude of the business sector and the region 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, 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.



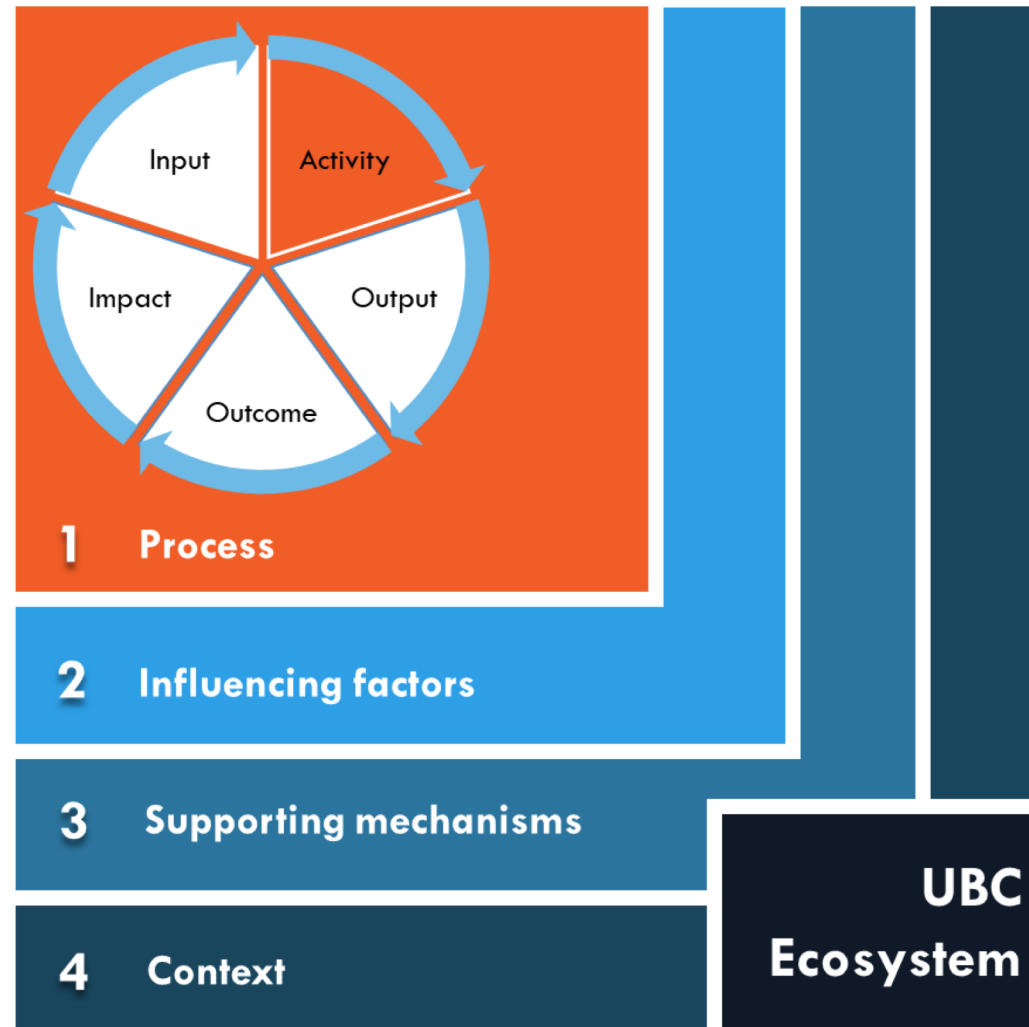
UBC activities

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

Development of UBC activities

Overall, UBC is considerably less developed for Icelandic academics than for their European counterparts.

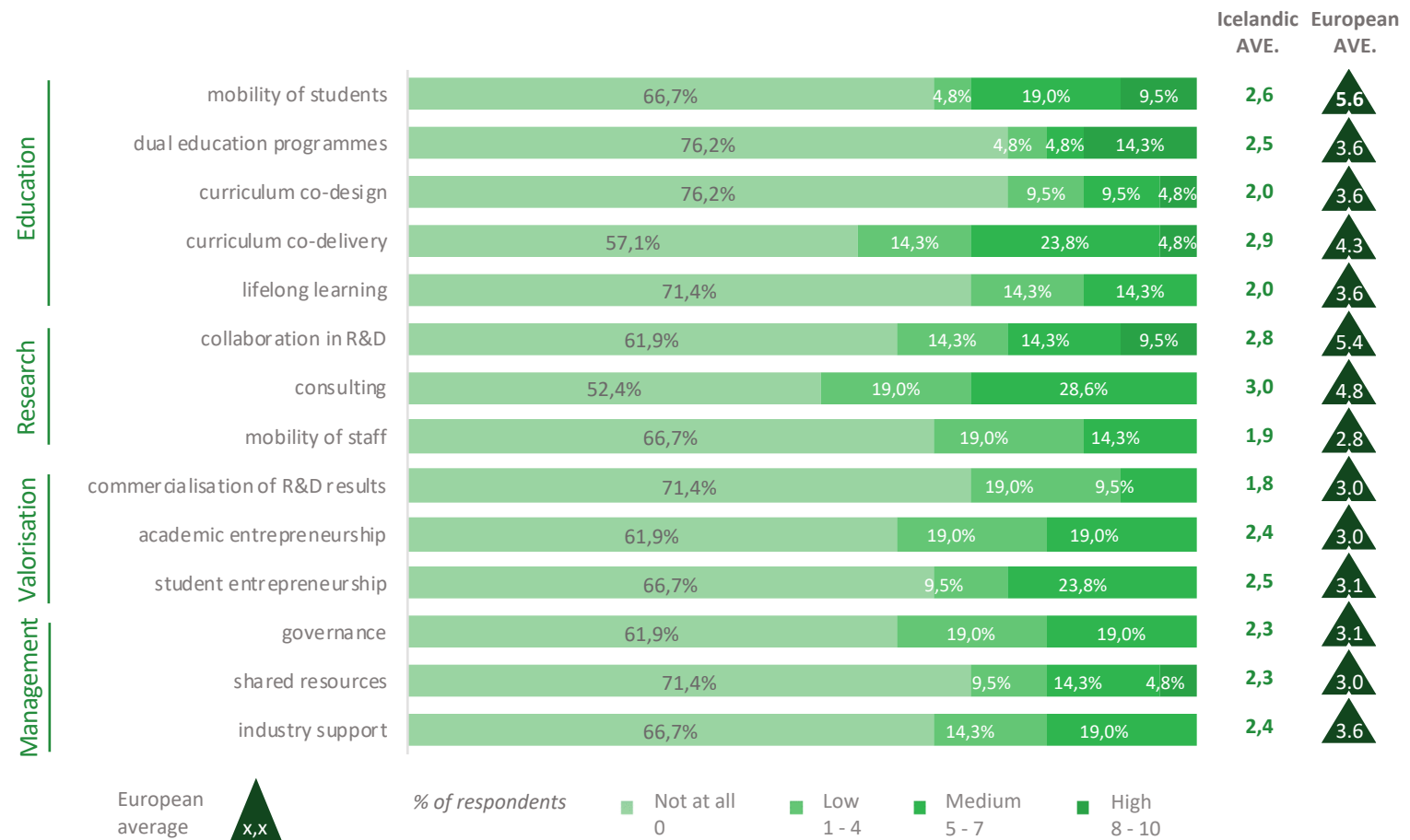
Icelandic academics most commonly engage with business in activities related to research and education. Consulting (3.0), curriculum co-delivery (2.9), collaboration in R&D (2.8) and mobility of students (2.6) are the most developed activities. Most Icelandic universities have established research incentive schemes for academics according to their research and publications output.¹ Additionally, the “Centres of Excellence” programme aims to stimulate private investment in R&D as well as collaboration between industry and academia.²

The development of UBC management and valorisation activities is low as over 60% of Icelandic academics are not engaged in any of them at all.

Generally, formalised programmes to foster UBC are underdeveloped in Iceland. However, strong informal linkages are present.³

The extent of development of UBC activities

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



¹ Neave, G., Santiago, P., Borrás, S., Rasmussen, J. G., Smyth, R., & Weko, T. (2008). OECD reviews of tertiary education: Iceland. OECD Publishing, Paris.

² Taxell, C., Yelland, R., Gillespie, I., Linna, M., & Verbeek, A. (2014). Education, research and innovation policy a new direction for Iceland.

³ Ibid.

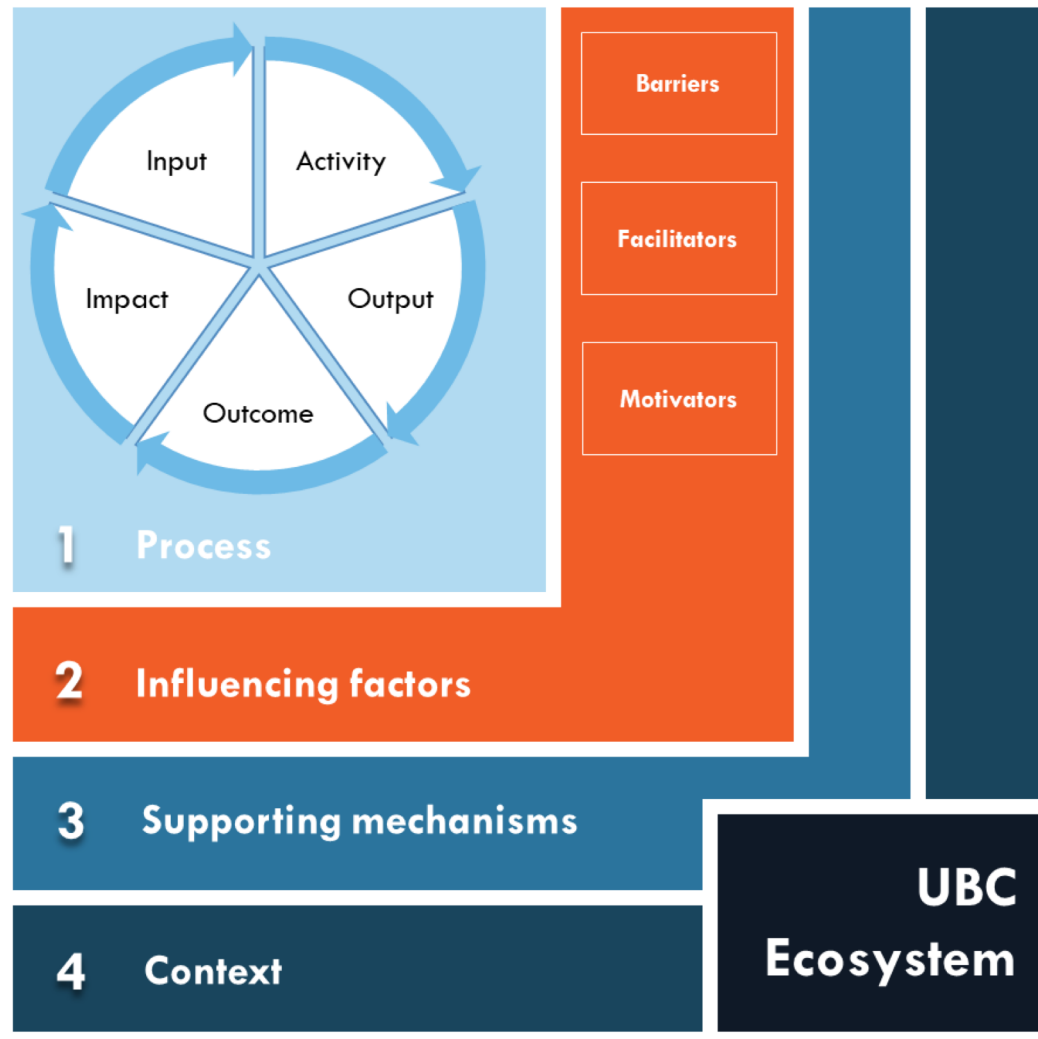
Factors influencing UBC

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.

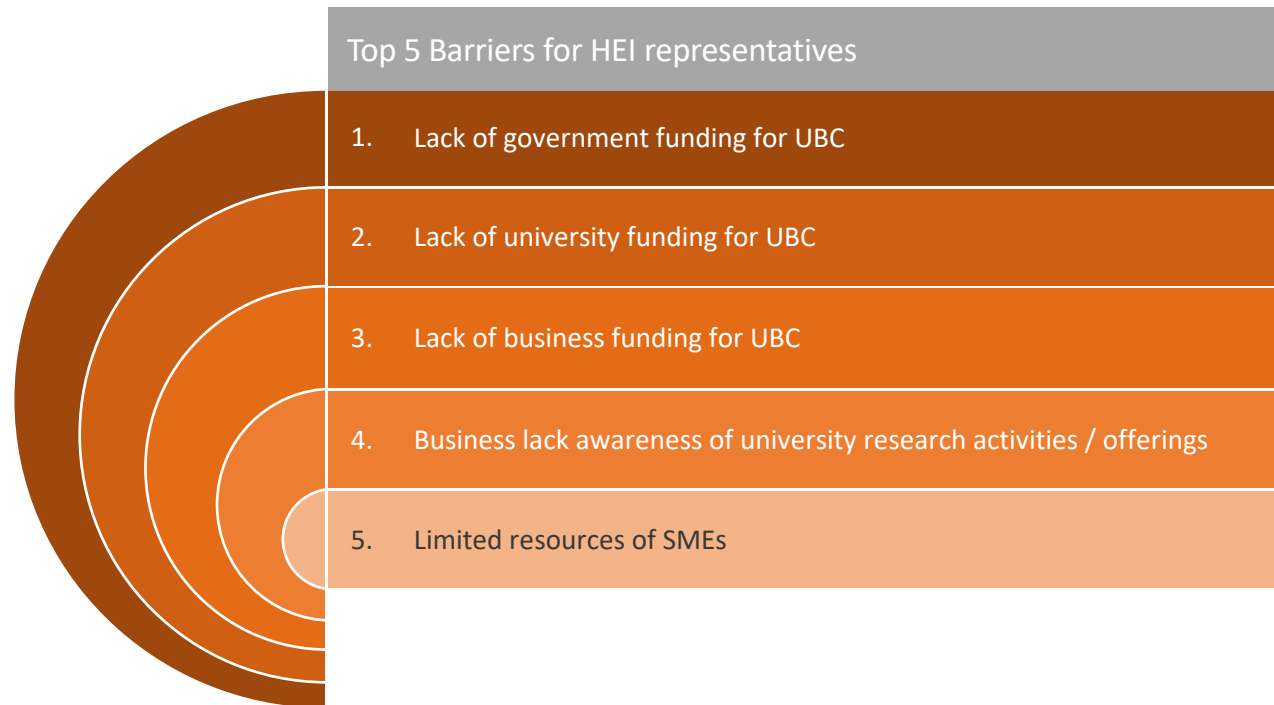
For example, even when a lack of funds is often named as a major barrier to cooperation, the presence of funds may not be enough for cooperation to happen if the perceived facilitators or motivators are not sufficiently present.



Barriers hindering UBC

Barriers

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



Icelandic HEI representatives indicate financial constraints as the strongest barriers hindering UBC.

The lack of funding from different stakeholders, namely government, universities themselves and businesses along with the limited resources of SMEs are identified as major barriers.

The significant financial pressures occasioned by the economic crisis in 2008, led to reduction in funding for higher education and research organisations in Iceland.¹ The crisis severely affected Icelandic economic infrastructure and the Science, Technology and Innovation (STI) sector is still in the recovery process.²

HEI representatives also recognise that the business's lack of awareness of university research activities is a further hurdle for UBC in Iceland.

¹ European Commission (2016). European Research Area Progress Report 2016 Country Snapshot Iceland. Publications Office of the European Union, Luxembourg, Retrieved from https://ec.europa.eu/research/era/pdf/era_progress_report2016/country_fiches/era-is.pdf

² OECD (2014). "Iceland", in OECD Science, Technology and Industry Outlook 2014. OECD Publishing. Retrieved from http://dx.doi.org/10.1787/sti_outlook-2014-53-en

Barriers hindering UBC

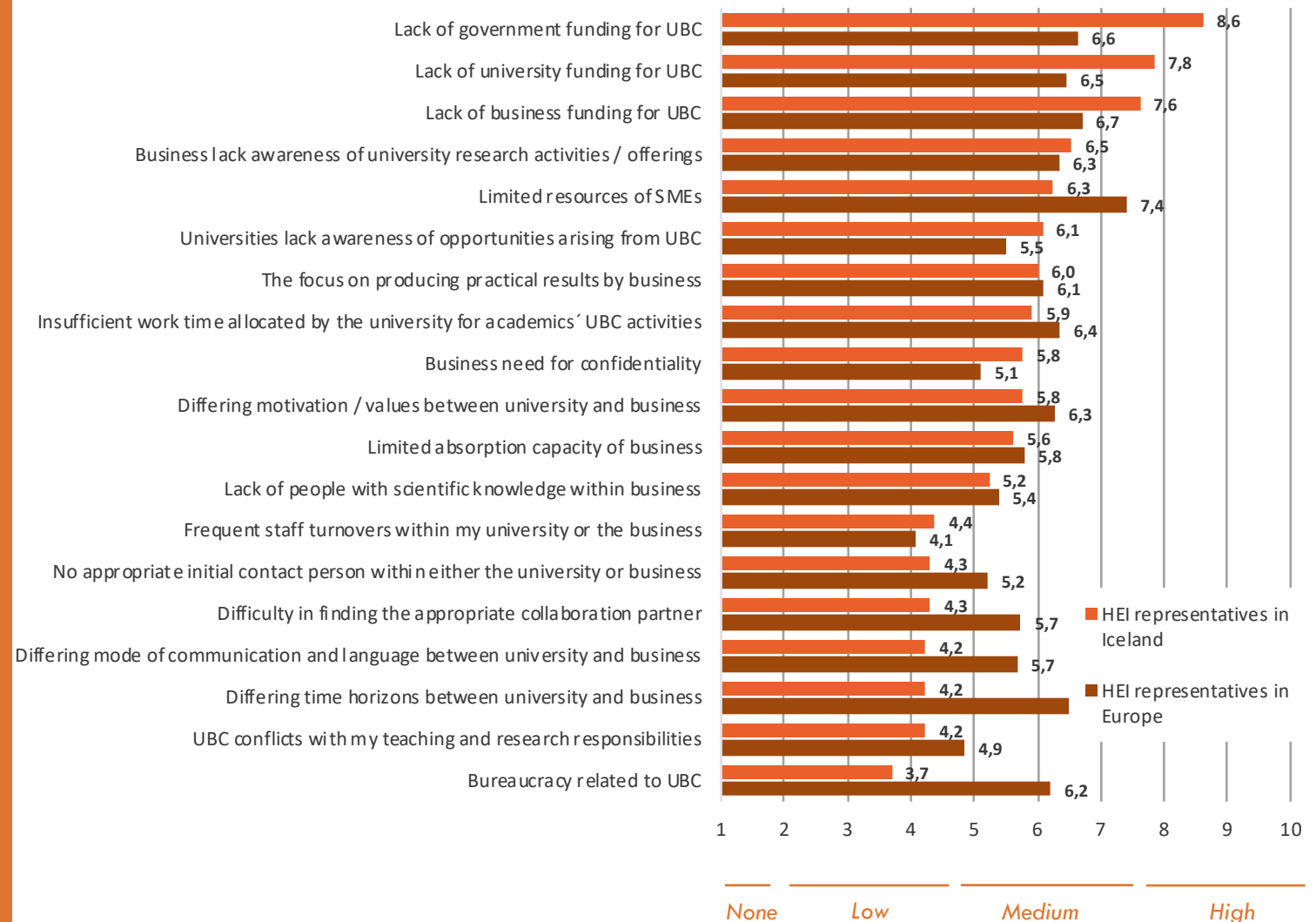
Overall, Icelandic and European HEI representatives have different perceptions of barriers hindering UBC.

While both groups agree that funding and resources related barriers hinder the most their collaboration with businesses, Icelandic HEI representatives are considerably more hindered by the lack of government, university and business funding than their European counterparts. However, the limited resources of SMEs are perceived to be less hindering for Icelandic HEI representatives than for European ones.

Additionally, cultural barriers such as differing modes of communication between university and business, differing time horizons and bureaucracy related to UBC are significantly less hindering for HEI representatives in Iceland.

Barriers

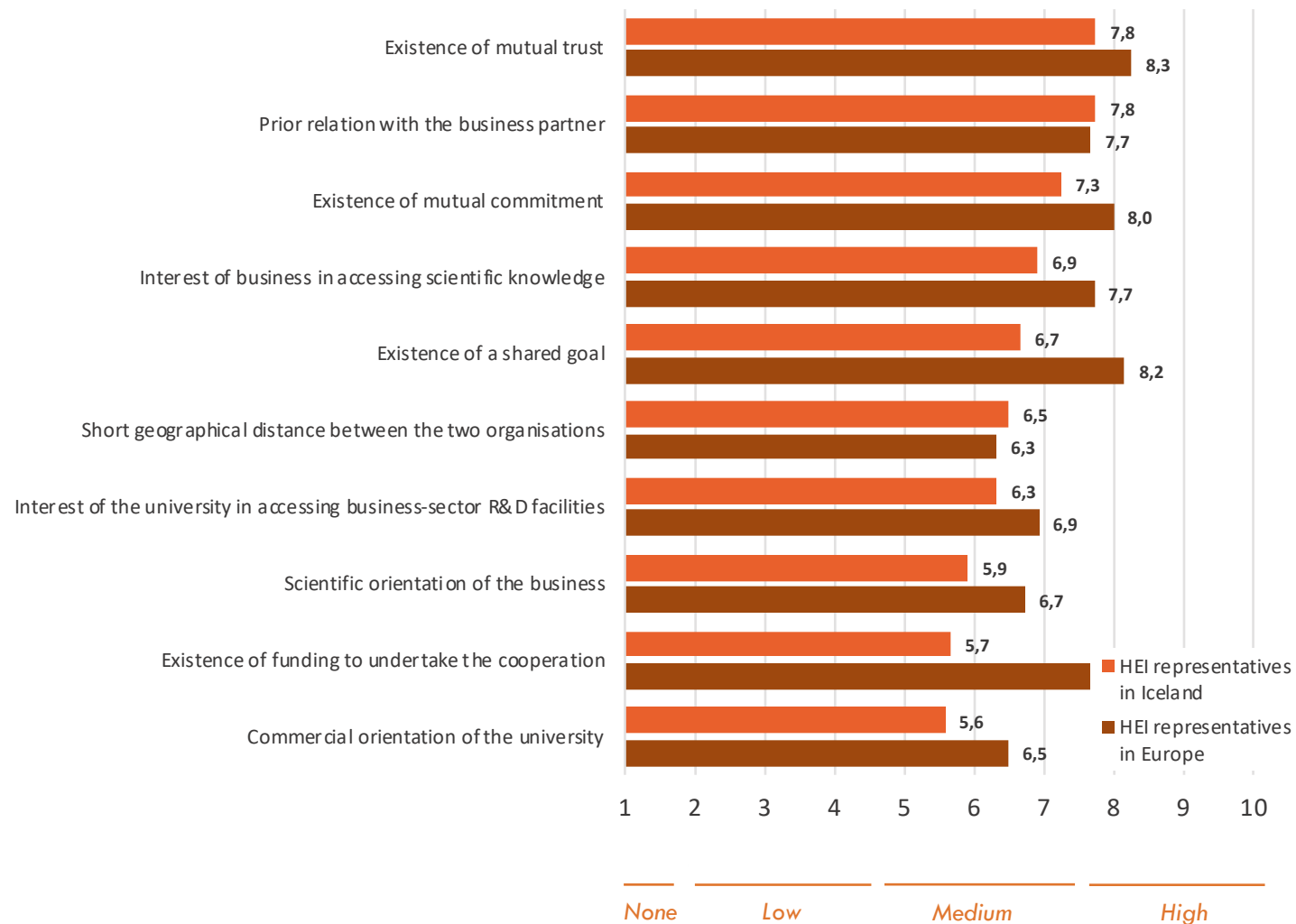
'What is inhibiting your cooperation with business?' – as answered by academics and HEI representatives



Drivers stimulating UBC

Facilitators

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



Icelandic HEI representatives and their European counterparts perceive the facilitators in a rather similar way. However, those facilitators are perceived slightly less stronger by HEI representatives in Iceland.

For both groups, the most important facilitators also relate to the relationship aspect of UBC. The existence of trust, prior relations and mutual commitment are the most important drivers facilitating their cooperation with businesses.

Due to the size of the country's population (339,747 inhabitants - July 2017 est.)¹, relationships between institutions involved in research and innovation are very close and personal² and collaboration usually starts as a personal initiative.³

Compared to European average, Icelandic HEI representatives have a lower perception of the existence of funding and the commercial orientation of the university as facilitators to undertake cooperation.

¹ CIA (2018). Iceland. In The world Factbook. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/ic.html>

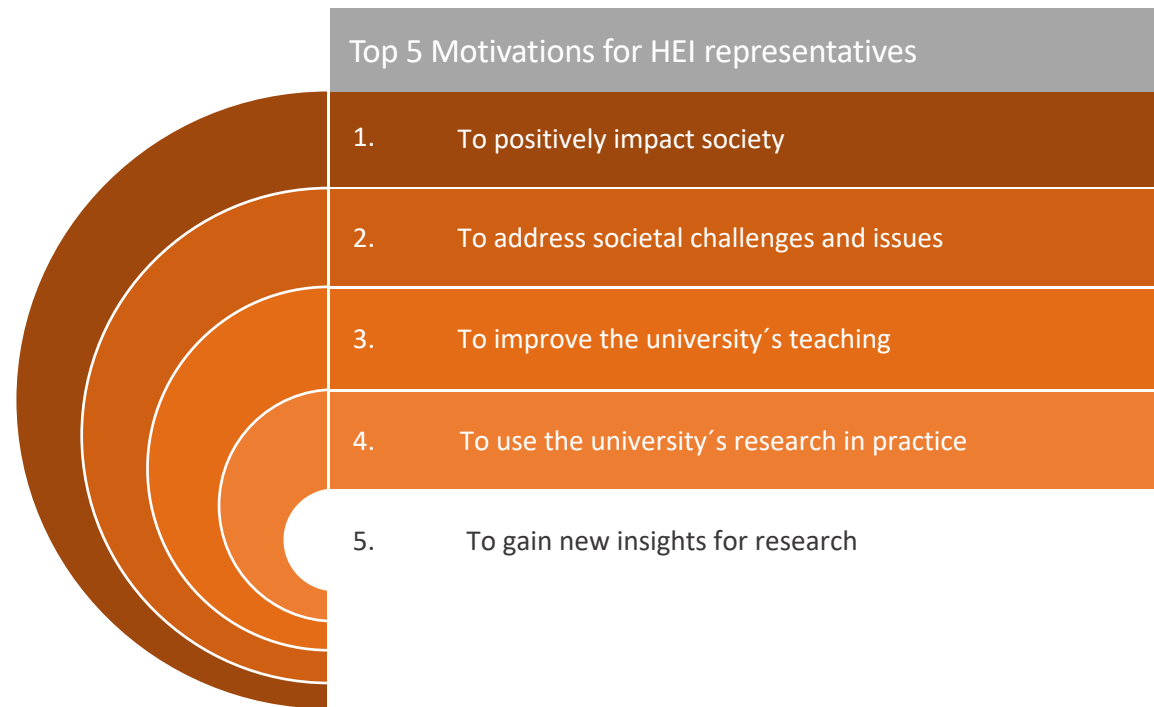
² Medvecký, O. & Braun, M. (2006). Private Sector Interaction in the Decision Making Processes of Public Research Policies Country Profile: Iceland.

³ Taxell, C., Yelland, R., Gillespie, I., Linna, M., & Verbeek, A. (2014). Education, research and innovation policy a new direction for Iceland.

Drivers stimulating UBC

Motivators

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



Icelandic HEI representatives are mostly driven by the benefits that other stakeholders can get from UBC. Thus they strive to positively impact society and address social issues.

This is followed by motivators specifically related to improving university's teaching and research.

In the last decades, there has been a rapid growth in research activities and a significant rise in the funds assigned to Research, Training and Development in Iceland.¹ This expansion in research is related to the a collective vision about the crucial role that research and research-based knowledge play for economic and social progress². This is supported by the Icelandic Science and Technology Policy Council (STPC) and the Research and Development Policy and Action Plan for 2017 to 2019, which conceives research and innovation as tools to meet challenges such as environmental changes, raising age and migration patterns for the benefit of the society.

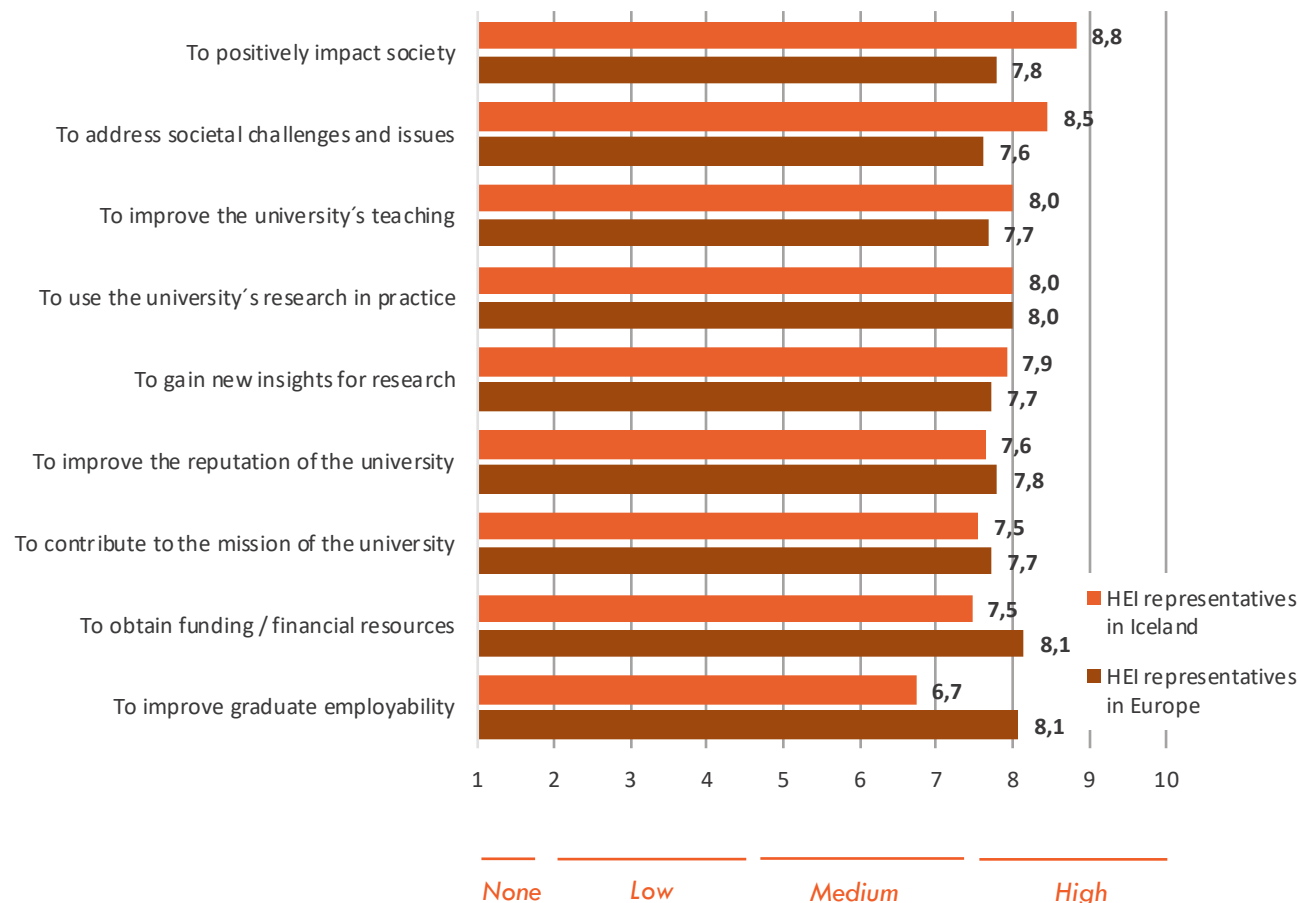
¹ Medvecky, O. & Braun, M. (2006). Private Sector Interaction in the Decision Making Processes of Public Research Policies Country Profile: Iceland.

² Neave, G., Santiago, P., Borrás, S., Rasmussen, J. G., Smyth, R., & Weko, T. (2008). OECD reviews of tertiary education: Iceland. Retrieved from <https://www.oecd.org/iceland/37228995.pdf>.

Drivers stimulating UBC

Motivators

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



Icelandic and European HEI representatives have different perceptions of UBC motivators.

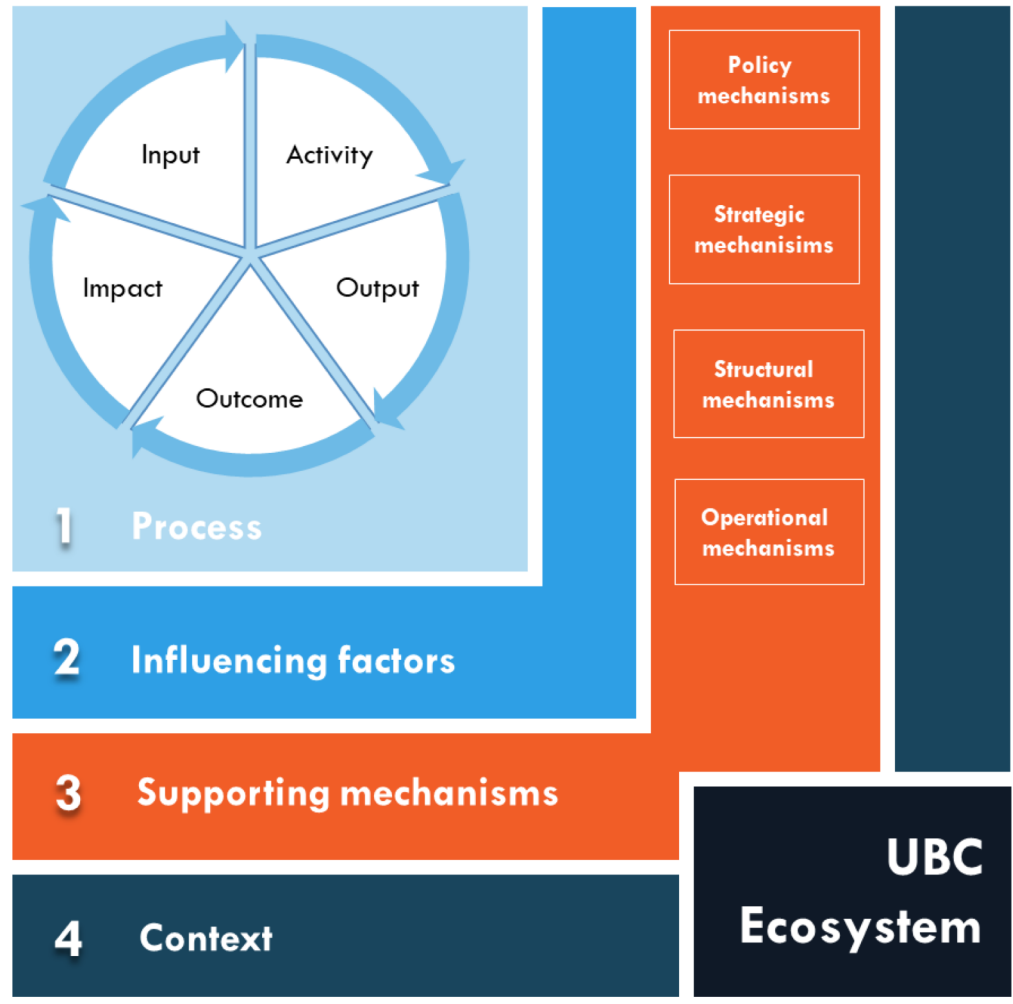
Notably Icelandic HEI representatives are more motivated by the benefits that society can get from UBC. On the contrary, the possibility to obtain funding is perceived by Icelandic HEI representatives as one of the lowest motivators.

More crucially, for both European and Icelandic HEI representatives all motivators were ranked of nearly equal importance (from 6.7 to 8.8), which ultimately means that all these motives have a potential of stimulating UBC for universities.

The Iceland 2020 plan makes explicit the need for a policy aimed at boosting research at HEIs, by making better use of available facilities and making it easier for companies to participate in research and apply its findings. The Icelandic government is aware of the positive impact of research-linked innovation and inter-disciplinary cooperation between companies, universities and research institutes on the creation of added value for the economy as a whole.¹

¹ Prime Minister's Office (2011). Iceland 2020 – governmental policy statement for the economy and community. Retrieved from <https://www.government.is/media/forsaetisraduneyti-media/media/2020/iceland2020.pdf>

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.

Icelandic HEI representatives perceive policy mechanisms to be developed to a low level. These perceptions are considerably lower than those of their European counterparts.

IP rights legislation for academic research discovery (5.1) is the only mechanism developed to a medium level according to Icelandic representatives, similar to the EU average (5.8).

The development of further policy mechanisms, such as regional innovation policies, R&D tax benefits for business and policies positively supporting entrepreneurship and research collaboration between universities and businesses, is significantly lower in Iceland than in Europe.

The Icelandic government has historically provided limited tax incentives and direct funding for business-performed R&D.¹ However, due to the establishment of several new competitively awarded funding schemes, funding has started to increase and tax incentives are becoming important instruments in the policy mix for business R&D and R&D-driven innovation.²

The least developed mechanisms, as indicated by both Icelandic and European HEI managers, are the hiring policy support to labour mobility between universities and business (3.4) and public seed capital for UBC (3.4).

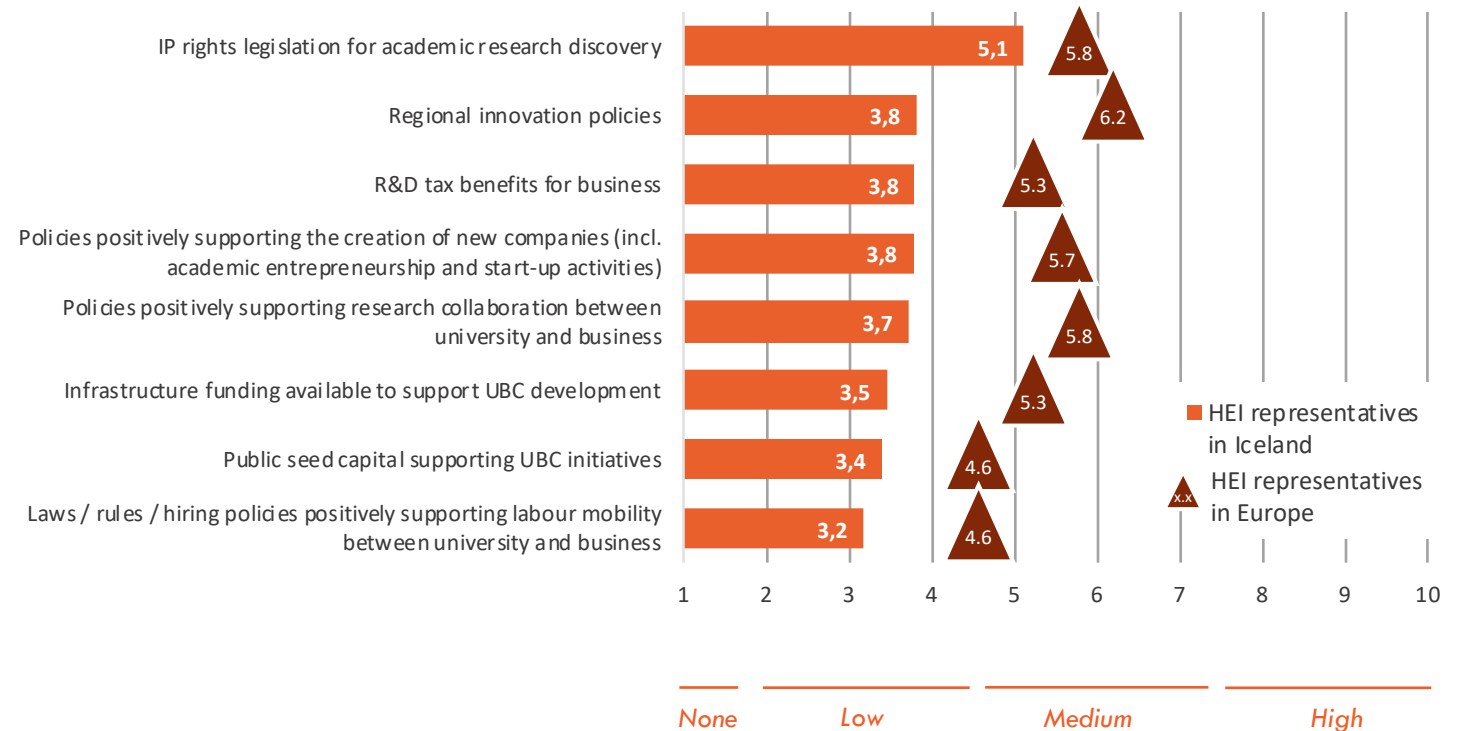
¹ Taxell, C., Yelland, R., Gillespie, I., Linna, M., & Verbeek, A. (2014). Education, research and innovation policy a new direction for Iceland.

² OECD (2016). Iceland, in OECD Science, Technology and Innovation Outlook 2016, OECD Publishing, Paris. Retrieved from http://dx.doi.org/10.1787/sti_in_outlook-2016-64-en.

Supporting mechanisms for UBC

Policy mechanisms

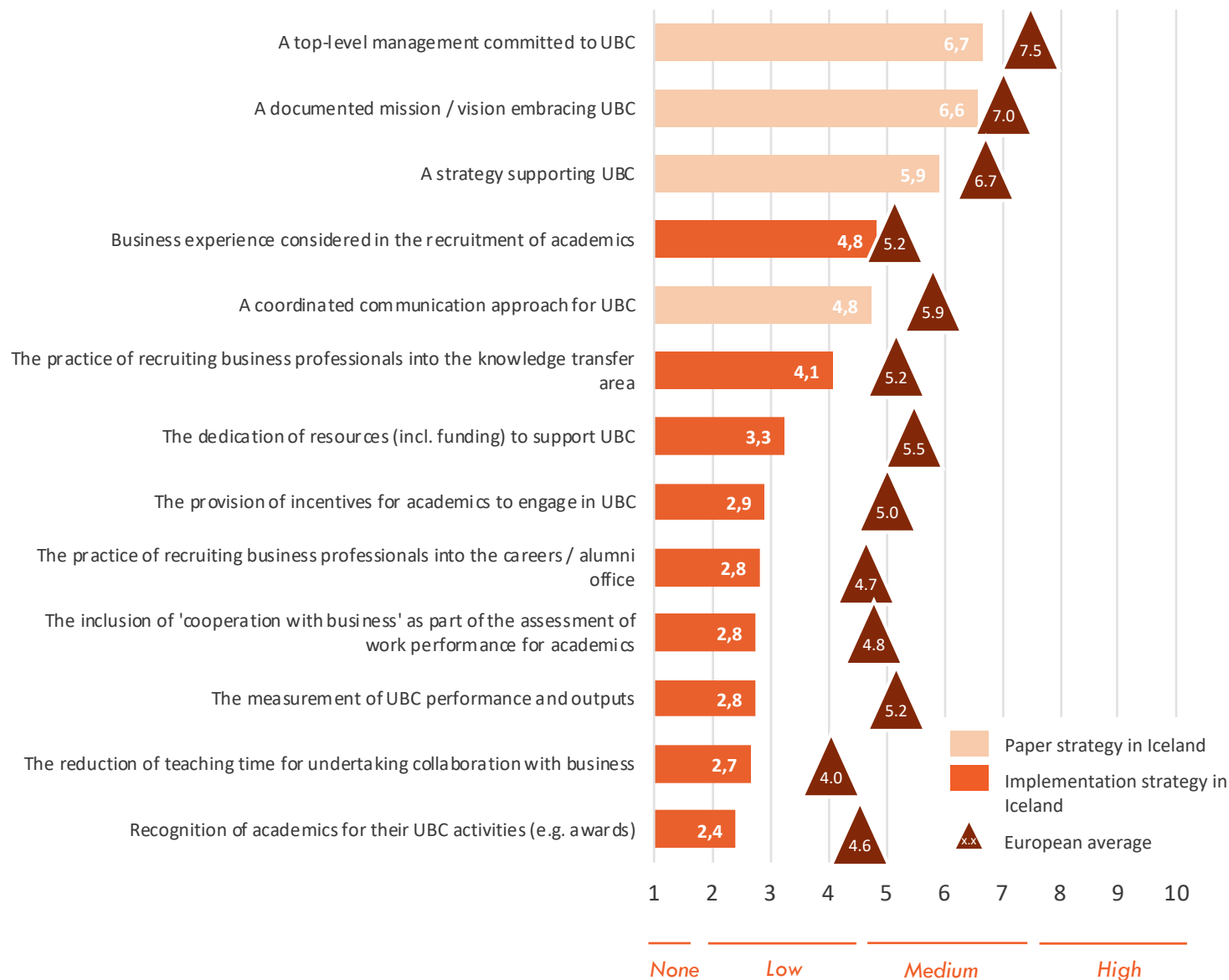
'To what extent do these mechanisms support UBC in your HEI?' - as answered by HEI representatives



Supporting mechanisms for UBC

Strategic mechanisms

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



Overall, the level of the development of the strategic mechanisms in Icelandic HEIs is notably lower than the European average.

Paper strategies are substantially better developed than the implementation strategies, indicating the official commitment of Icelandic HEIs to UBC above the actual dedication of resources.

The commitment of top-level management of Icelandic HEIs to UBC (6.7), a documented mission embracing UBC (6.6) and a strategy supporting UBC (5.9) are the most developed mechanisms.

The Science and Technology Policy and Action Plan (2017-2019) emphasizes the importance of developing a comprehensive innovation policy in Iceland, with participation of the political parties, the business sector and the education system.

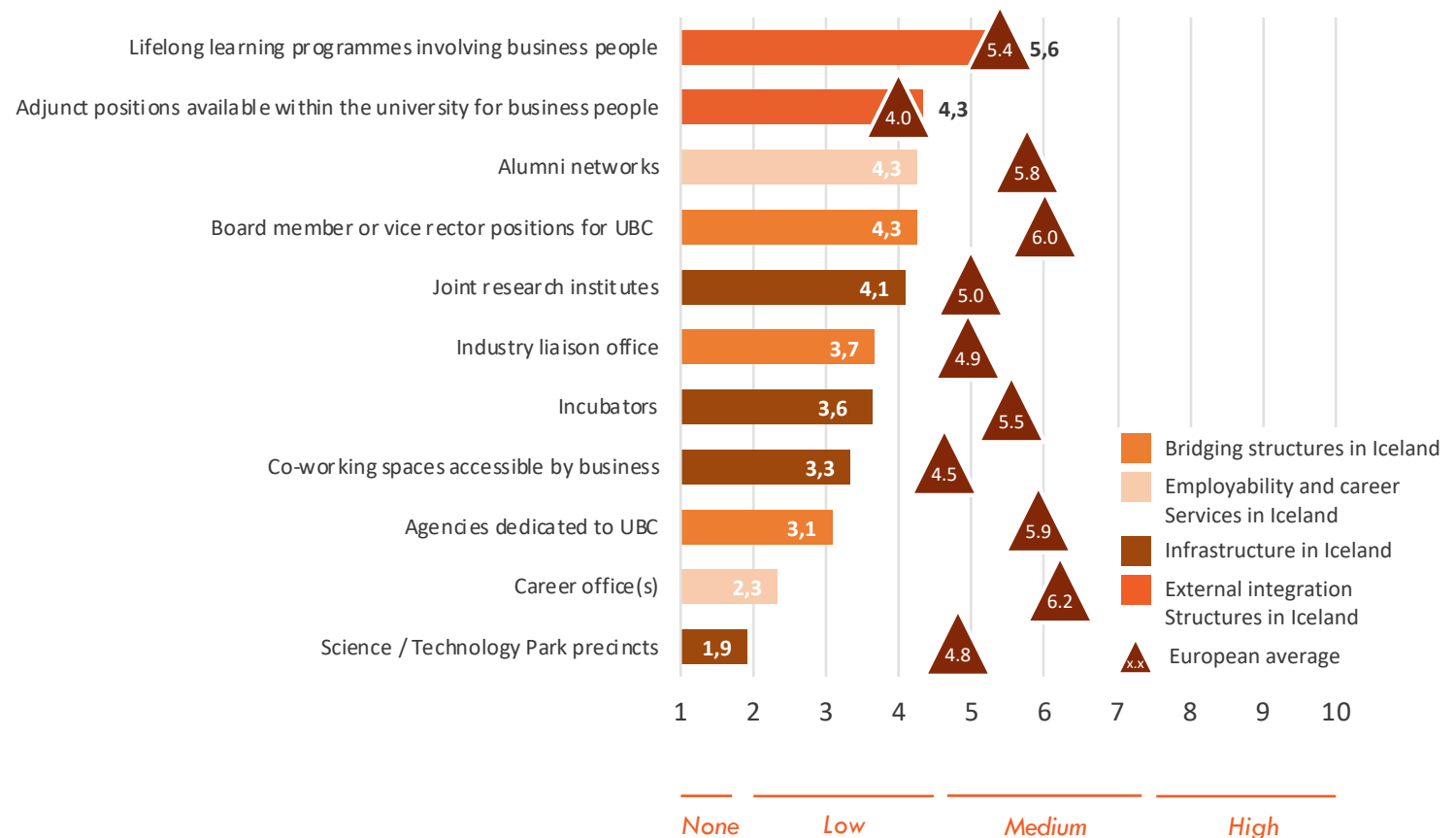
The least developed mechanisms are related to the recognition of academics' UBC activities (2.4) and the reduction of their teaching time (2.7). There is a lack of incentives for researchers in academia to proactively seek out industry collaboration.¹

¹ Heijs, F., Dooley, J., Majjala, R., Verbeek, A. & Senczyszyn, D. (2014). ERAC Peer Review of the Icelandic Research and Innovation System. European Commission, Reykjavik/Brussels. Retrieved from https://ec.europa.eu/research/innovation-union/pdf/erac/is_peer_review_report_2014.pdf

Supporting mechanisms for UBC

Structural mechanisms

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



Structural mechanisms are less developed in Icelandic HEIs than in their European counterparts, with the exception of external integration structures namely lifelong learning programmes involving business people and adjunct positions available within universities for business people. The latter are slightly more developed in Iceland.

The Icelandic government partially finances several forms of continuing and adult education. The state-financed Vocational Education Fund makes grants for continuing vocational training in business and industry.¹ One of the main goals of the Adult Education Act, in place since 2010, is to ensure the recognition of previous competencies and work experience in adult education.²

Icelandic HEI representatives indicate a low level of development in mechanisms related to employability and career services, infrastructure and external integration. Moreover, science/technology park precincts are not developed at all.

The development gap when compared to the EU average is ample.

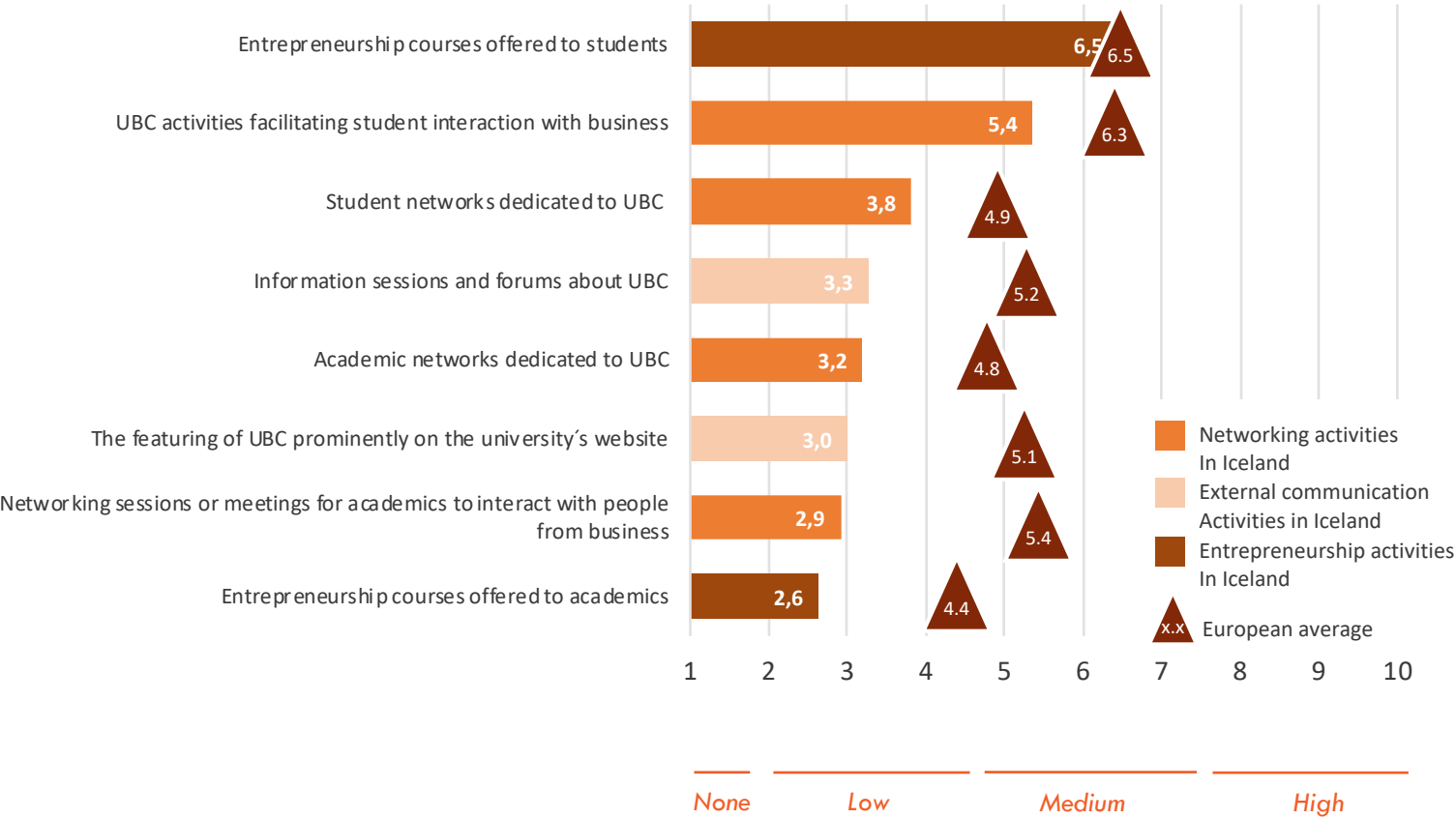
¹ OECD (2015). Education Policy Outlook: Iceland. OECD Publishing, Paris. Retrieved from www.oecd.org/education/policyoutlook.htm

² Ibid.

Supporting mechanisms for UBC

Operational mechanisms

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



Icelandic HEIs lag behind regarding the development of operational mechanisms supporting UBC compared to European average.

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

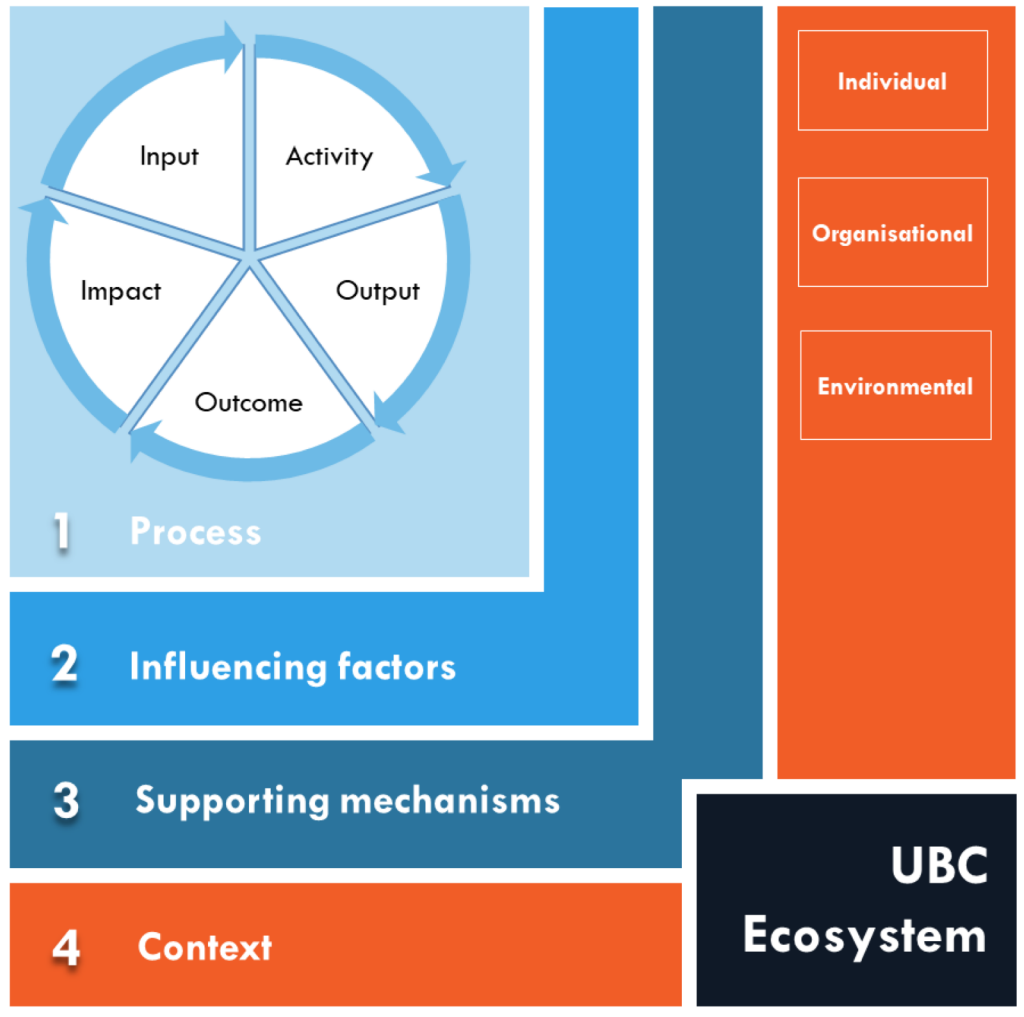
The development of the further operational mechanisms is low, especially those focused on academics.

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.).

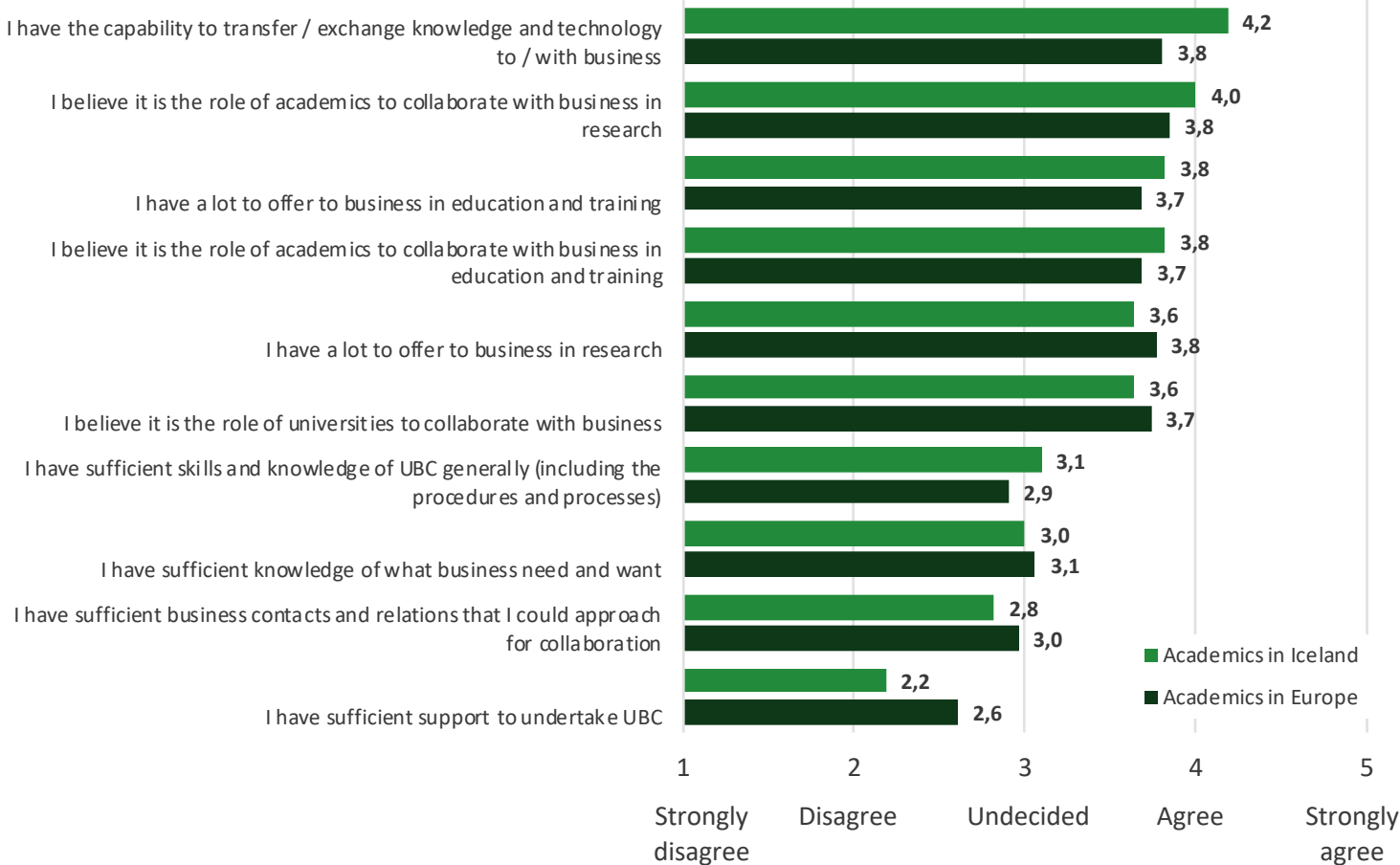
This section outlines how some contextual factors influence UBC in the country.



UBC capabilities

Capabilities for UBC

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



Icelandic academics identified moderate capabilities and beliefs about UBC, having a similar attitude to their European counterparts.

Icelandic academics believe it is their and universities' role to collaborate with business, in both research (4.0) and education (3.8). They identified their strengths in the ability to exchange knowledge (4.2) and provide education for companies (3.8).

Icelandic academics however consider that their knowledge about UBC and business contact base are insufficient (3.0 and 2.8 respectively). They also report lack support to undertake UBC (2.2).

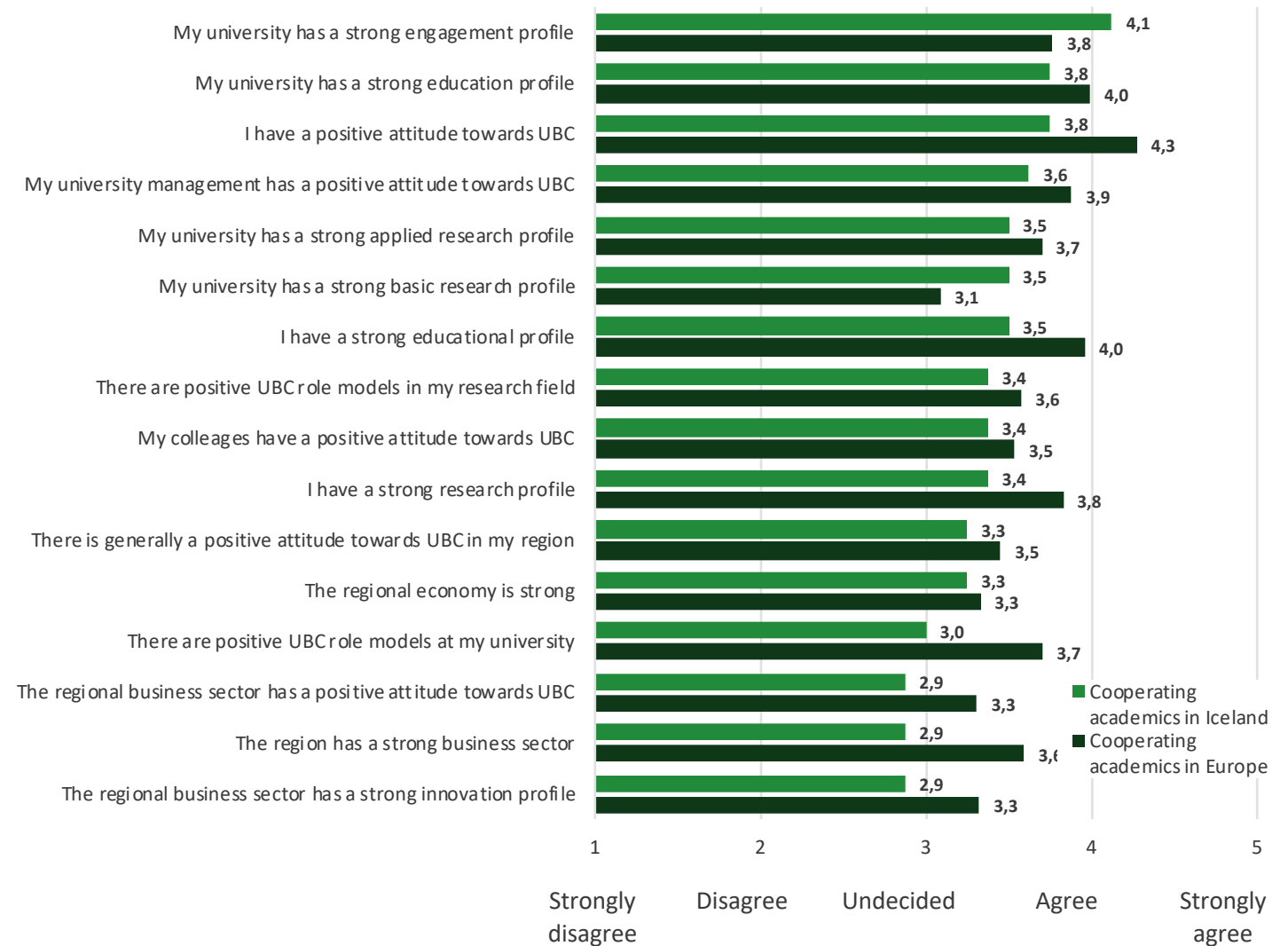
Context

Overall, Icelandic academics perceive the contextual factors affecting UBC less positively than their European counterparts.

Icelandic academics perceive their university's engagement profile more positively. However, they have a less positive attitude towards UBC than European academics (3.8 and 4.3 respectively). They also perceive a less positive attitude of the university management, business sector and the region in general towards UBC.

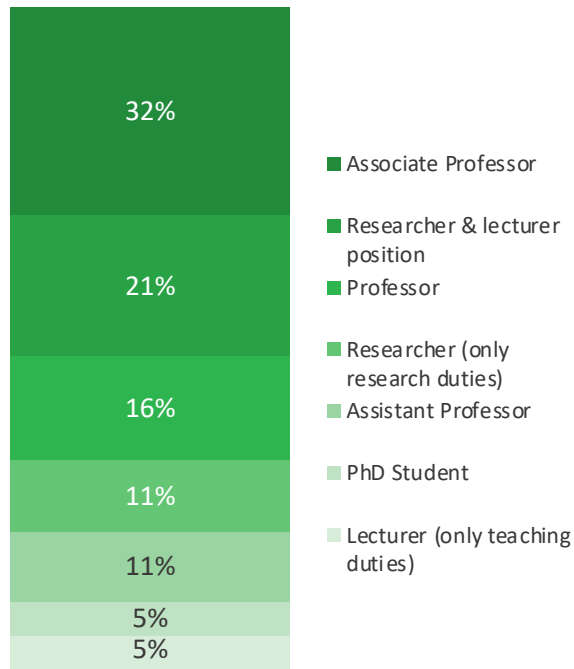
Contextual factors affecting UBC

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



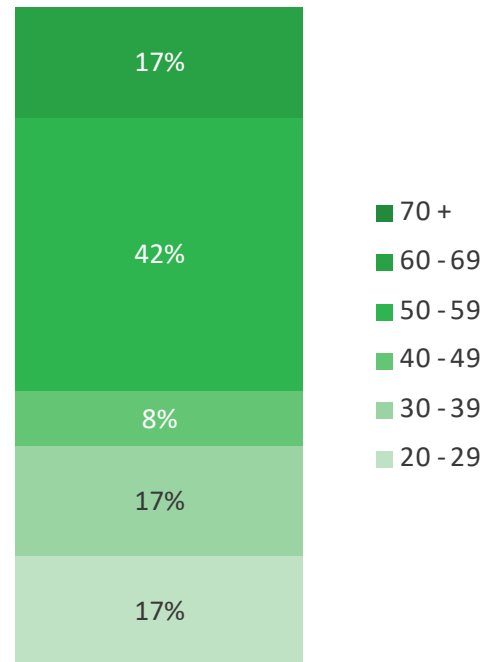
Respondent profile – academics

Position of respondent



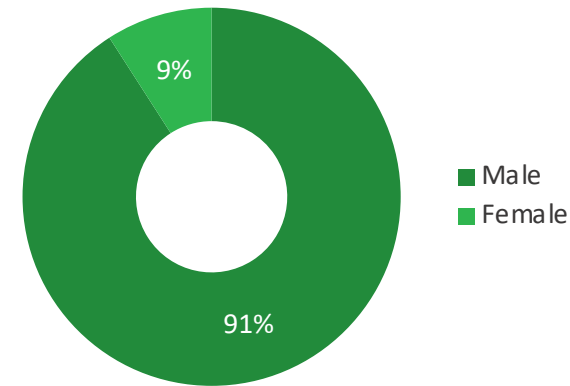
Associate professors represent the largest group of Icelandic respondents (32%), closely followed by those occupying researcher and lecturer position (21%). The remaining respondents identified themselves as professors (16%), researchers (11%), assistant professors (11%), PhD students (5%), lecturers with only teaching duties (5%).

Age of respondents



The majority of Icelandic academics are in their fifties (42%). Other significant groups are those aged 20-29, 30-39 and those above 70 years old, each accounting for 17%. Academics above between 40-49 accounted for 8%.

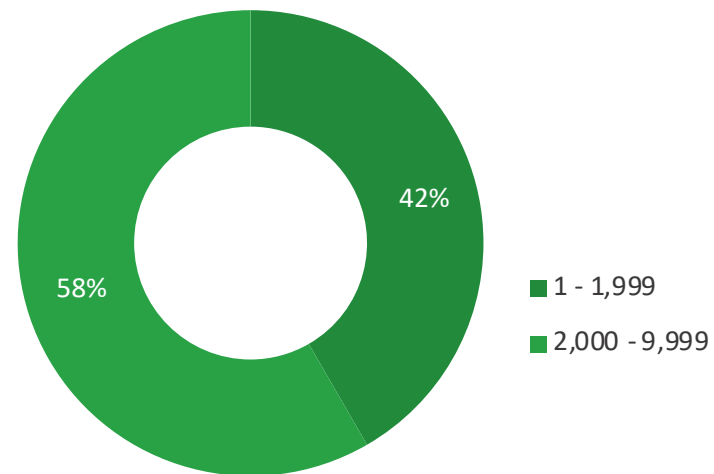
Gender of respondents



The gender distribution in the academic sample in Iceland is skewed towards male respondents, who represent 91% of the total sample.

Respondent profile – academics

Number of students of the HEI

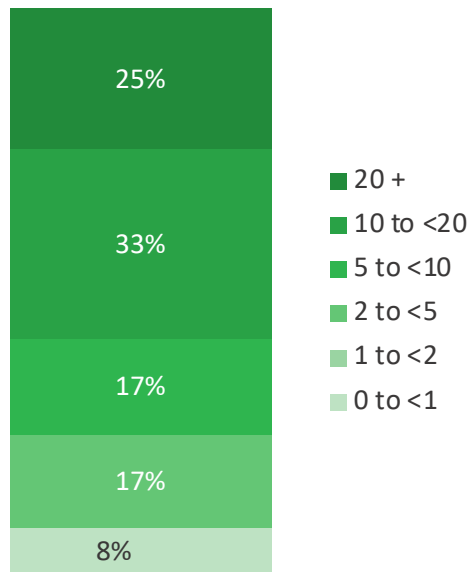


Sample Size	
Icelandic Academics	n=21
European Academics	n=10.836
Icelandic HEI representatives	n=15
European HEI representatives	n=3.482

Over a half of the Icelandic academics (58%) in the sample work for small HEIs (2,000 - 9,999 students). The remaining 42% work for very small HEIs (up to 1,999 students).

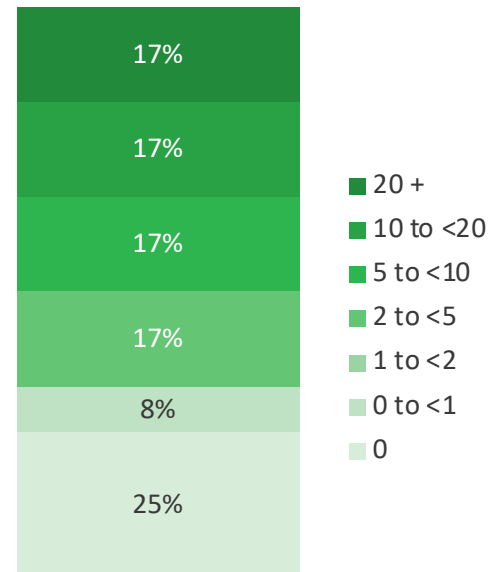
Respondent profile – academics

Years working in university



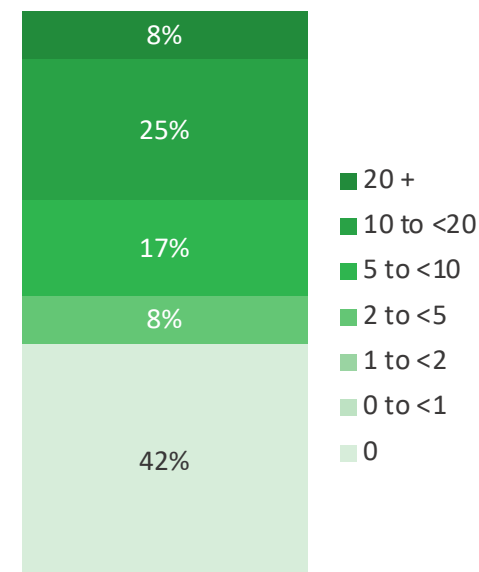
A third of academics have worked in universities for 10-20 years and 25% have more than 20 years of experience. Academics with 2-5 and 5-10 years of experiences account for 17% each. Only 8% of the respondents have less than 2 years of experience.

Years working in business



A quarter of all academic respondents have little or no industry experience. 8% of respondents worked for less than 1 year in industry before. with 12% worked up to 5 years. An equal share of 17% have industry experience of 2-5, 5-10, 10-20 and over 20 years.

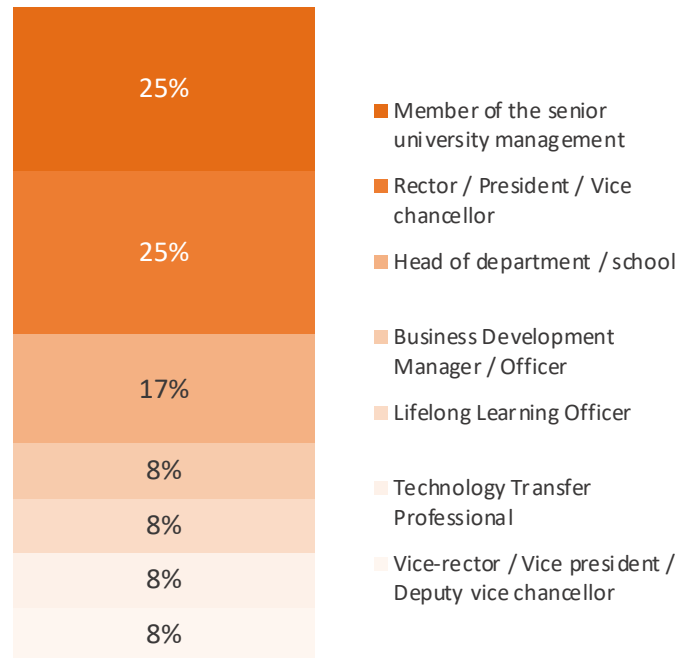
Years involved in UBC whilst working at a university or business



Almost half (42%) of academic respondents in Iceland have no UBC experience. 8% of respondents have been involved in UBC for 2 to 5 years, 17% have 5 to 10 years of experience, and 25% have been engaged in UBC for 10 to 20 years. Only 8% of academics in the sample have only been involved in UBC for more than 20 years.

Respondent profile – HEI representatives

Position of respondent



HEI representatives in Iceland hold a variety of roles. A quarter of the sample are members of the senior university management and another quarter hold a rector/president/vice chancellor position. The remaining half of the respondents identified themselves as head of department (17%), business development manager (8%), lifelong learning officer (8%), technology transfer professional (8%) and vice-rector or vice-president (8%).

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