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Science Marketing_
Science-to-Business Research Centre Germany

Fachhochschule Münster University of Applied Sciences

STATE OF EUROPEAN UBC

with a focus on Collaboration and Commercialisation of R&D

Largest study into European university-business cooperation…

6,280 full responses from HEIs' managers and academics

TII – Proton Conference
Copenhaguen, 26st April 2012

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Science to Business Marketing Research Centre

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About us
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ABOUT US

The S2B Marketing Research Centre

- Established in 2002 in Münster, Germany
- 22-person team
- Development of more than 70 instruments of Science Marketing
- Organiser of 11 international conferences
- Over 200 presentations and workshops in 27 countries
- Assisted in creation of the Responsible Partnering Handbook and the TechAdvance Technology Assessment Handbook

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ABOUT THE STUDY

Study on the cooperation between HEIs and public and private organisations in Europe (HIPPO)

DG Education and Culture,
European Commission

May 2010 to August 2011 (15.5 months)

4 project partners

Coventry University

Red OTRI Universidades

Cracow University of Economics

Free University Amsterdam

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It aims to give a **clear picture** of the extent of UBC in Europe and to get a **better understanding** of how greater UBC can be fostered

Sub-objectives

1. To chart the current situation regarding UBC in Europe,
2. To describe the factors that facilitate or inhibit UBC,
3. To identify and describe 30 examples of good practice in European UBC.

METHOD: Countries involved

PARTICIPATING COUNTRIES

Countries that are existing, or candidate members, of the European Union or are partly committed to the EU economy and regulations as member of the European Economic Area (EEA) were targets of the study.

Involved in study

METHOD: Multi-Method

1. Secondary information search	– Literature, – Published reports (national and EU level), – Books, – Journals.	
2. Qualitative research	11 expert interviews	
3. Quantitative research	– Survey translated into 22 languages, – Sent to all European HEIs (3551HEIs), – 33 countries, – Survey sample = 6,280, – Representative sample achieved.	**Perceptions of UBC development of Academics & HEI reps**
4. Qualitative workshop	12 experts in UBC met in Brussels	
5. Case studies	30 good practice European UBC case studies	

METHOD: Sample

ACADEMICS

4,123 academics responded to the major study

HEI REPRESENTATIVES

2,157 from HEI Mngt. responded to the major study

6,280 total full responses

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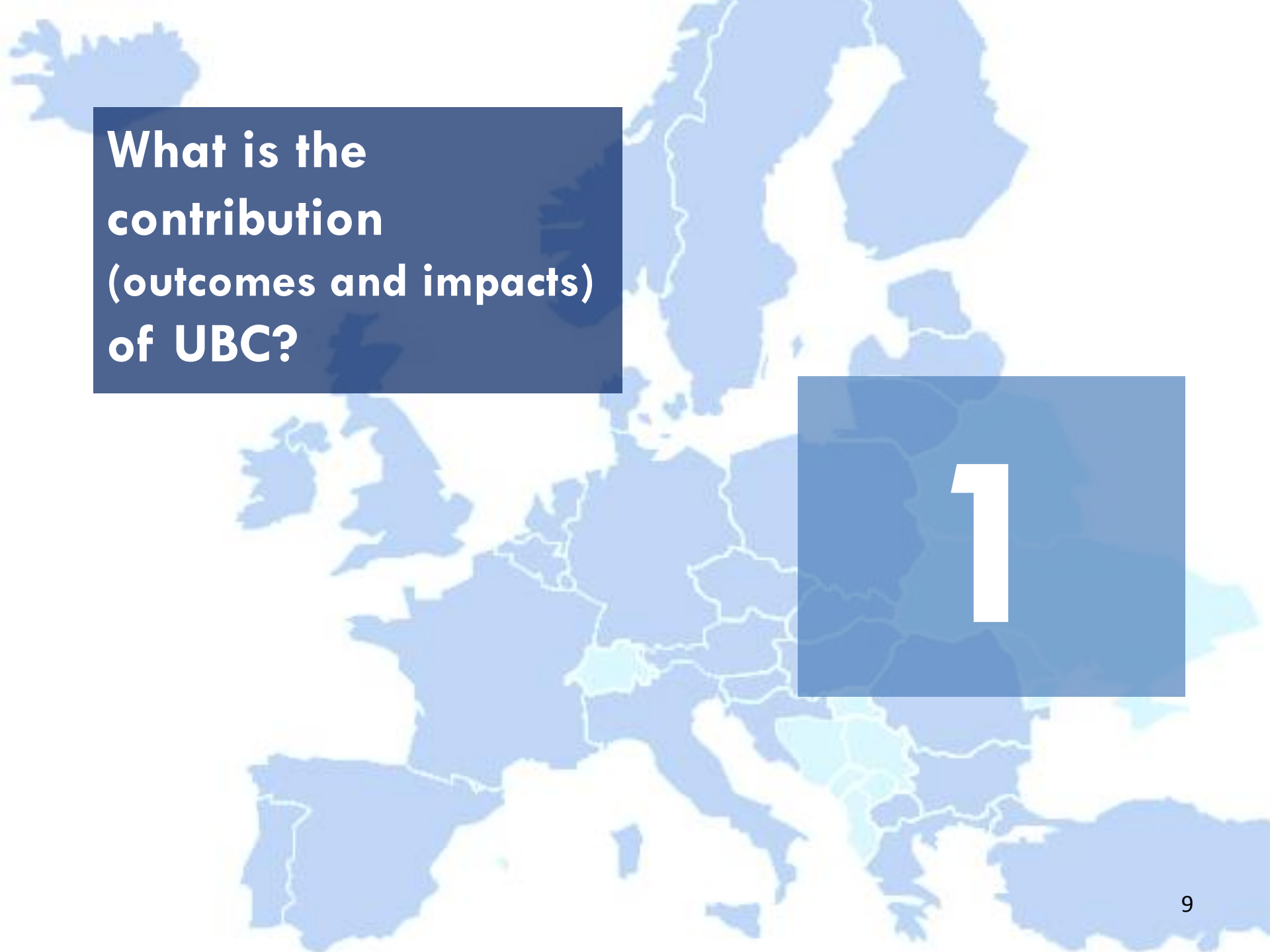
RESULTS

10 Key Findings

What is the contribution (outcomes and impacts) of UBC?



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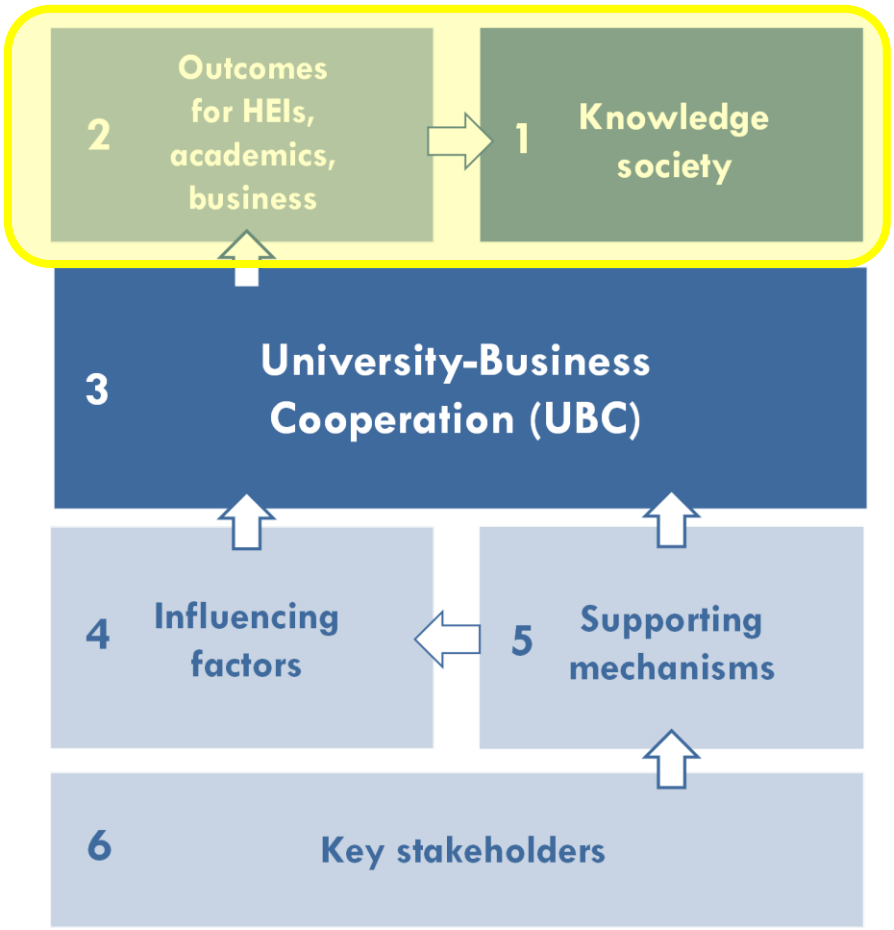
FINDING 1: Knowledge society



UBC is crucial for creating a knowledge society

1. Creating the knowledge society

Refers to the indirect outcomes experienced by society generated from UBC, including

- creates jobs and stimulates economic growth,
- increases living standards, productivity and social cohesion.

2. Outcomes for HEIs, academics & business

Refers to the direct outcomes experienced from UBC specifically in regard to:

- teaching,
- research and
- knowledge transfer

FINDING 1: Impacts of UBC

DIRECT outcomes				INDIRECT outcomes
HEIs	**Academics**	**Business**	**Students**	**Benefits for society**
• improving the research conducted within the HEI, • improving transfer of knowledge and technology to society • increasing third-party money	• more relevent research and teaching content • better / greater opportunities to fund projects • more publishing opportunities	• drives local business through product and service development, • drives necessary skills and knowledge • drives future income	• increasing motivation • acquiring practical skills • improving future job prospects	• creates jobs and stimulates economic growth, • increases living standards, productivity and social cohesion • knowledge society

Finding

1

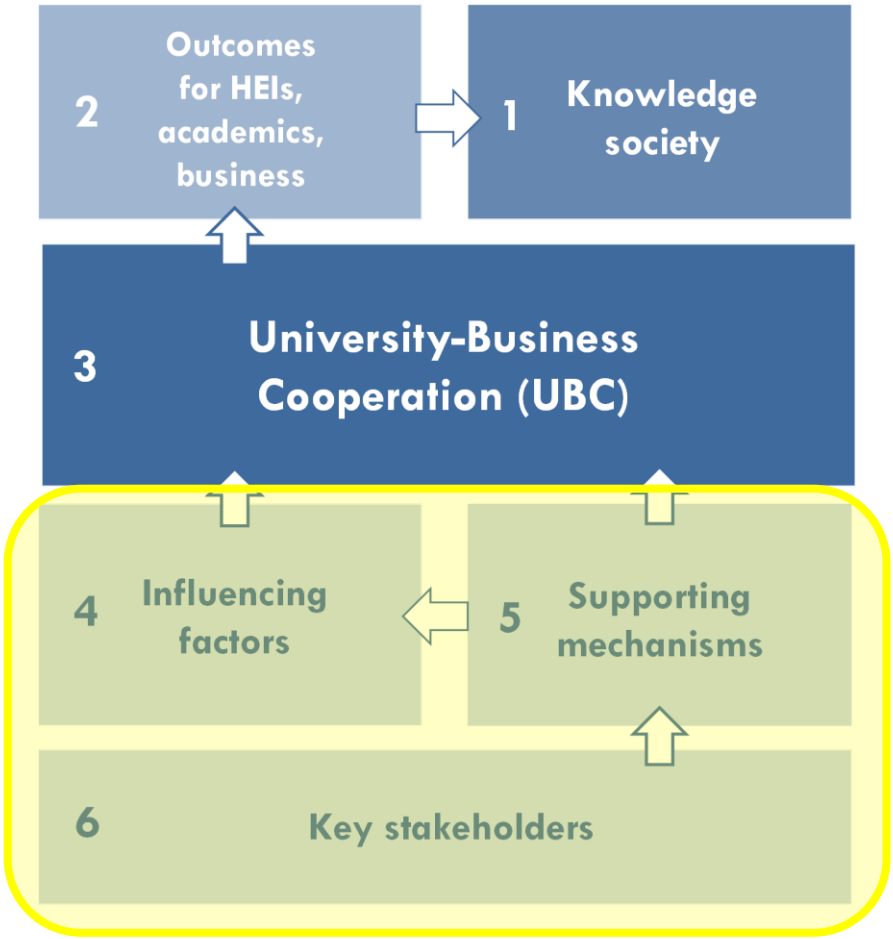
UBC is seen as a crucial activity in the development of knowledge societies

…able to directly benefit all actors involved: students, academics, HEIs and businesses

What is the nature of the UBC environment?

2

FINDING 2: The UBC ecosystem



European UBC is influenced by a large number of factors including:

1. Influencing factors
   - I. Situational factors
   - II. Barriers and drivers
   - III. Perceived benefits
2. Mechanisms that support UBC
   - I. Strategies
   - II. Structures and approaches
   - III. Operational activities
   - IV. Framework conditions
3. Key stakeholders
   - I. Business
   - II. HEIs
   - III. Govenment
   - IV. Intermediaries

Finding

2

The UBC ecosystem is complex and integrated…

All variables and their interrelations must be considered and developed simultaneously with a long term focus.

What is the meaning of UBC and what is included in this concept?

3

FINDING 3: 8 Types of UBC

UBC is more than the creation of patents, licences and contract research…

There are eight different ways in which HEIs and business cooperate

1. Collaboration in research and development (R&D),
2. Mobility of academics,
3. Mobility of students,
4. Commercialisation of R&D Results,
5. Curriculum development and delivery,
6. Lifelong learning (LLL),
7. Entrepreneurship,
8. Governance.

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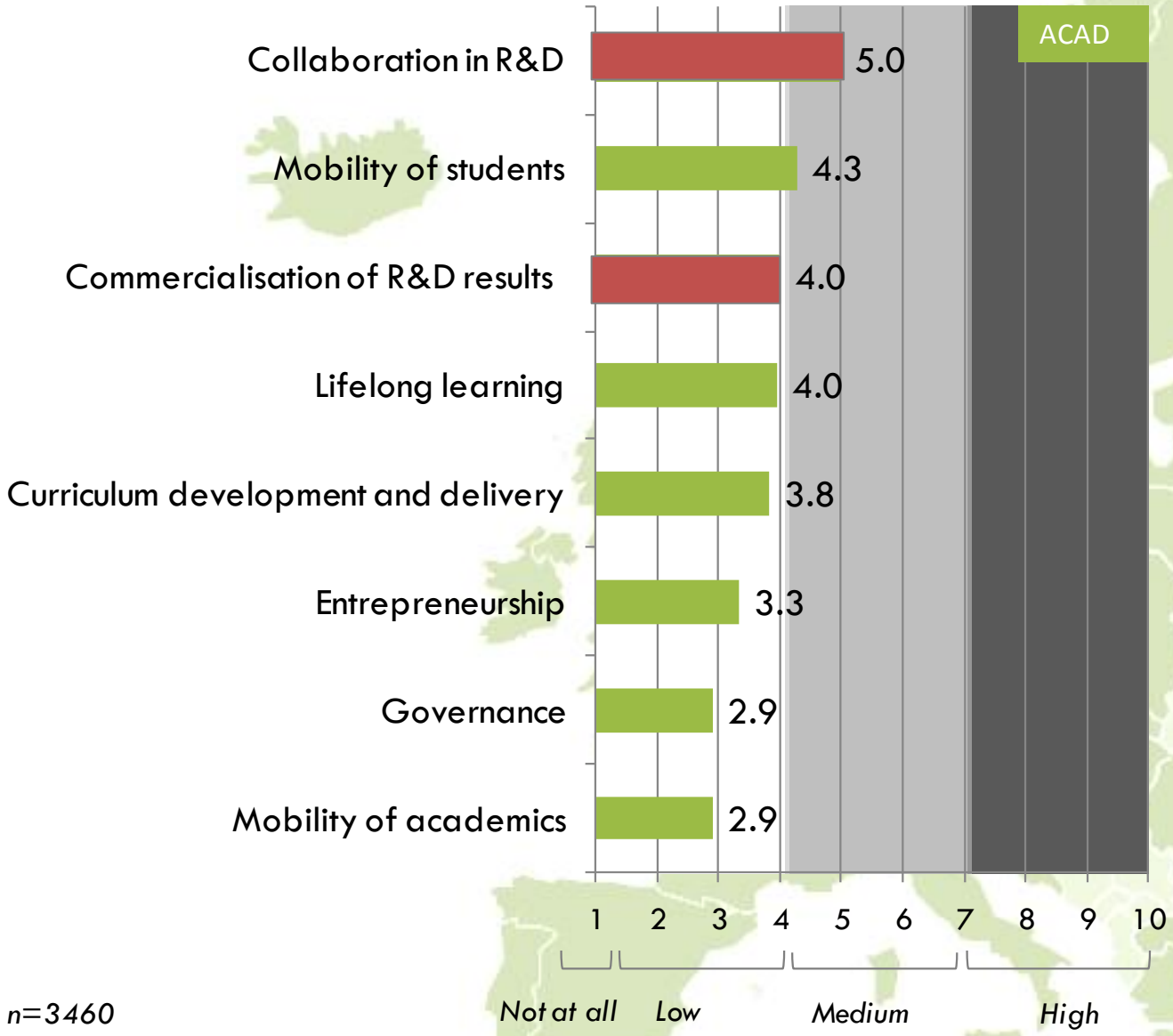
FINDING 3: 8 Types of UBC ACAD



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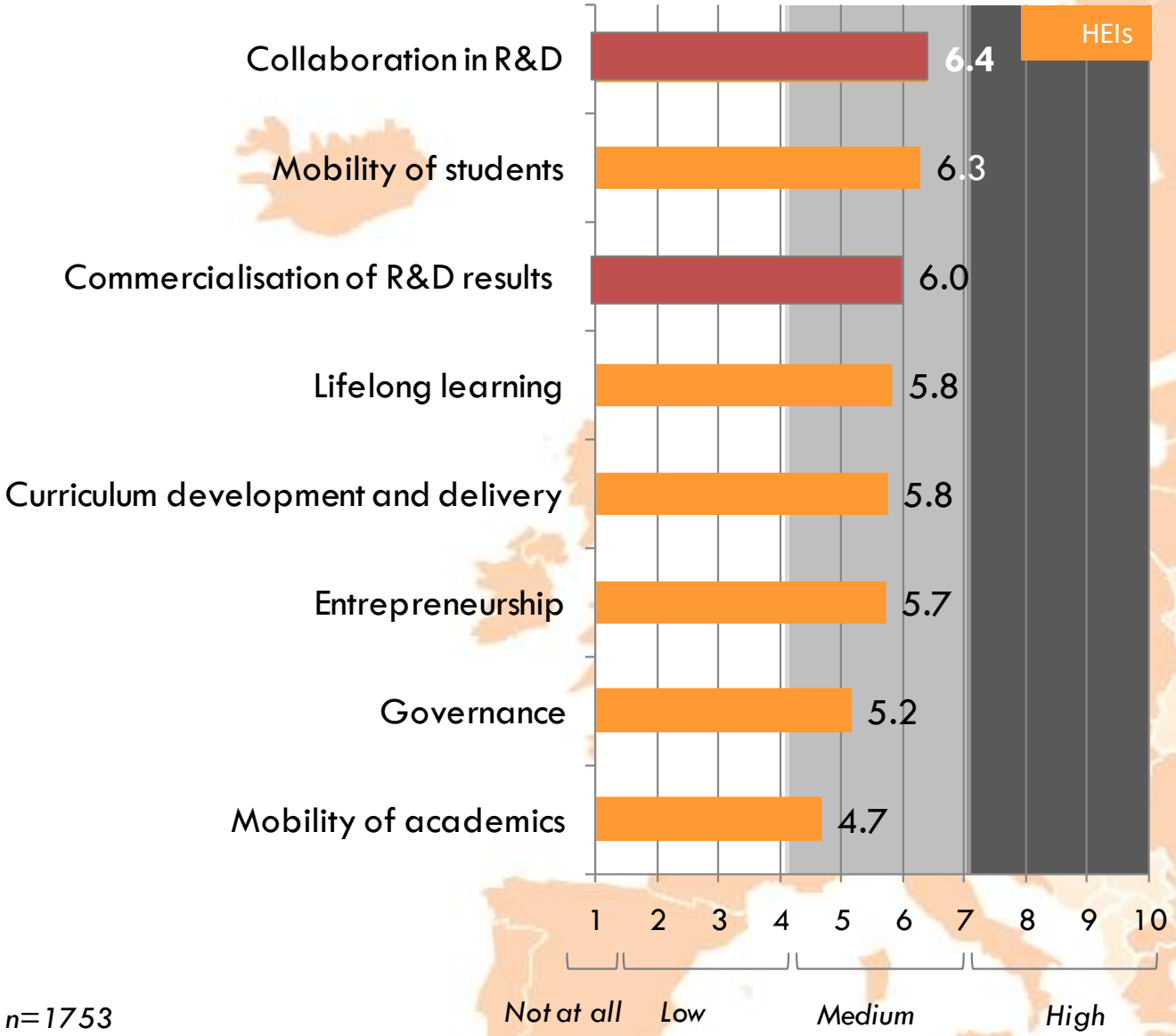
FINDING 3: 8 Types of UBC

HEIs



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Finding

3

There are eight types of UBC

…being Collaboration in R&D and Commercialisation of R&D Results in the top 3 of development

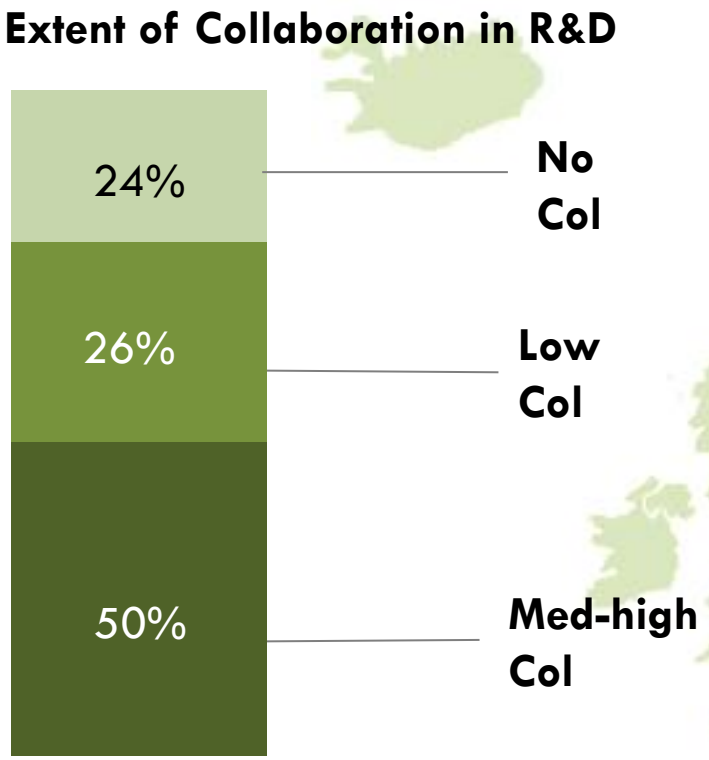
All types of UBC are correlated, meaning that they do not act and cannot be addressed in isolation

How extensive is Collaboration with business and Research Commercialisation in European HEIs?

4

Finding 4: Extent

ACAD



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Half of the academics undertake low or no amount of Collaboration in R&D

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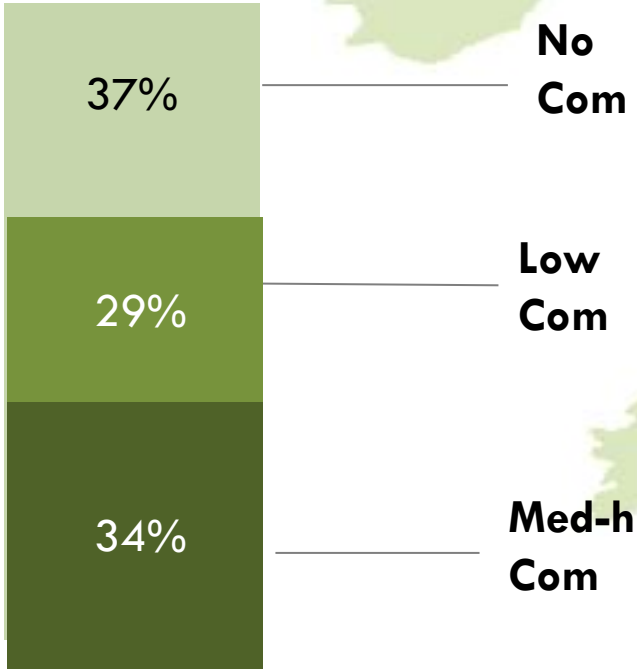
Finding 4: Extent

ACAD

Extent of Commercialisation of R&D Results



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Approximately <u>two thirds of the academics</u> undertake low or no amount of Commercialisation of R&D Results

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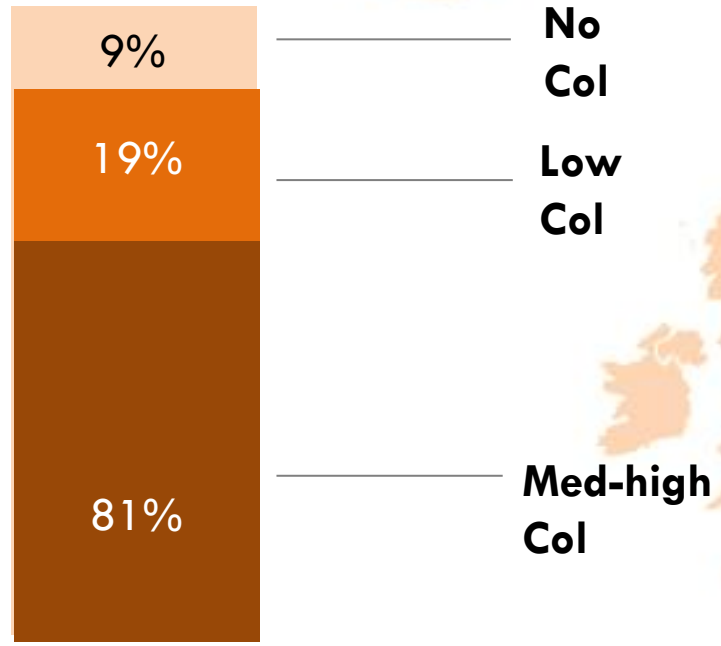
FINDING 4: Extent

HEIs



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1of every 5 HEIs undertake no or a low amount of Collaboration in R&D

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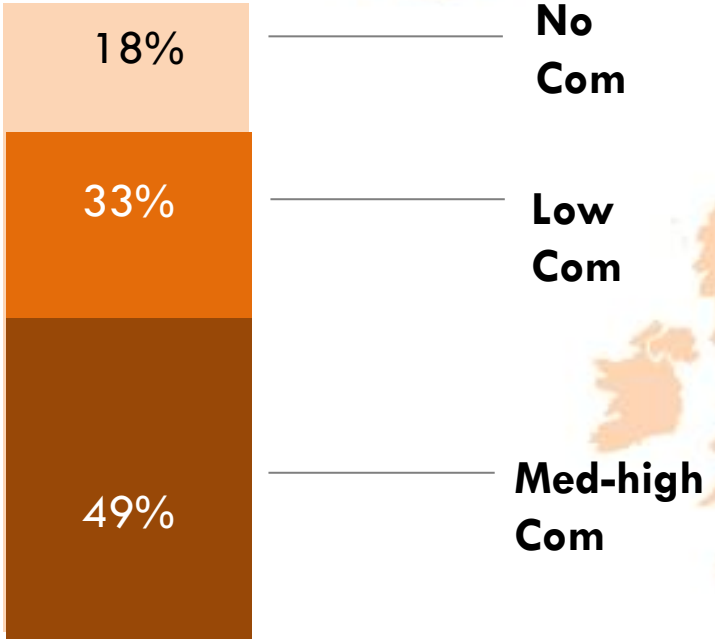
FINDING 4: Extent

HEIs

Extent of Commercialisation of R&D Results



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Half of the HEIs undertake no or a low amount of Commercialisation of R&D Results

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Finding 4

UBC in Europe is still in the early stages of development

As such, there is a lot of potential development for UBC...

Especially in earning income from UBC (only 4.5% of HEIs' budgets)

Why do some academics and HEIs engage in UBC and not others?

Influencing factors help to explain this:

a) **Situational factors** (e.g. age, faculty, years in business, etc.)

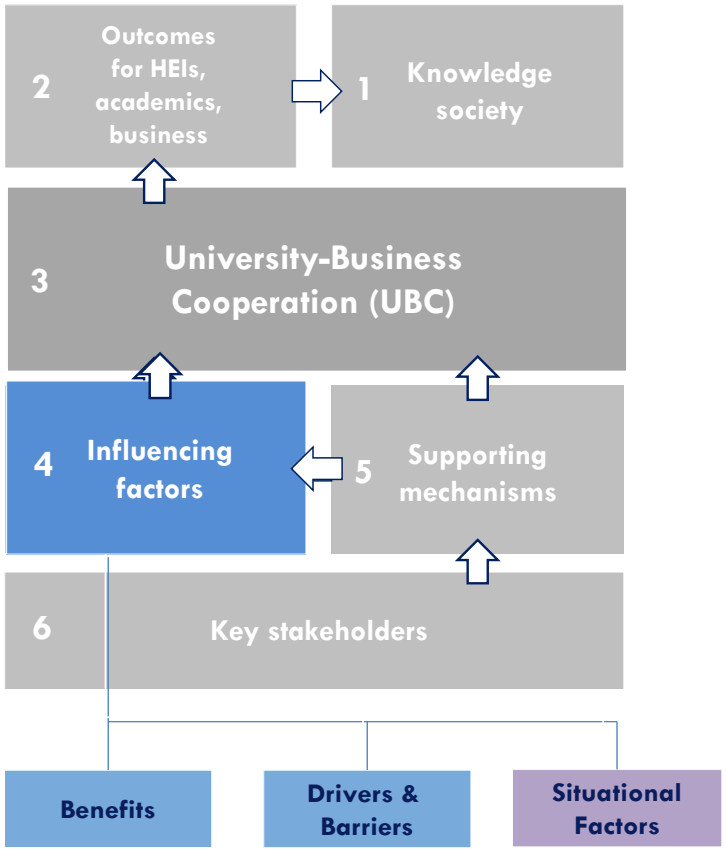
b) Barriers

c) Drivers

d) Perceived benefits

5

FINDING 5: Situational factors



All 'situational factors' ..

play a role in influencing the extent of UBC

Years working in the HEI

Age

Gender

Country

Years working in business

The type of HEI they work for

Faculty

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FINDING 5: Example

ACAD

Years in business	Total UBC	Col. R&D	Com. R&D Results
None	3.4	4.4	3.4
> 0 - 2	3.9	5.0	4.1
> 2 – 5	4.2	5.2	4.4
> 5 – 9	4.4	5.3	4.5
> 9 - 19	4.5	5.4	4.4
> 19 years	4.5	5.3	4.5

Scale: 1 = none, >1 - 4 = low ; >4 - 7 = medium ; >7 - 10 = high

UBC is significantly lower for those with no experience in business and also less for those with less than 2 years of experience in business

'Diminishing returns'= 5 years working in business

FINDING 5: Country

HEI

Country	Collaboration in R&D	Mobility of academics	Mobility of students	Commercialisation of R&D Findings	Curriculum development and delivery	Lifelong learning	Entrepreneurship	Governance	Total UBC
Austria	6.7	3.8	5.1	5.5	5.0	5.4	4.5	4.4	**5.0**
Belgium	6.3	4.5	5.9	5.6	5.5	5.4	5.6	4.5	**5.4**
Bulgaria	5.4	5.4	6.0	4.8	5.7	6.4	5.6	5.5	**5.8**
Czech Republic	6.1	5.0	5.8	5.0	6.3	6.3	4.0	3.9	**5.3**
Denmark	6.3	4.8	6.7	5.4	5.8	6.3	6.0	4.7	**5.8**
Estonia	5.1	4.1	5.2	4.7	6.9	6.4	4.9	4.0	**5.1**
Finland	7.4	5.3	7.0	5.4	5.9	6.6	6.0	5.0	**6.2**
France	6.8	4.0	6.8	5.2	6.3	6.2	6.0	5.9	**5.9**
Germany	7.2	4.6	6.7	5.9	4.9	5.3	5.6	4.7	**5.6**
Hungary	6.4	4.6	5.4	4.7	6.1	6.2	4.8	5.1	**5.6**
Ireland	7.9	5.1	7.2	7.7	7.3	7.1	7.6	6.8	**6.9**
Italy	5.8	4.8	6.0	5.0	5.9	5.5	5.1	4.7	**5.3**
Latvia	6.4	5.9	7.2	4.4	6.7				
Lithuania	4.9	5.9	7.2	4.4	6.7				
Netherlands	6.4	4.6	6.1	5.4	5.2				
Norway	6.5	4.0	5.3	4.7	4.5				
Poland	4.9	4.4	5.5	4.0	5.1				
Portugal	6.0	4.8	6.8	4.8	6.0				
Romania	6.8	6.3	7.2	5.5	6.9				
Slovakia	5.1	4.8	5.4	4.4	4.9				
Spain	6.9	4.9	6.6	6.1	5.7				
Sweden	7.0	4.4	5.4	6.2	5.5				
Turkey	5.6	5.0	5.4	4.5	4.6				
United Kingdom	7.6	5.4	6.5	7.4	6.9				

GERMANY

European leaders in UBC

1. Collaboration in R&D
2. Mobility of students
3. Commercialisation of R&D

Below average extent of UBC

1. Curriculum development & Delivery
2. Lifelong learning
3. Governance

Scale: 1 = No UBC, >1 - 4 = low ; >4 - 7 = medium ; >7 - 10 = high

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FINDING 5: Profile

ACAD

PROFILE OF ACADEMIC WITH HIGH COOPERATION IN COLLABORATION IN R&D / COMMERCIALISATION OF R&D RESULTS:

- Men
- Between 40 and 50 years
- Between 10 and 19 years of experience working in HEIs
- More than 5 years of experience working in business
- Working in a Polytechnic University
- In the area of Technology and Engineering
- Located in Finland / UK / Sweden

Finding

5

Situational factors help to explain UBC

...but only a few of them have practical implications

Why do some academics and HEIs engage in UBC and not others?

Influencing factors help to explain this:

a) Situational factors (e.g. age, faculty, years in business, etc.)

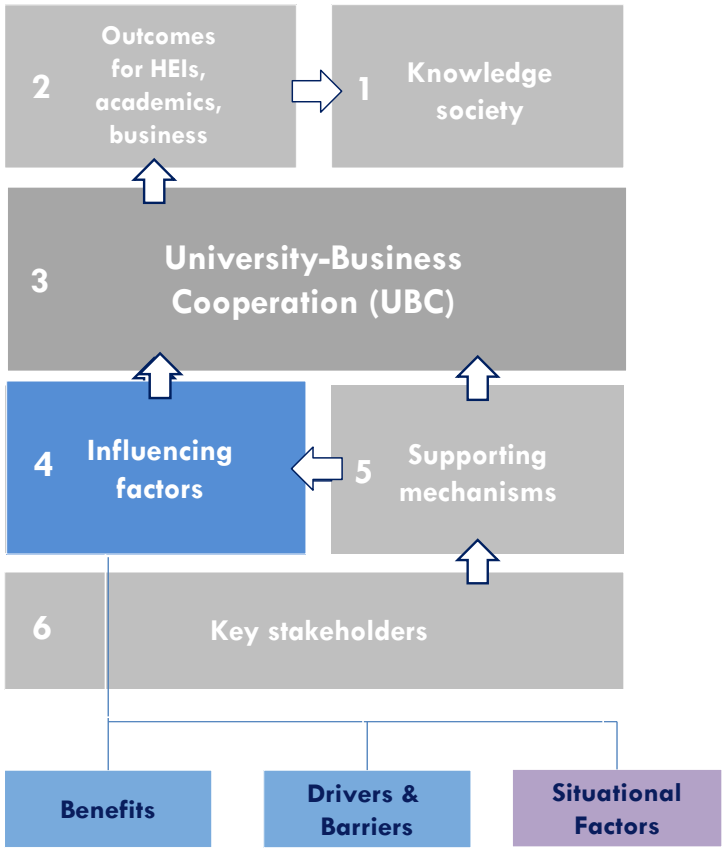
b) Barriers

c) Drivers

d) Perceived benefits

6

FINDING 6: UBC Barriers



Most important barriers for academics

1. Bureaucracy within or external to the HEI (7.3)
2. Lack of HEI funding for UBC (6.9)
3. Lack of external funding for UBC (6.9)

Most important barriers for HEIs

1. Lack of external funding for UBC (7.0)
2. Lack of financial resources of the business (6.9)
3. Business lack awareness of HEI activities (6.9)

Scale: 1 = No importance, - 10 = high importance

Finding: All academics and all HEI representatives see the same barriers to UBC regardless of their extent of cooperation

Finding

6

Lack of funding and excess of bureaucracy at all levels (HEI, national, European) are the highest barriers to UBC

… but removal of barriers does not create UBC

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Why do some academics and HEIs engage in UBC and not others?

Influencing factors help to explain this:

a) Situational factors (e.g. age, faculty, years in business, etc.)

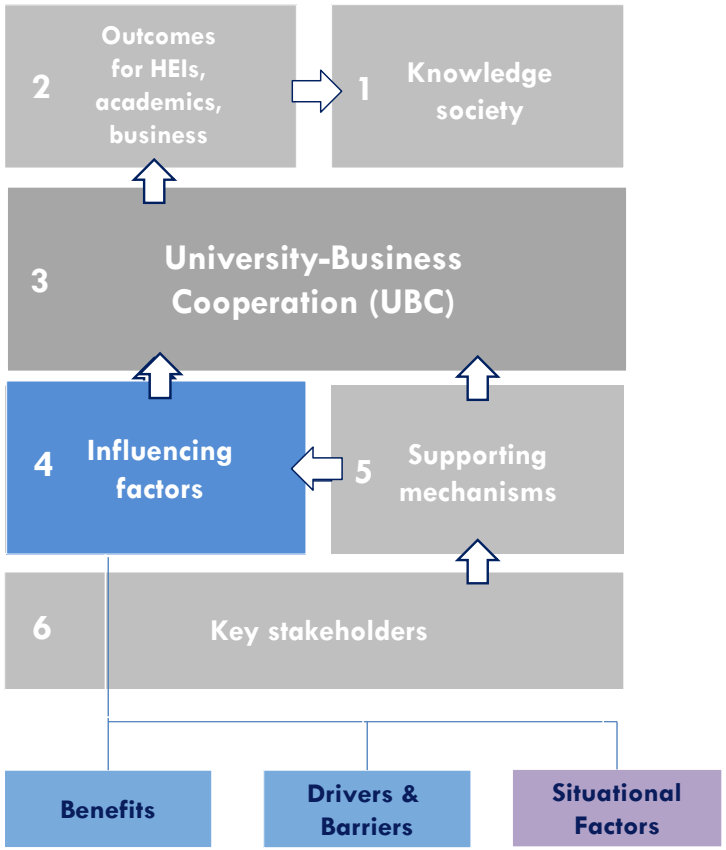
b) Barriers

c) Drivers

d) Perceived benefits

7

FINDING 7: UBC Drivers



Most important drivers for **academics**

1. Existence of mutual trust (7.4)
2. Existence of mutual commitment (7.0)
3. Having a shared goal (7.0)

Most important drivers for **HEIs**

1. Existence of mutual trust (7.5)
2. Existence of mutual commitment (7.1)
3. Having a shared goal (7.1)

Scale: 1 = No importance, - 10 = high importance

Finding: All academics and all HEI representatives see the same drivers to UBC regardless of their extent of cooperation

Finding

7

Personal relationships drive UBC. It's a people game!

Existence of mutual trust and commitmment are the most important drivers of UBC for both academics and HEIs.

Those academics or HEIs perceiving higher drivers for UBC are more engaged in UBC than those perceiving low drivers for UBC

Why do some academics and HEIs engage in UBC and not others?

Influencing factors help to explain this:

a) Situational factors (e.g. age, faculty, years in business, etc.)

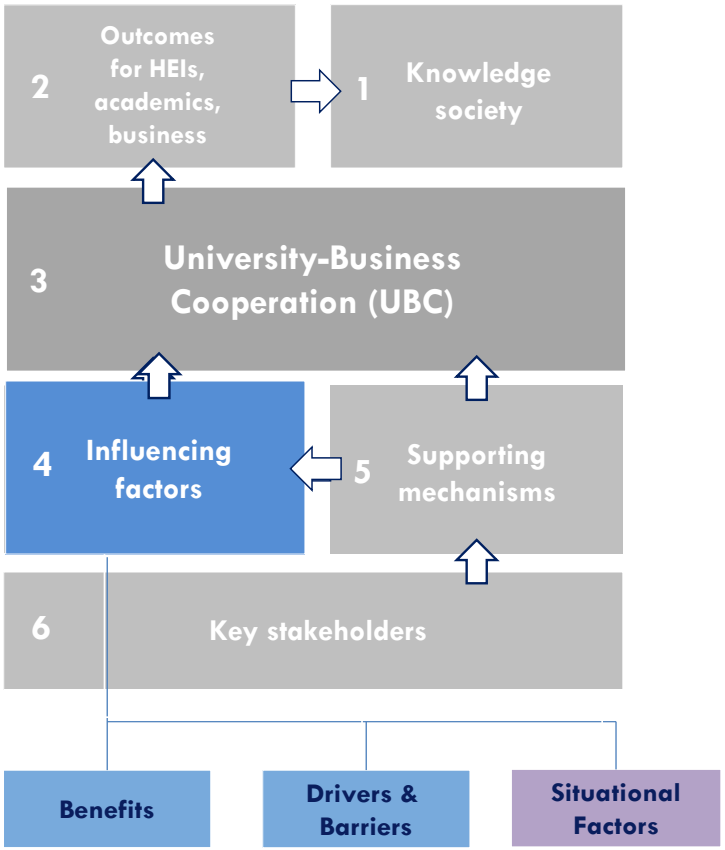
b) Barriers

c) Drivers

d) Perceived benefits

FINDING 8: Perceived benefits

ACAD



1 Students

2 Business

3 HEI

4 Personal

Academics recognise the high degree of benefits from successful UBC for different stakeholders…

however to a lower extent the personal benefits they receive from UBC.

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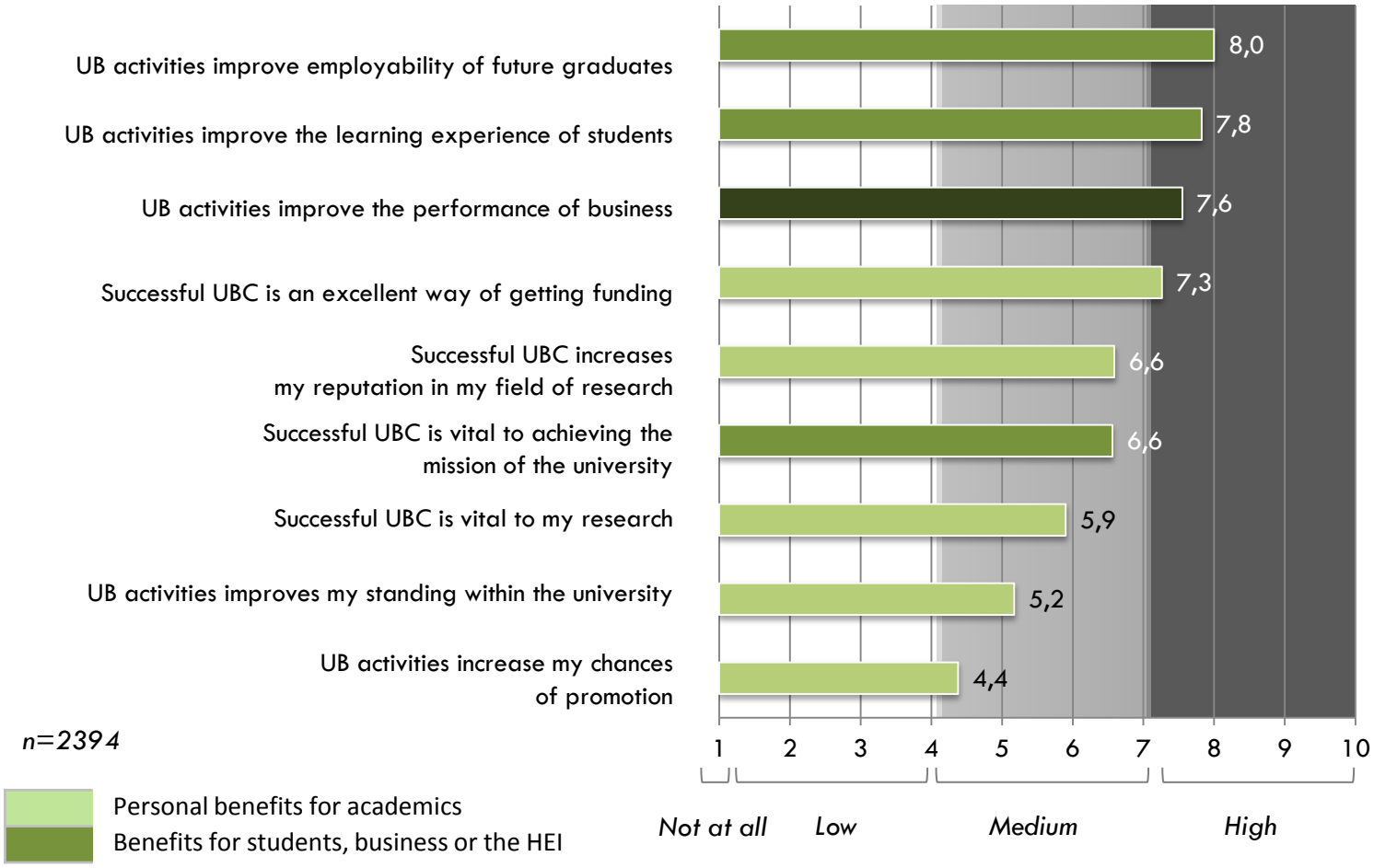
FINDING 8: Perceived benefits ACAD

Please indicate the extent to which you agree or disagree with the following statements.



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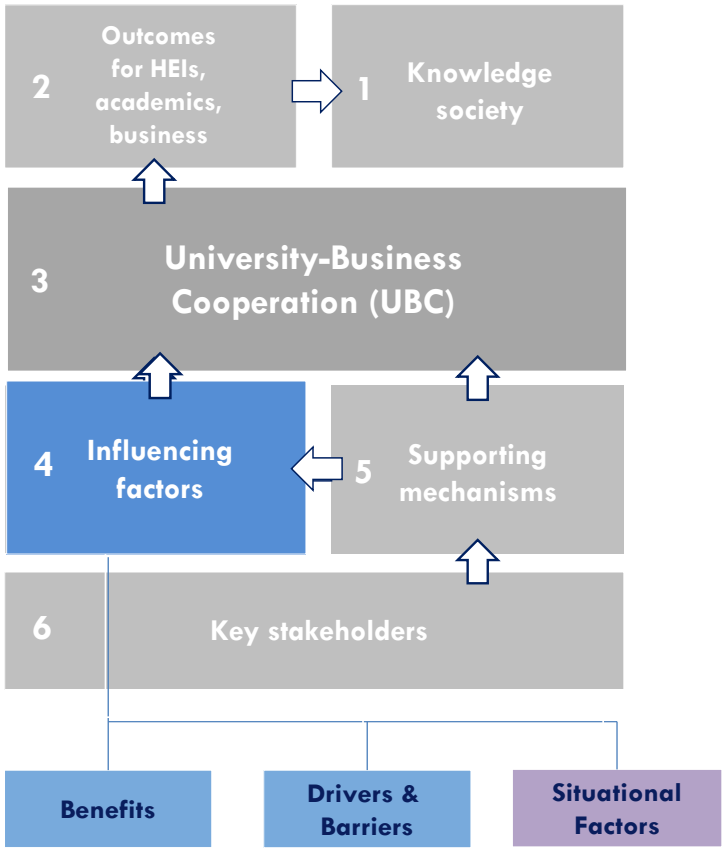
FINDING 8: Perceived benefits

HEIs



1 Students

2 Business

3 HEI

4 Society

HEIs rated the highest benefits for students, followed by business…

then the ability of UBC to contribute to the mission of the HEI with the lowest benefits perceived for society.

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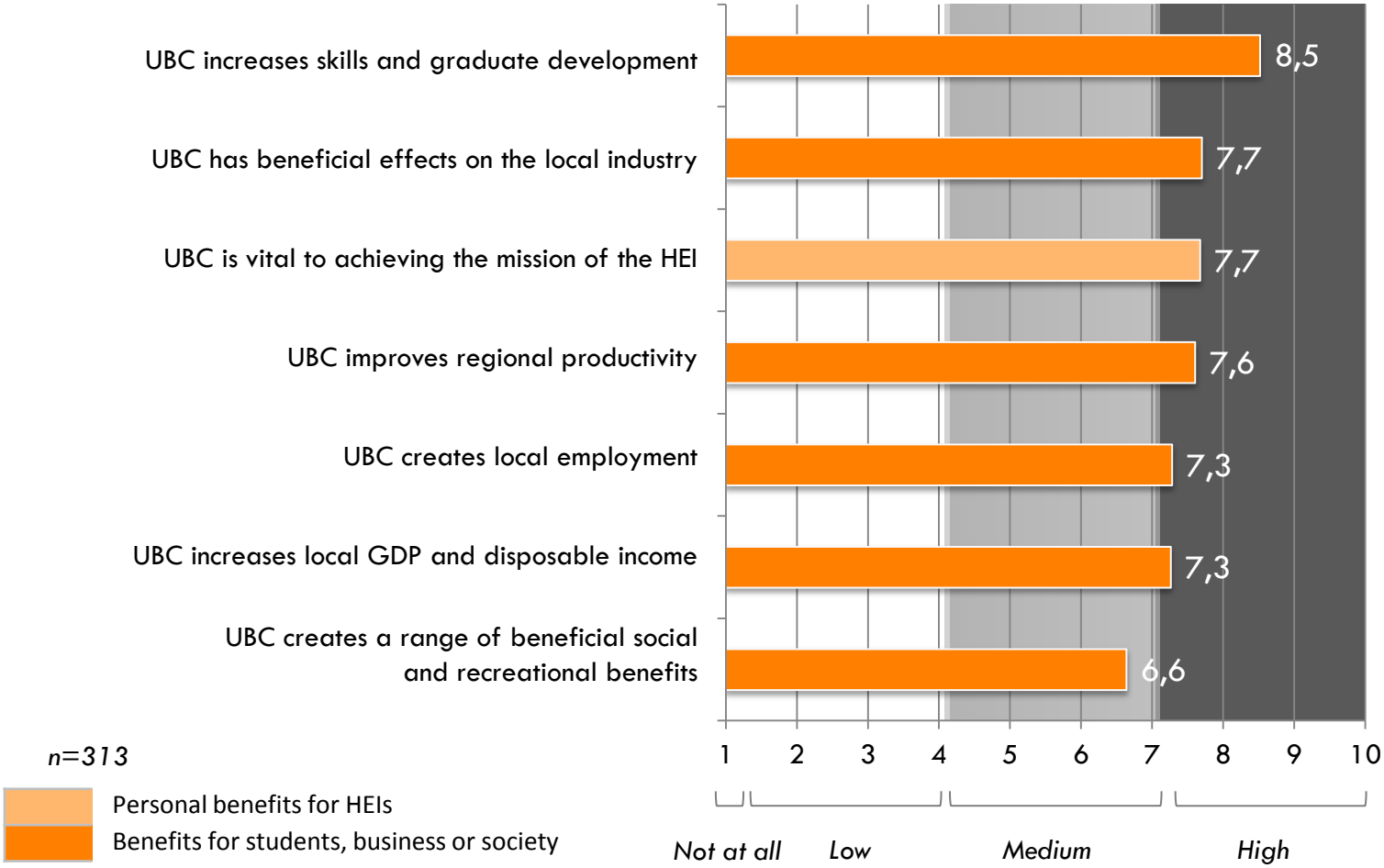
FINDING 8: Perceived benefits

HEIs

Please indicate the extent to which you agree or disagree with the following statements.



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Finding

8

Perceptions of high benefits & incentives drive UBC

The perception of self-benefit is a major factor in UBC.

The higher the perceived benefits, the higher the extent of UBC carried out.

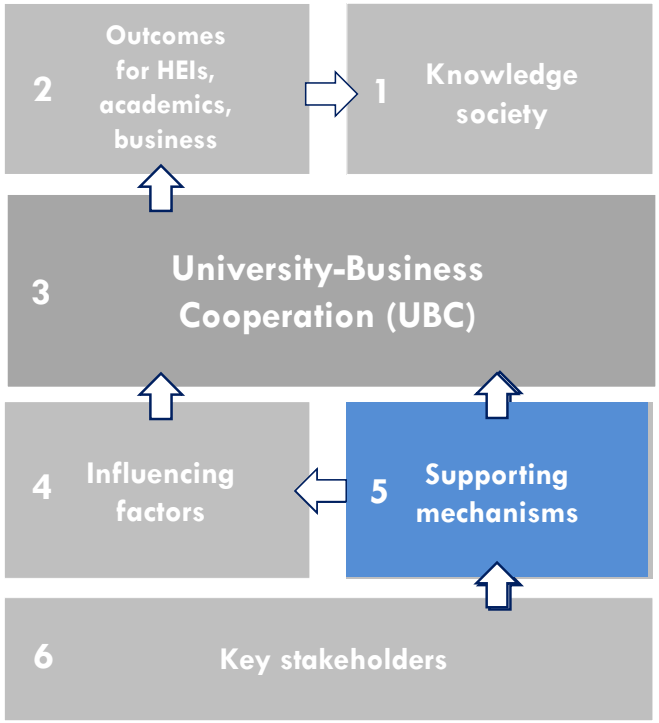
If influencing factors are only part of the explanation for UBC activity, what else can help to explain European UBC?

The existence of supporting mechanisms for UBC

1. Strategies
2. Structures and approaches
3. Operational activities, and
4. Framework conditions

9

FINDING 9: Supporting mechanisms



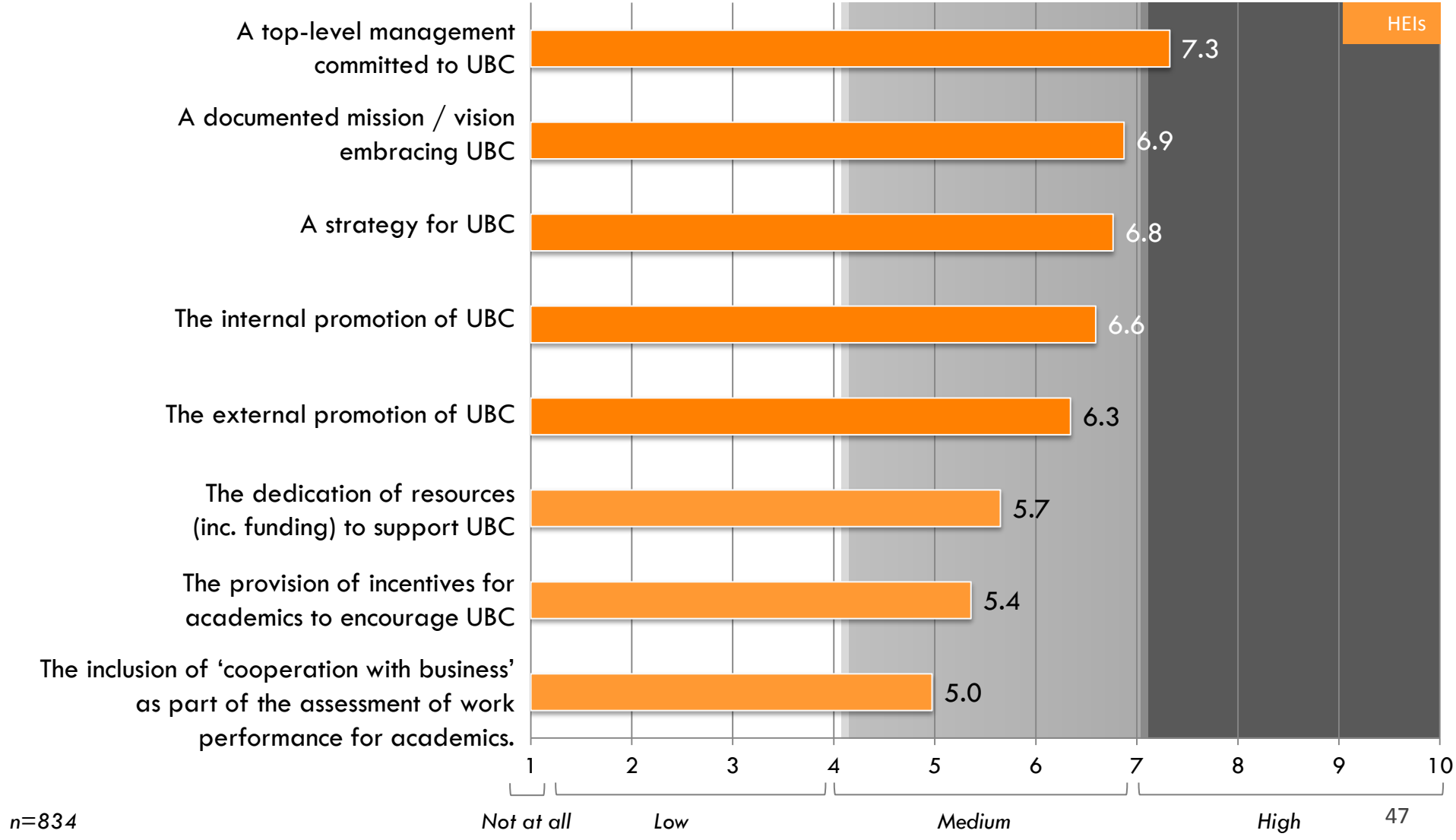
The creation and development of supporting mechanisms are critical for UBC

1. Strategies (4.9)
   a. Documented e.g. vision / mission,
   b. Implementation e.g. incentives
2. Structures or approaches (5.1)
   a. Positions i.e. personnel
   b. Agencies i.e. units of focus
3. Operational activities (5.4)
   a. Academic focussed
   b. Student focussed
4. Framework conditions (4.5)

FINDING 9: Strategies

HEIs

Thinking about <u>strategies</u> used <u>within your HEI</u>, how developed are the following points?



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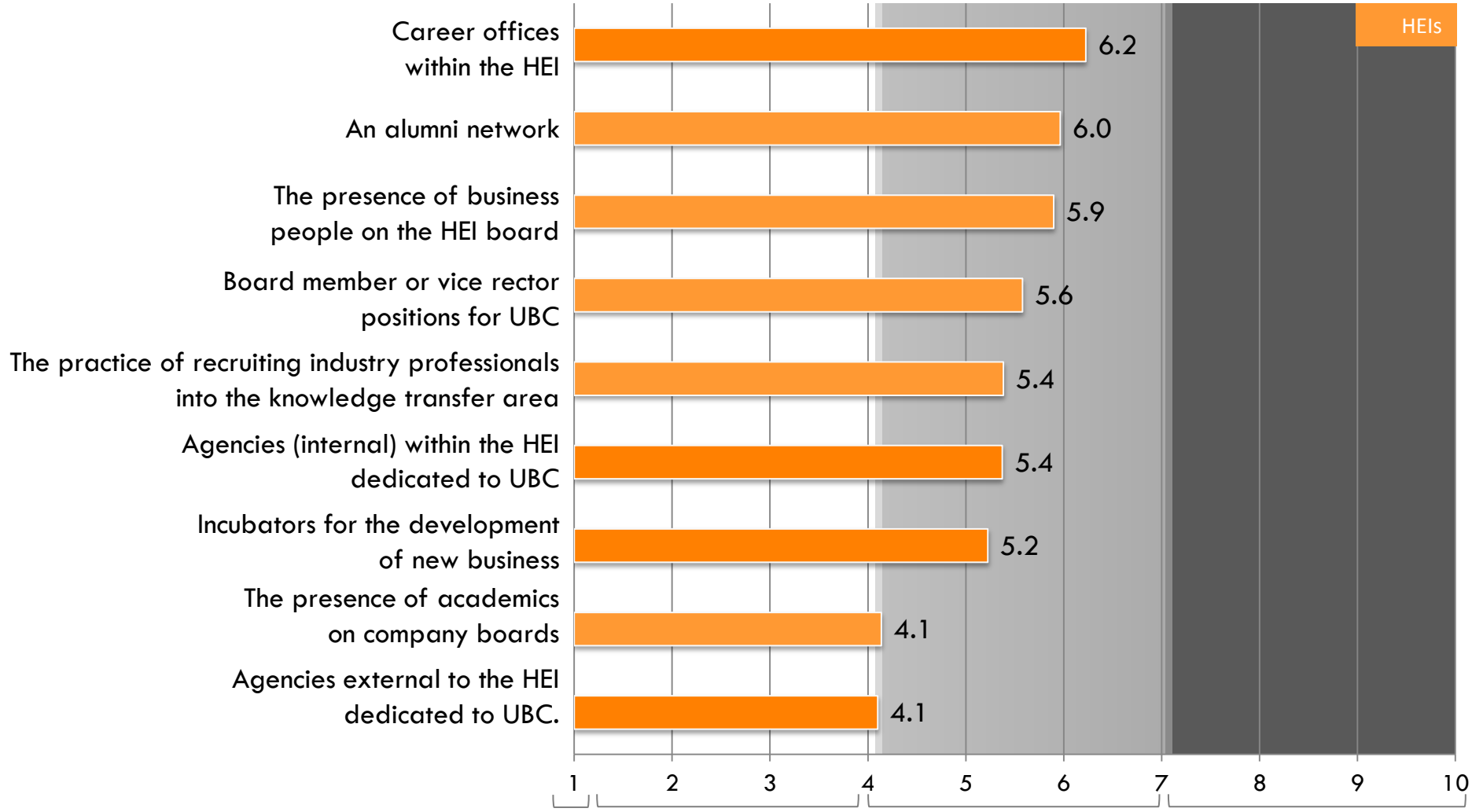
FINDING 9: Structures

HEIs

Thinking about <u>structures and approaches</u> used <u>within your HEI</u>, how developed are the following points?



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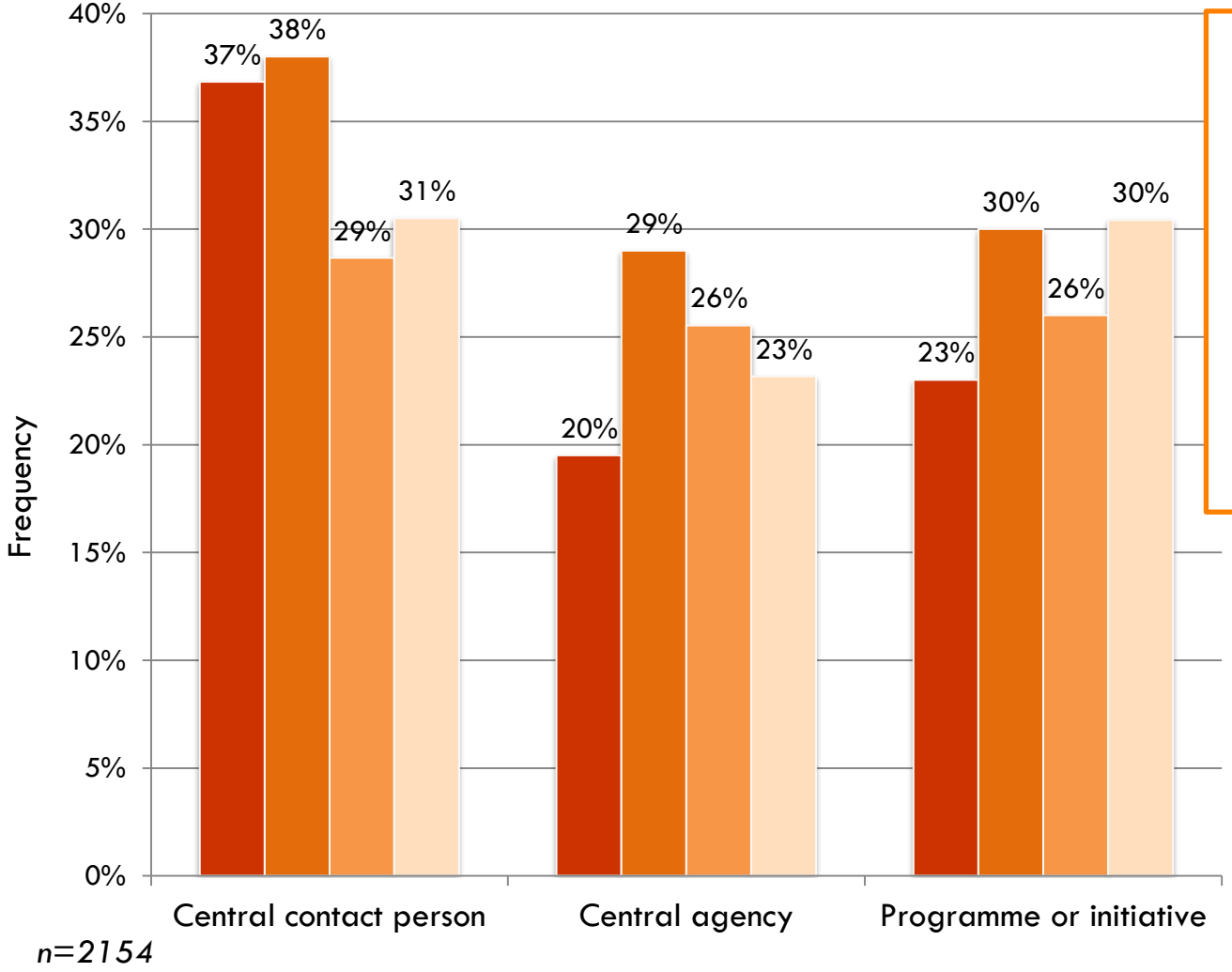
FINDING 9: Structures

HEIs

Possession of the facilitators supporting different types of cooperation



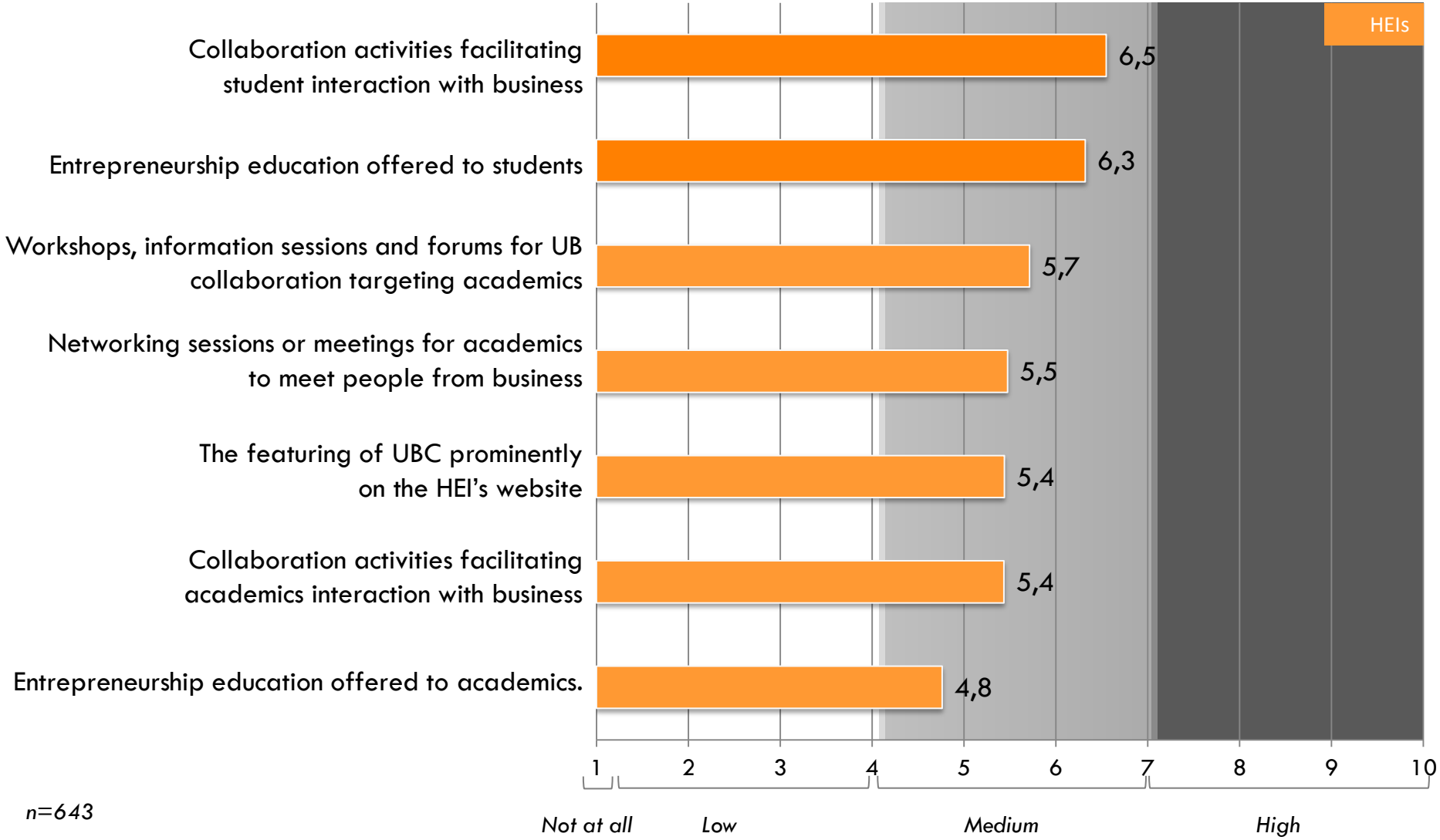
n=2154

Those HEIs with a specific contact person, contact agency or programme / initiative have a significantly higher development of these types of UBC in comparison to those that do not have them.

FINDING 9: Activities

HEIs

Thinking about <u>operational activities</u> used <u>within your HEI</u>, how developed are the following points?



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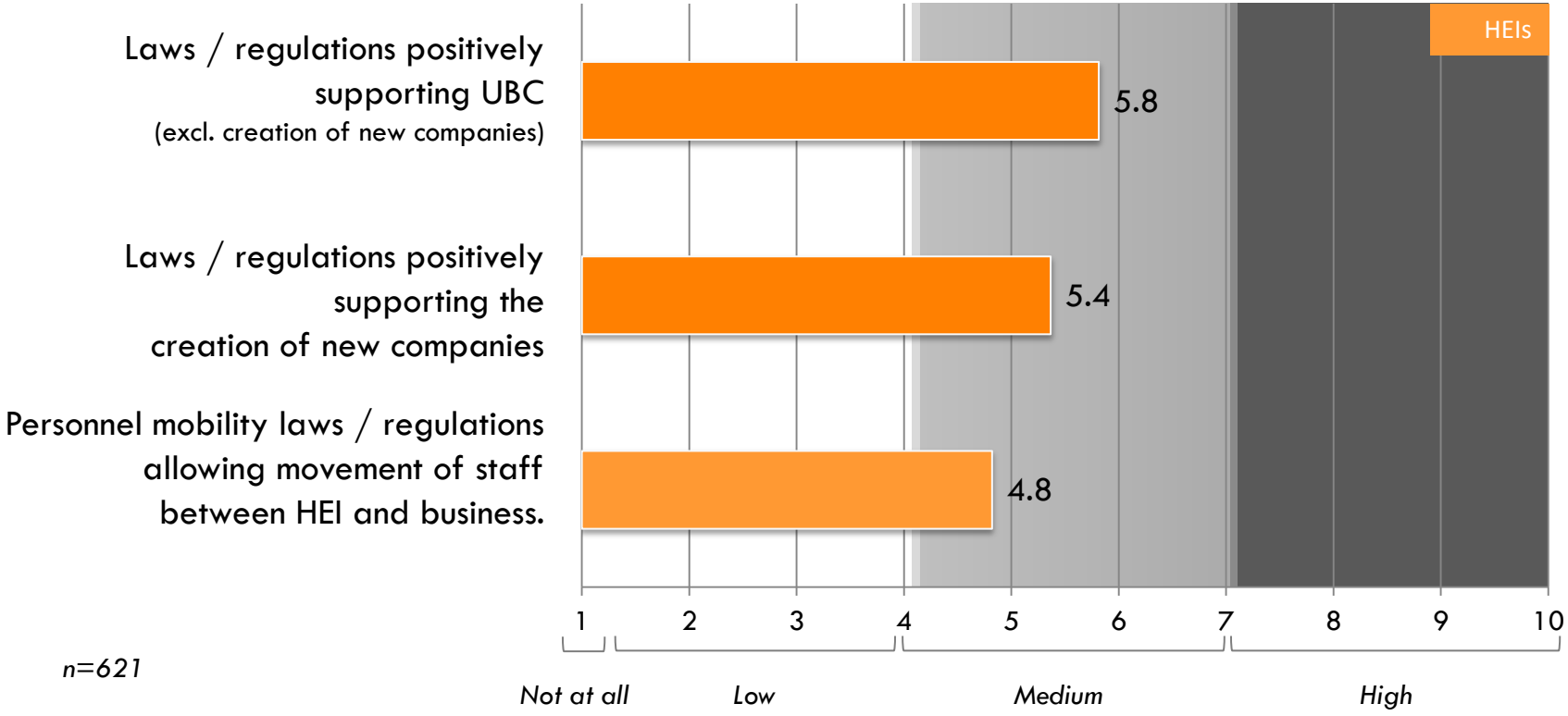
FINDING 9: Framework

Thinking about <u>the environment</u> that <u>your HEI</u> operates in, how developed are the following points?



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Finding

9

The creation and development of supporting mechanisms are critical for UBC

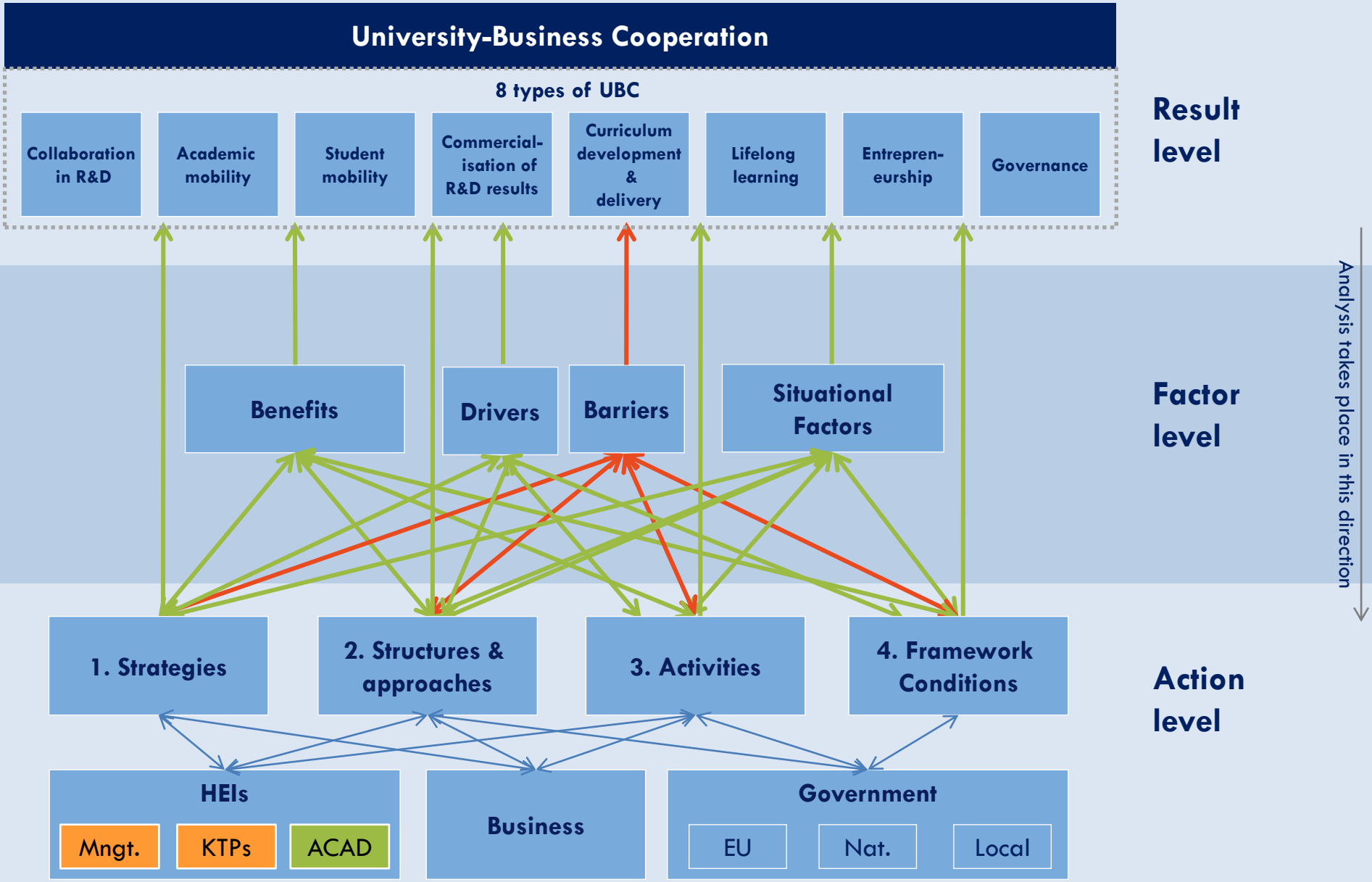
...since the higher the development of the mechanisms, the higher the extent of UBC.

The UBC supporting mechanisms that are easier to implement, are much more developed than those that are more difficult to implement

How do the previous findings interrelate and how reliable are they in explaining European UBC?

10

FINDING 10: The UBC Model



Finding

10

In the UBC ecosystem, the multiple actors need to work cooperatively…

…and in an integrated manner towards effectiveness and developed UBC.

If only one of those actors does not perform actively, the disruptive influence might be considerable enough to inhibit the whole momentum

A summary of key findings

1. UBC is vital in creating a knowledge society
2. UBC ecosystem is complex and integrated
3. UBC in Europe is at an early stage of development
4. All UBC types are interrelated so the cannot be addressed in isolation
5. Situational factors (e.g. country, faculty) help to explain UBC but there is little that can be implemented from these findings
6. Lack of funding and excess of bureaucracy at all levels are the highest barriers to UBC
7. Personal relationships drive UBC. It's a people game!
8. Perceptions of high benefits & incentives are motivators of UBC
9. The creation and development of supporting mechanisms are critical for UBC
10. In the UBC ecosystem, the multiple actors need to work cooperatively and in a coordinated manner toward effective UBC

What does this mean for HEIs, Govt. and key stakeholders?

A new paradigm is in play

New thinking is required to develop our societies through UBC

A more holistic approach to UBC is required beyond:

- Patents and licenses, paper strategies (mission / vision), creating a science park, one-off, short-term interactions …

Knowledge and support mechanisms must be increased based on a comprehensive understanding of the elements in the UBC ecosystem and their interrelations

What now?

Top 4 actions for stakeholders

1	2	3	4
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