University-enterprises cooperation in selected Western Balkan Countries - Report on the potential and activities

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Disclaimer

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<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEST</td>
<td>Board of European Students of Technology</td>
</tr>
<tr>
<td>CoE</td>
<td>Centre of Excellence</td>
</tr>
<tr>
<td>CSOs</td>
<td>Civil Society Organisations</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EIS</td>
<td>European Innovation Scoreboard</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EUIPO</td>
<td>European Union Intellectual Property Office</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investments</td>
</tr>
<tr>
<td>FHJ</td>
<td>FH JOANNEUM</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GEM</td>
<td>Global Entrepreneurship Monitor</td>
</tr>
<tr>
<td>HEI</td>
<td>Higher Educational Institution</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technologies</td>
</tr>
<tr>
<td>JRC</td>
<td>Joint Research</td>
</tr>
<tr>
<td>KA2</td>
<td>Key Action 2</td>
</tr>
<tr>
<td>NC DiEL</td>
<td>National Centre for Development of Innovation and Entrepreneurial Learning</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PCU</td>
<td>Partner Country University</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>SBA</td>
<td>Small Business Act</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SRIP</td>
<td>Science, Research and Innovation Performance</td>
</tr>
<tr>
<td>UIS</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>UKIM-FME</td>
<td>University “Ss. Cyril and Methodius”, Faculty of Mechanical Engineering</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>WB</td>
<td>Western Balkan</td>
</tr>
<tr>
<td>WBC</td>
<td>Western Balkan Countries</td>
</tr>
<tr>
<td>WEF</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>WIPO</td>
<td>World Intellectual Property Office</td>
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Introduction

This report is part of the project “Reconnecting universities and enterprises to unleash regional innovation and entrepreneurial activity / KnowHub” under the EU Erasmus + programme KA2 - Cooperation for innovation and the exchange of good practices – Capacity Building in the field of Higher Education. The KnowHub project is foreseen to be implemented from 15.11.2019 to 14.11.2022 by a consortium of 11 partners, among which, five are universities from three partner countries: Albania, Montenegro and Bosnia and Herzegovina. These partner country universities (PCUs) are: University of Vlora, European University of Tirana, University of Montenegro, University of Sarajevo and University of Mostar. The consortium is led by the organisation FH JOANNEUM University of Applied Sciences from Graz, Austria. The project is designed to improve the internal structures of the targeted PCUs and to develop capacities for cooperation with industry through close collaboration and network among the 5 PCUs from 3 Western Balkan Countries and with the 5 Programme countries partners. Through the involvement of students and professors in projects with the enterprises, the PCUs will increase their relevance to the labour market needs.

The project focuses on all three areas of the university’s action: research, technology transfer and teaching, with an overall objective of developing the cooperation between the enterprises and the HEI and consequently improving the (self)employability of the graduates. The project focuses on enriching engineering with entrepreneurship and innovation. The project is based on the development and functioning of the Commercialisation Hubs at each of the involved Partner Countries Universities for reaching more operative level and contributing to the sustainability and further development of the R&D activities. The Commercialisation Hubs unites the PCUs that serve as one-stop-shop for cooperation with industry, assuring regular cooperation projects in which professors and students will be actively involved. This will lead to higher employability of graduates. The Commercialisation Hubs will be equipped with novel and advanced technology. The project consortium has researched and selected the most promising novel technologies for new business set-up and growth, these technologies are Lean Manufacturing and Rapid Prototyping. The rapid prototyping technology has become a necessary instrument for technical and engineering sciences, medicine, urban planning etc, while the
Lean Manufacturing is very significant for increasing the competitiveness of the enterprises.

Lean Manufacturing is an advanced methodology that focuses on minimizing waste within manufacturing systems while simultaneously maximizing productivity. Waste is seen as anything that customers do not believe adds value and are not willing to pay for. This production method basis on 5 key principles: (1) precisely specify value by specific product; (2) identify the value stream for each product; (3) make value flow without interruptions; (4) let customer pull value from the producer; and (5) pursue perfection. Lean foresees continuous and incremental improvements on product and process while eliminating redundant activities. When adding new activities, the value is the main driver that considers only the activities the customer is willing to pay for, everything else is waste, and should be eliminated, simplified, reduced, or integrated. In the same notion, this paradigm proposes a methodology for developing businesses and products that aims to shorten product development cycles and rapidly discover if a proposed business model is viable. The Lean start-up methodology is employed by the start-ups by adopting a combination of business-hypothesis-driven experimentation, iterative product releases, and validated learning.

Rapid prototyping is the fast fabrication of a physical part, model or assembly using 3D computer aided design. The creation of the part, model or assembly is usually completed using additive manufacturing, or more commonly known as 3D printing. Rapid prototyping includes a variety of manufacturing technologies, although most utilise layered additive manufacturing. However, other technologies used for rapid prototyping include high-speed machining, casting, moulding and extruding. There are different types of rapid prototyping, such as Stereolithography or Vat Photopolymerization; Selective Laser Sintering; Fused Deposition Modelling or Material Jetting; Selective Laser Melting or Powder Bed Fusion, etc. Product designers use this process for rapid manufacturing of representative prototype parts. This can aid visualisation, design and development of the manufacturing process ahead of mass production.

The Commercialisation Hubs will offer entrepreneurial training for students and graduates following the Lean start-up methodology, and together with its specific equipment will be crucial point for early stage entrepreneurial activities.
About the research methodology

Vital part of this project is the in-depth assessment of the status-quo for the knowledge transfer, innovation and entrepreneurship at the partner country universities and more general, in the national ecosystems of the three WB countries: Albania, Montenegro and Bosnia and Herzegovina, which is summarized in this report.

For comprehensive and in-depth conduction of this research, the methodology that is outlined in this section was developed and implemented.

Aiming to analyse and understand the knowledge transfer, the entrepreneurial infrastructure and the activities at the universities firstly, and then the situation in the wider national ecosystems, the proposed methodological approach is a combination of quantitative and qualitative research principles. The assessment process consists of three broad phases:

1. Quantitative self-assessment at university level;
2. Qualitative self-assessment at the university level;
3. Qualitative assessment of the wider environment (regional and national ecosystem).

The questions that are of interest for the universities should be implemented with a wider group of different stakeholders. Therefore, the most suitable research methodology was conducting an online survey. For that purpose, various available methodologies were taken into account. It was decided that the most appropriate methodology in this respect is HEInnovate, which is an online tool developed as part of OECD and European Commission joint initiative. This tool actually assists researchers and Higher educational institutions in their strives to become innovative, foster entrepreneurship and generate value for the society and economy.

The HEInnovate online self-assessment tool is founded on the following 8 pillars:

1. Leadership and governance
2. Organisational capacity: Funding, people and incentives
3. Entrepreneurial teaching and learning
4. Preparing and supporting entrepreneurs
5. Digital transformation and capability
6. Knowledge exchange and collaboration
7. The internationalised institution
(8) Measuring impact

Each university aimed to conduct the survey with at least 30 respondents. The respondents belong to variety of stakeholder categories (students, researchers, professors, lecturers, administrative staff, management – Rector, Dean, vice rectors, vice-deans, financial staff, etc.), and at least 10 of them are external collaborators (businesses, start-ups, spin-offs, SMEs and other type of companies). The KnowHub methodology is presented in the Figure 1.

<table>
<thead>
<tr>
<th>I Phase</th>
<th>II Phase</th>
<th>III Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative self-assessment at the university level</td>
<td>Qualitative self-assessment at the university level</td>
<td>Qualitative assessment of the wider environment (local and national ecosystem)</td>
</tr>
<tr>
<td>HEInnovate self-assessment tool (1) Leadership and governance</td>
<td>HEInnovate Introductory Workshop</td>
<td>Meta-research of the National Knowledge Transfer, Innovation and Entrepreneurship Ecosystems</td>
</tr>
<tr>
<td>(2) Organisational capacity: Funding, people and incentives</td>
<td>Individual PCUs assessment reports</td>
<td>Discovery and verification workshop</td>
</tr>
<tr>
<td>(3) Entrepreneurial teaching and learning</td>
<td>Peer-review report</td>
<td>University-enterprises cooperation in selected WB Countries – Report on the potential and activities</td>
</tr>
<tr>
<td>(4) Preparing and supporting entrepreneurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Digital transformation and capability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Knowledge exchange and collaboration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) The internationalised institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Measuring impact</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1.** Know-hub methodology

When the survey was conducted, the phase (1) was completed and the assessment process continued with the phase (2) - Qualitative self-assessment at the university level. The method that was used in this phase is focus-group meeting with the self-assessment committee. Each university organised a workshop (HEInnovate Introductory workshop) with its committee members where they:

- Discussed the aggregated results from the HEInnovate survey
- Provided certain evidence for the achieved results, such as strategic documents from the university, relevant administrative procedures, institutional setup within the university (technology transfer offices, patent or intellectual property offices/centres/departments)
- Discussed and proposed some actions, measures or polices that might be of interest for improving the entrepreneurial status of the university and enhancing the university-business cooperation
- Identified the existing capacities that should be utilized in the Commercialisation hubs
The templates and other supporting documents for the workshops were prepared and provided to the project partners. With completion of the workshop and delivering of the Minutes of Meeting by each university, all the inputs for the development of the Individual PCUs assessment reports were gathered. The Individual PCUs assessment reports were peer-reviewed. Each individual PCU report was peer-reviewed by three partners: the PCU mentoring university and two additional partners that were not included in the assessment. All 15 individual peer-review reports are jointly presented in a Peer-review report. With this, the phase (2) was completed.

The process continued with phase (3) - Qualitative assessment of the wider environment (regional and national ecosystem). This phase was consisted of:

- Meta-research of the National Knowledge Transfer, Innovation and Entrepreneurship Ecosystems. Desk research of the secondary sources (strategic or policy documents on a local and national level, other relevant assessment exercises, such as: European Innovation Scoreboard, Community Innovation Survey, Mapping for Smart Specialisation, etc., relevant country/regional reports prepared by OECD, World Bank, EU, JRC etc.)
- Discovery and verification workshop. One Discovery and verification workshop was conducted at each PCU. The workshops were organised by the project team, facilitated by NCDIEL and monitored by the EU mentoring universities. These workshops aimed to verify the results and support with evidence the status-quo analyses at the PCUs and in the partner countries and linking the identified weaknesses and gaps with the activities and expected results
- Preparation of draft report “University-enterprises cooperation in selected Western Balkan Countries – Report on the potential and activities”
- Reviewing the draft report by FH Joanneum and University of Vaasa.
- Finalising and delivering the report
PART ONE: Gaps analysis of the knowledge transfer, innovation and entrepreneurship capacities and activities of the PCUs

This part of the report will collate the individual PCU reports and will include a joint overview and comparison of the state at all partner country universities.

**Table 1. Respondents per role for each PCU**

<table>
<thead>
<tr>
<th>Role</th>
<th>University of Tirana</th>
<th>University of Montenegro</th>
<th>University of Mostar</th>
<th>University of Sarajevo</th>
<th>University of Vlora</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative leader</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Dean/ Head of School/Faculty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Expert</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>External stakeholder</td>
<td>13</td>
<td>13</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>Post Doctoral</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Professor/Teacher</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>16</td>
<td>61</td>
</tr>
<tr>
<td>Rector/Vice chancellor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Student (Undergraduate - PhD)</td>
<td>27</td>
<td>12</td>
<td>8</td>
<td>11</td>
<td>14</td>
<td>72</td>
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<td>Other</td>
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<td>1</td>
<td>6</td>
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<td>7</td>
<td>3</td>
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<td>64</td>
<td>51</td>
<td>39</td>
<td>40</td>
<td>60</td>
<td>254</td>
</tr>
</tbody>
</table>

The Table 1 presents the general statistics of the collected dataset, given for each role type and divided per PCU. It can be noticed that the highest number of surveys are collected by the European University of Tirana – total of 64 answers. Although it is noticeable that not all role types are present in all PCUs, the role types which are of highest interest for this research: Professor/Teacher and External stakeholder are present for all PCUs with significant number of responses.

The same information aggregated per country (Tab. 2) evidenced that the responses which originate from Albania are by far the most present (124 in comparison to 79 responses for Bosnia and Herzegovina and 51 responses for Montenegro). The role types of highest interest: Professor/Teacher and External stakeholder, are present with 61 and 48 responses respectively.
Table 2. Respondents per role for each country

<table>
<thead>
<tr>
<th>Role</th>
<th>Albania</th>
<th>Bosnia and Herzegovina</th>
<th>Montenegro</th>
<th>Total</th>
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<tbody>
<tr>
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<td>13</td>
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<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Dean/Head of School/Faculty</td>
<td>4</td>
<td>2</td>
<td></td>
<td>6</td>
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<tr>
<td>Expert</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>External stakeholder</td>
<td>19</td>
<td>16</td>
<td>13</td>
<td>48</td>
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<td>Post Doctoral</td>
<td>1</td>
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<td>Professor/Teacher</td>
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<td>Technology Transfer Office/Function</td>
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<td>10</td>
<td>9</td>
<td>7</td>
<td>26</td>
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<tr>
<td>Total</td>
<td>124</td>
<td>79</td>
<td>51</td>
<td>254</td>
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</table>

University of Montenegro - statistical analyses

The average scores for the HEInnovate dimensions for the University of Montenegro (Fig. 2) fluctuate between 3.22 (Preparing and supporting entrepreneurs) and 3.75 (The internationalised institution).

![University of Montenegro]

**Figure 2.** Average scores for each HEInnovate dimension for the University of Montenegro

If we further deepen this result by analysing the exact questions that were posed for each dimension, we can identify the sources for the strengths and
weaknesses of the separate dimensions, and propose more appropriate measures for addressing the challenges. The detailed views on each HEInnovate dimension for the University of Montenegro are given on the Figures 2a. – 2h.

**Figure 2a.** Leadership and Governance at the University of Montenegro

Although there are no strong extremes among the separate researched questions under the Leadership and Governance dimension, the University of Montenegro’s strength in this respect comes from the fact that entrepreneurship is taking major part in the HEI’s strategy (Fig. 2a).

**Figure 2b.** Organisational Capacity at the University of Montenegro

The same conclusion is applicable to the Organisational Capacity, all researched questions have very close average scores.
In respect to the Entrepreneurial Teaching and Learning, the HEI collaboration with external stakeholders for designing and delivering the curriculum can be identified as slight weakness (Fig. 2c).

**Figure 2c. Entrepreneurial Teaching and Learning at the University of Montenegro**

Greater fluctuation than other HEInnovate dimensions can be noticed for Preparing and Supporting Entrepreneurs. In this area, the questions with the highest average score and with the lowest average score differ for almost one, so it can be concluded that the PCU’s strength is mentoring and other forms of personal development, while its weakness is facilitating access to finances for its entrepreneurs (Fig. 2d).

**Figure 2d. Preparing and Supporting Entrepreneurs at the University of Montenegro**
The next four researched dimensions: Digital Transformation and Capability, Knowledge Exchange and Collaboration, The Internationalised Institution and Measuring Impact (Figures 2e, 2f, 2g and 2h respectively) also do not have major fluctuations.
The weakest area for this PCU that deserves special attention to be paid on, is Preparing and supporting entrepreneurs. From the detailed chart (Fig. 2d), it can be seen the weakness stems from the failure of facilitating the access to the finances for entrepreneurs. On the other hand, the internationalised character of the institution is recognised by the respondents, thanks to the explicit support of the international mobility of PCU’s staff and students (Fig. 2g).

The HEInnovate dimensions that are of highest relevance for this project are Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration, and for the PCU of Montenegro, these dimensions have
average scores of 3.26 and 3.55 respectively. When we discuss the Knowledge Exchange and Collaboration, from the detailed view we can evidence that the weakness for this dimension stems from the relatively weak links with science parks, incubators and other external initiatives, while for the Entrepreneurial Teaching and Learning, from the failure of the university to co-design and deliver the curriculums with external stakeholders.

**Figure 3.** Average scores for different groups of respondents at the University of Montenegro

The respondents from various role categories have assessed the dimensions slightly differently, as it can be seen from Figure 3. The extremely highest scores are given by the post-doctoral respondents, while the lowest by the professors and teachers. However, the result for the post-doctoral role is not credible enough, because it originates from a single respondent (Tab. 1).
Figure 3a. Average scores of Professor/Teacher and External stakeholder roles at the University of Montenegro

Of higher interest for this research is the comparison between professors/teachers and external stakeholders, which can be observed from the Figure 3a. The average scores for the internal stakeholders (professors, teachers) are in general consistently lower than the external stakeholders for approximately one grade. The only deviation from this conclusion is noticed for the dimension The Internationalised Institution, but we can realise that this is a consequence of the professors/teachers being more aware of the explicit support of the international mobility of PCU’s staff and students.
University of Mostar - statistical analyses

Figure 4. Average scores for each HEInnovate dimension for the University of Mostar

The average scores for the HEInnovate dimensions for the University of Mostar (Fig. 4) fluctuate between 2.23 (Measuring Impact) and 2.93 (Knowledge Exchange and Collaboration). The detailed views on each posed question for all HEInnovate dimensions for the University of Mostar are given on the Figures 4a. – 4h.

Figure 4a. Leadership and Governance at the University of Mostar

In respect to the Leadership and Governance, organised coordination and integration of entrepreneurial activities across the HEI is an identified weakness,
while the strong side is putting the entrepreneurship as a major part of the HEI’s strategy (Fig. 4a).

![Organisational Capacity at the University of Mostar](image)

**Figure 4b. Organisational Capacity at the University of Mostar**

The next two researched HEInnovate dimensions: Organisational Capacity and Entrepreneurial Teaching and Learning showed minor fluctuations among the posed questions (Fig. 4b and 4c).

![Entrepreneurial Teaching and Learning at the University of Mostar](image)

**Figure 4c. Entrepreneurial Teaching and Learning at the University of Mostar**
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Preparation and Support for Entrepreneurs

<table>
<thead>
<tr>
<th>Score</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.43</td>
<td>The HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture.</td>
</tr>
<tr>
<td>2.42</td>
<td>The HEI supports its students, graduates and staff to move from idea generation to business creation.</td>
</tr>
<tr>
<td>2.39</td>
<td>Training is offered to assist students, graduates and staff in starting, running and growing a business.</td>
</tr>
<tr>
<td>2.79</td>
<td>Mentoring and other forms of personal development are offered by experienced individuals from academia or industry.</td>
</tr>
<tr>
<td>2.03</td>
<td>The HEI facilitates access to financing for its entrepreneurs.</td>
</tr>
<tr>
<td>2.50</td>
<td>The HEI offers or facilitates access to business incubation.</td>
</tr>
</tbody>
</table>

**Figure 4d.** Preparing and Supporting Entrepreneurs at the University of Mostar

Preparing and Supporting Entrepreneurs is scored with the second lowest average score, mainly because HEI does not facilitate access to financing for its entrepreneurs (Fig. 4d).

Digital Transformation and Capability

<table>
<thead>
<tr>
<th>Score</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.75</td>
<td>The HEI fosters a digital culture as a mean for innovation and entrepreneurship.</td>
</tr>
<tr>
<td>2.92</td>
<td>The digital infrastructure is planned, managed and continuously improved to align with the vision, mission and strategy of the innovative HEI.</td>
</tr>
<tr>
<td>3.00</td>
<td>The HEI is committed to digital teaching, learning and assessment practices.</td>
</tr>
<tr>
<td>2.44</td>
<td>Open science and innovation practices are widespread across the HEI.</td>
</tr>
<tr>
<td>2.86</td>
<td>The HEI has a dynamic digital presence supporting all its activities.</td>
</tr>
</tbody>
</table>

**Figure 4e.** Digital Transformation and Capability at the University of Mostar
The second highest average score is given for the Digital Transformation and Capability and The Internationalised Institution, because the HEI is well committed to digital teaching, learning and assessment (Fig. 4e), and the HEI supports the staff and students' international mobility (Fig. 4g).

**Figure 4f. Knowledge Exchange and Collaboration at the University of Mostar**

The areas: Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration are of higher relevance and should be observed more closely. Although there are no great variations among individual questions for the former, the situation could be improved by integrating the results of entrepreneurship research into the entrepreneurial education offer (Fig. 4c). Contrary for the latter, the difference between the lowest and the highest scored question is slightly bigger; therefore we can discuss that the weakness for the Knowledge Exchange and Collaboration stems from the weak integration of the community activities for exploitation new knowledge (Fig. 4f).

**Figure 4g. The Internationalised Institution at the University of Mostar**

Internationalisation is an integral part of the HEI's entrepreneurial agenda. The HEI explicitly supports the international mobility of its staff and students. The HEI seeks and attracts international and entrepreneurial staff. International perspectives are reflected in the HEI's approach to teaching. The international dimension is reflected in the HEI's approach to research.
Measuring Impact

<table>
<thead>
<tr>
<th>Measure</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>The HEI regularly assesses the impact of its entrepreneurial agenda.</td>
<td>2.17</td>
</tr>
<tr>
<td>The HEI regularly assesses how its personnel and resources support its entrepreneurial agenda.</td>
<td>2.15</td>
</tr>
<tr>
<td>The HEI regularly assesses entrepreneurial teaching and learning across the institution.</td>
<td>2.31</td>
</tr>
<tr>
<td>The HEI regularly assesses the impact of start-up support.</td>
<td>2.06</td>
</tr>
<tr>
<td>The HEI regularly assesses knowledge exchange and collaboration.</td>
<td>2.39</td>
</tr>
<tr>
<td>The HEI regularly assesses the institution’s international activities in relation to its entrepreneurial agenda.</td>
<td>2.32</td>
</tr>
</tbody>
</table>

**Figure 4h. Measuring Impact at the University of Mostar**

The HEInnovate dimension Measuring Impact is characterised with negligible difference among the questions, which means we could not discuss the strengths and weaknesses for that area (Fig. 4h).

**Figure 5. Average scores for different groups of respondents at the University of Mostar**
In respect to the behaviour of the various respondents’ groups, Figure 5 shows significant difference between certain groups. However, the behaviours between the professors/teachers and external stakeholders are with similar pattern, evidencing slightly higher average scores by internal stakeholders, than by external stakeholders (Fig. 5a).

**Figure 5a.** Average scores of Professor/Teacher and External stakeholder roles at the University of Mostar
University of Sarajevo - statistical analyses

**University of Sarajevo**

![Bar chart](chart.png)

**Figure 6. Average scores for each HEInnovate dimension for the University of Sarajevo**

The average scores for the HEInnovate dimensions for the University of Sarajevo (Fig. 6) fluctuate between 2.51 (Measuring Impact) and 2.94 (The Internationalised Institution). The detailed views on each posed question for all HEInnovate dimensions for the University of Sarajevo are given on the Figures 6a. - 6h.

![Leadership and Governance chart](chart.png)

**Figure 6a. Leadership and Governance at the University of Sarajevo**

The HEInnovate dimension Leadership and Governance has slight weakness due to lacking a model for coordinating and integrating entrepreneurial activities across the HEI.
activities across HEI, while the strong side stems from the fact that entrepreneurship plays significant part in the HEI’s overall strategy (Fig. 6a).

**Figure 6b. Organisational Capacity at the University of Sarajevo**

The dimension Organisational Capacity has the second lowest average score. The analysis of the separate questions that were posed shows that the difference among average score is minor (all scores are between 2.44 and 2.95), as presented on Figure 6b. It might be discussed that the weakness in this area is the financial aspect: insufficient funding and investment sources for supporting the entrepreneurial objectives, as well as lack of incentives and rewards for the staff supporting the entrepreneurial agenda.

**Figure 6c. Entrepreneurial Teaching and Learning at the University of Sarajevo**
The HEInnovate dimension Entrepreneurial Teaching and Learning, which is actually of highest relevance for this research, has gained slightly lower average score, which means it is a priority the identified weaknesses to be addressed in future project activities. According to the results given on Figure 6c, except the first question that refers to providing diverse formal learning entrepreneurial opportunities, the remaining four questions that having similar average scores uncover the possible areas for improvements: informal learning entrepreneurial opportunities; validation of the learning outcomes and addressing them in entrepreneurial curricula; curricula developed in cooperation with external stakeholders; as well as integration of the entrepreneurship research in entrepreneurial education offer.

In respect to the dimension Preparing and Supporting Entrepreneurs, it can be noticed that the weakest part refers to the facilitation of the access to finances for the entrepreneurs, while the strength comes from the mentoring and personal development facilitated by experts from the academia and industry (Fig. 6d).
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Figure 6e. Digital Transformation and Capability at the University of Sarajevo

Similarly, in respect to the Digital Transformation and Capability, the weakest side is the open science and innovation practices that should be widespread across the HEI, while the relative strength comes from the fact that the HEI is committed to digital teaching, learning and assessment practices (Fig. 6e).

Figure 6f. Knowledge Exchange and Collaboration at the University of Sarajevo

The area Knowledge Exchange and Collaboration, which is prioritised in this research, does not have emphasized peaks (Fig. 6f). The results can indicate
that the HEI should strengthen its links with incubators, science parks and other external initiatives.

**Figure 6g.** The Internationalised Institution at the University of Sarajevo

For the recognition of the University of Sarajevo as an internationalised institution, clearly the most important part plays the explicit support of its staff and students in their international mobility, while the university should strengthen its efforts to attract international and entrepreneurial staff (Fig. 6g).

**Figure 6h.** Measuring Impact at the University of Sarajevo

Finally, the last researched dimension - Measuring Impact, showed minor fluctuations among the posed questions (Fig. 6h); therefore, pointing out specific areas for improvement is not supported with the research results.
The respondents from various role categories have assessed the dimensions slightly differently, as it can be seen from Figure 7. The extremely highest scores are given by the experts, while the lowest by one responded who classified himself as “Other”. Both conclusions are not credible and will not be taken into account because they are result of only one respondent for both role categories: “Expert” and “Other”.

**Figure 7.** Average scores for different groups of respondents at the University of Sarajevo
**Figure 7a.** Average scores of Professor/Teacher and External stakeholder roles at the University of Sarajevo

Of higher interest for this research is the comparison between professors/teachers and external stakeholders, which can be observed from the Figure 7a. It is interesting to be noticed that the average scores for the internal stakeholders (professors, teachers) are almost the same with those for the external stakeholders.
European University of Tirana - statistical analyses

Fig. 8. Average scores for each HEInnovate dimension for the European University of Tirana

The average scores for the HEInnovate dimensions for the European University of Tirana (Fig. 8) fluctuate between 3.62 (Organisational Capacity: Funding People and Incentives) and 4.11 (The Internationalised Institution). The detailed views on each posed question for all HEInnovate dimensions for the University of Sarajevo are given on the Figures 8a. - 8h.

Leadership and Governance

- Entrepreneurship is a major part of the HEI’s strategy. (3.81)
- There is commitment at a high level to implementing the entrepreneurial agenda. (3.58)
- There is a model in place for coordinating and integrating entrepreneurial activities across the HEI. (3.47)
- The HEI encourages and supports faculties and units to act entrepreneurially. (4.00)
- The HEI is a driving force for entrepreneurship and innovation in regional, social and community development. (3.74)

Fig. 8a. Leadership and Governance at the European University of Tirana

In respect to the Leadership and Governance, organised coordination and integration of entrepreneurial activities across the HEI is an identified weakness,
while the strong side is the encouragement and support of the faculties and units to act entrepreneurially (Fig. 8a).

**Figure 8b.** Organisational Capacity at the European University of Tirana

The HEInnovate dimension Organisational Capacity has slight weakness due to lack of sustainable funding and investments in entrepreneurial objectives, while the strength comes from the HEI’s openness for engaging and recruiting entrepreneurial individuals (Fig. 8b).

**Figure 8c.** Entrepreneurial Teaching and Learning at the European University of Tirana

It is interesting to be noted that five from the remaining HEInnovate dimensions have minor (less than 0.5) variations among the average scores for the
researched questions, which means the sources for the strengths and weaknesses for these dimensions cannot be precisely determined. These dimensions are: Entrepreneurial Teaching and Learning, Preparing and Supporting Entrepreneurs, Digital Transformation and Capability, The Internationalised Institution and Measuring Impact (Fig. 8c, Fig. 8d, Fig. 8e, Fig. 8g, Fig. 8h respectively).

![Preparing and Supporting Entrepreneurs](image)

**Figure 8d.** Preparing and Supporting Entrepreneurs at the European University of Tirana

![Digital Transformation and Capability](image)

**Figure 8e.** Digital Transformation and Capability at the European University of Tirana
In respect to the Knowledge Exchange and Collaboration, which is of higher relevance for this project, weak and insufficient links with incubators, science parks and other external initiatives is an identified weakness, while the strong side is facilitating the staff and students to participate in innovative activities with external stakeholders (Fig. 8f).

**Figure 8g.** The Internationalised Institution at the European University of Tirana
In respect to the behaviour of the various respondents’ groups, Figure 9 shows significant difference between certain groups. In fact, the most distant views
among all respondent groups evidenced the professors/teachers and external stakeholders. Analysed more carefully on the Figure 9a, the average score of the responses given by the external stakeholders are lower for at least one grade than the average scores of the professors and teachers for each researched HEInnovate dimension.

**Figure 9a.** Average scores of Professor/Teacher and External stakeholder roles at the European University of Tirana
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University of Vlora - statistical analyses

Figure 10. Average scores for each HEInnovate dimension for the University of Vlora

The average scores for the HEInnovate dimensions for the University of Vlora (Fig. 10) fluctuate between 3.09 (Preparing and Supporting Entrepreneurs) and 3.64 (The Internationalised Institution). The detailed views on each posed question for all HEInnovate dimensions for the University of Vlora are given on the Figures 10a. – 10h.

Figure 10a. Leadership and Governance at the University of Vlora

The detailed views of the separate HEInnovate dimensions show that there are minor variations (less than 0.5) in the average scores for the researched questions for the majority of the dimensions. Namely, these dimensions are:
Leadership and Governance, Entrepreneurial Teaching and Learning, Preparing and Supporting Entrepreneurs, Digital Transformation and Capability, The Internationalised Institution and Measuring Impact (Fig. 10a, Fig. 10c, Fig. 10d, Fig. 10e, Fig. 10g, Fig. 10h respectively). This means the sources for the strengths and weaknesses for these dimensions cannot be precisely determined.

**Figure 10b. Organisational Capacity at the University of Vlora**

The HEInnovate dimension Organisational Capacity has slight weakness due to lacking sustainable funding and investments for supporting the entrepreneurial agenda, while the strong side stems from the HEI’s capacity and culture to build new relationships and synergies across the institution (Fig. 10b).

**Figure 10c. Entrepreneurial Teaching and Learning at the University of Vlora**
Although there are no significant variations among the posed questions for the Entrepreneurial Teaching and Learning, which is an area of high interest in this project, it is interesting to be noticed that two of the questions have the lowest average score of 3.19 (Fig. 10c). Therefore, we can indicate that by addressing these two weaknesses: providing formal entrepreneurial learning opportunities and creating the curricula in collaboration with external stakeholders, the overall result in respect to the Entrepreneurial Teaching and Learning could be improved.

**Figure 10d.** Preparing and Supporting Entrepreneurs at the University of Vlora

<table>
<thead>
<tr>
<th>The HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture.</th>
<th>The HEI supports its students, graduates and staff to move from idea generation to business creation.</th>
<th>Training is offered to assist students, graduates and staff in starting, running and growing a business.</th>
<th>Mentoring and other forms of personal development are offered by experienced individuals from academia or industry.</th>
<th>The HEI facilitates access to financing for its entrepreneurs.</th>
<th>The HEI offers or facilitates access to business incubation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.20</td>
<td>3.23</td>
<td>2.87</td>
<td>3.16</td>
<td>3.05</td>
<td>3.14</td>
</tr>
</tbody>
</table>

**Figure 10e.** Digital Transformation and Capability at the University of Vlora

<table>
<thead>
<tr>
<th>The HEI fosters a digital culture as a mean for innovation and entrepreneurship.</th>
<th>The digital infrastructure is planned, managed and continuously improved to align with the vision, mission and strategy of the innovative HEI.</th>
<th>The HEI is committed to digital teaching, learning and assessment practices.</th>
<th>Open science and innovation practices are widespread across the HEI.</th>
<th>The HEI has a dynamic digital presence supporting all its activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.28</td>
<td>3.27</td>
<td>3.15</td>
<td>3.35</td>
<td>3.28</td>
</tr>
</tbody>
</table>
Figure 10f. Knowledge Exchange and Collaboration at the University of Vlora

The HEInnovate dimension Knowledge Exchange and Collaboration that is also of highest relevance for this project has an average score of 3.40. From the detailed view (Fig. 10f), we can evidence that the weakness for this dimension stems from the relatively weak links with science parks, incubators and other external initiatives. On the other hand, the strong side of the HEI is its commitment for collaboration and knowledge exchange with industry, the public sector and the society.

Figure 10g. The Internationalised Institution at the University of Vlora
In respect to the behaviour of the various respondents’ groups, Figure 11 shows significant difference between certain groups. The graph from the respondent type “Researcher” has quite unique shape, which comes from highest difference among the average scores of certain HEInnovate dimensions, but due to the fact that there is only one respondent from this respondent type, this result will not be considered as credible enough and will not be taken into account.

**Figure 10h. Measuring Impact at the University of Vlora**

**Figure 11. Average scores for different groups of respondents at the University of Vlora**
Figure 11a. Average scores of Professor/Teacher and External stakeholder roles at the University of Vlora

The behaviours between the professors/teachers and external stakeholders are with similar pattern, evidencing slightly higher average scores by internal stakeholders, than by external stakeholders for some of the HEInnovate dimensions (Fig. 11a).
PART TWO: National knowledge transfer, innovation and entrepreneurship ecosystems in the target countries

This part of the report will present the national relevant ecosystems organised in 3 chapters:

- Statistical data
- Existing infrastructure (physical, organisational and services offered)
- Upcoming trends, overview and comparison

Statistical data

For facilitating the country-specific analyses and generating conclusions and recommendations on a national level, the collected results were aggregated per country. Two of the researched WB countries: Albania and Bosnia and Herzegovina, were represented with two universities each, while the country Montenegro was presented with only one university. Therefore, the aggregated results are prepared for the Albania and Bosnia and Herzegovina only, as well as for the overall Western Balkan region, combining the results of the all 5 PCUs.

Aggregated statistical data for Albania

The figure below shows the average scores for each HEInnovate dimension for the universities in Albania.

**Figure 12.** Average scores for each HEInnovate dimension for the universities in Albania
The average scores for the HEInnovate dimensions for the universities in Albania (Fig. 12) fluctuate between 3.42 (Preparing and Supporting Entrepreneurs) and 3.91 (The Internationalised Institution). The detailed views on each posed question for all HEInnovate dimensions for the Albanian universities are given on the Figures 12a. - 12h.

**Figure 12a. Leadership and Governance at the universities in Albania**

Similarly to the results of the individual Albanian universities, the joined dataset for both Albanian universities shows minor variations (less than 0.5) among the average scores for the posed questions for six HEInnovate dimensions: Leadership and Governance, Entrepreneurial Teaching and Learning, Preparing and Supporting Entrepreneurs, Digital Transformation and Capability, The Internationalised Institution and Measuring Impact (Fig. 12a, Fig. 12c, Fig. 12d, Fig. 12e, Fig. 12g and Fig. 12h respectively). This means the sources for the strengths and weaknesses for these dimensions cannot be precisely determined.

**Figure 12b. Organisational Capacity at the universities in Albania**
The HEInnovate dimension Organisational Capacity has slight weakness due to lacking sustainable funding and investments for supporting the entrepreneurial objectives of the HEI, while the strong side stems from the HEI’s capacity and culture to build new relationships and synergies across the institution (Fig. 12b).

**Figure 12c.** Entrepreneurial Teaching and Learning at the universities in Albania

**Figure 12d.** Preparing and Supporting Entrepreneurs at the universities in Albania
The HEInnovate dimensions that are of highest relevance for this project are Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration, and for the PCUs in Albania, these dimensions have average scores of 3.54 and 3.58 respectively. The detailed view for the former showed that the weaknesses cannot be determined precisely due to the minor difference among the separate average scores (Fig. 12c). In contrast, the detailed view for the latter evidences that the weakness for the Knowledge Exchange and Collaboration stems from the relatively weak links with science parks, incubators and other external initiatives (Fig. 12f).
Figure 12g. The Internationalised Institution at the universities in Albania

Figure 12h. Measuring Impact at the universities in Albania

The respondents from various role categories have assessed the dimensions slightly differently, as it can be seen from Figure 13. Of higher interest for this research is the comparison between professors/teachers and external stakeholders, which can be observed from the Figure 13a. The average scores for the internal stakeholders (professors, teachers) are in general consistently lower than the average scores given by the external stakeholders.
Figure 13. Average scores for different groups of respondents at the universities in Albania

Figure 13a. Average scores of Professor/Teacher and External stakeholder roles at the universities in Albania
Aggregated statistical data for Bosnia and Herzegovina

The average scores for the HEInnovate dimensions for the universities in Bosnia and Herzegovina (Fig. 14) fluctuate between 2.37 (Measuring Impact) and 2.91 (Knowledge Exchange and Collaboration). The detailed views on each posed question for all HEInnovate dimensions for the universities in Bosnia and Herzegovina are given on the Figures 14a. – 14h.

**Figure 14.** Average scores for each HEInnovate dimension for the universities in Bosnia and Herzegovina

**Leadership and Governance**

- Entrepreneurship is a major part of the HEI's strategy: 3.11
- There is commitment at a high level to implementing the entrepreneurial agenda: 2.82
- There is a model in place for coordinating and integrating entrepreneurial activities across the HEI: 2.38
- The HEI encourages and supports faculties and units to act entrepreneurially: 2.67
- The HEI is a driving force for entrepreneurship and innovation in regional, social and community development: 2.51

**Figure 14a.** Leadership and Governance at the universities in Bosnia and Herzegovina
The HEInnovate dimension Leadership and Governance has identified weaknesses due to lacking a model for coordinating and integrating entrepreneurial activities across HEI, while the strong side stems from the fact that entrepreneurship plays significant part in the HEI’s overall strategy (Fig. 14a).

**Figure 14b. Organisational Capacity at the universities in Bosnia and Herzegovina**

When it comes to the Organisational Capacity at the universities in Bosnia and Herzegovina, the detailed view given on Figure 14b identifies that the weak part is lacking sustainable funding and investments for supporting the entrepreneurial objectives. On the other hand, the HEI’s strength in this respect comes from their capacity and culture for building new relationships and synergies across the institution.

**Figure 14c. Entrepreneurial Teaching and Learning at the universities in Bosnia and Herzegovina**

Although the difference in the average scores for the proposed questions from the area Entrepreneurial Teaching and Learning is not sufficient to identify the sources for strengths and weaknesses, due to the relevance of this field for the
project, the lowest value will be discussed. The overall average score for this dimension is 2.69, and it potentially might be improved by addressing the identified slight weakness and integrating the entrepreneurship research into the education (Fig. 14c).

<table>
<thead>
<tr>
<th>Preparing and Supporting Entrepreneurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture.</td>
</tr>
<tr>
<td>The HEI supports its students, graduates and staff to move from idea generation to business creation.</td>
</tr>
<tr>
<td>Training is offered to assist students, graduates and staff in starting, running and growing a business.</td>
</tr>
<tr>
<td>Mentoring and other forms of personal development are offered by experienced individuals from academia or industry.</td>
</tr>
<tr>
<td>The HEI facilitates access to financing for its entrepreneurs.</td>
</tr>
<tr>
<td>The HEI offers or facilitates access to business incubation.</td>
</tr>
</tbody>
</table>

**Figure 14d. Preparing and Supporting Entrepreneurs at the universities in Bosnia and Herzegovina**

<table>
<thead>
<tr>
<th>Digital Transformation and Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>The HEI fosters a digital culture as a mean for innovation and entrepreneurship.</td>
</tr>
<tr>
<td>The digital infrastructure is planned, managed and continuously improved to align with the vision, mission and strategy of the innovative HEI.</td>
</tr>
<tr>
<td>The HEI is committed to digital teaching, learning and assessment practices.</td>
</tr>
<tr>
<td>Open science and innovation practices are widespread across the HEI.</td>
</tr>
<tr>
<td>The HEI has a dynamic digital presence supporting all its activities.</td>
</tr>
</tbody>
</table>

**Figure 14e. Digital Transformation and Capability at the universities in Bosnia and Herzegovina**

In respect to the HEInnovate dimension Preparing and Supporting Entrepreneurs, the HEIs’ drawback is lacking of access to finances for their
entrepreneurs, while HEIs’ strong side is the provided mentorship and personal development facilitated by experienced individuals from academia or industry (Fig. 14d).

Similarly, in respect to the Digital Transformation and Capability, the weakest side is the open science and innovation practices that should be widespread across the HEIs, while the relative strength comes from the fact that the HEIs in Bosnia and Herzegovina are committed to digital teaching, learning and assessment practices (Fig. 14e).

![Knowledge Exchange and Collaboration](image)

**Figure 14f.** Knowledge Exchange and Collaboration at the universities in Bosnia and Herzegovina

The HEInnovate dimension Knowledge Exchange and Collaboration is the second dimension that should be provided special emphasize, due to its relevance for the project objectives. The average score for this dimension is 2.91 and it is the highest average score among all dimensions for the universities in Bosnia and Herzegovina. The strong side of these universities is their commitment for collaboration and knowledge exchange with all sectors, while the weakness are insufficient engagement with incubators, science parks and other external initiatives (Fig. 14f).
The respondents recognised the internationalised character of the universities in Bosnia and Herzegovina, mainly due to their explicit support for international mobility of the staff and students. The internationalised image of these HEIs could be also improved by addressing the identified weakness and attracting international and entrepreneurial staff (Fig. 14g).

Figure 14g. The Internationalised Institution at the universities in Bosnia and Herzegovina

Figure 14h. Measuring Impact at the universities in Bosnia and Herzegovina
Due to the minor difference among the average scores for the posed questions from the area Measuring Impact, the weakest side could not be determined precisely (Fig. 14h). So, in order to improve the situation in the universities in this regard, all the questions should be addressed in future relevant activities.

The respondents from various role categories have assessed the dimensions significantly differently, as it can be seen from Figure 15. The extremely highest scores in general are given by the experts, while the lowest by the roles “Technology Transfer Office/Function” and “Dean/Head of School/Faculty”. However, all three role categories are not sufficiently represented in the data sample (Tab. 2) and their views will not serve as a base for the conclusions for Bosnia and Herzegovina.

Figure 15. Average scores for different groups of respondents at the universities in Bosnia and Herzegovina

The comparison between professors/teachers and external stakeholders can be observed from the Figure 15a. The average scores for the internal stakeholders (professors, teachers) are in general slightly lower than the
external stakeholders. This result is expected, having in mind the individual results for both researched universities in Bosnia and Herzegovina.

**Figure 15a.** Average scores of Professor/Teacher and External stakeholder roles at the universities in Bosnia and Herzegovina

**Aggregated statistical data for the researched WB region**

**Overall results**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and Governance</td>
<td>3.27</td>
</tr>
<tr>
<td>Organisational Capacity: Funding, People and Incentives</td>
<td>3.15</td>
</tr>
<tr>
<td>Entrepreneurial Teaching and Learning</td>
<td>3.20</td>
</tr>
<tr>
<td>Preparing and Supporting Entrepreneurs</td>
<td>3.08</td>
</tr>
<tr>
<td>Digital Transformation and Capability</td>
<td>3.28</td>
</tr>
<tr>
<td>Knowledge Exchange and Collaboration</td>
<td>3.34</td>
</tr>
<tr>
<td>The Internationalised Institution</td>
<td>3.52</td>
</tr>
<tr>
<td>Measuring Impact</td>
<td>3.09</td>
</tr>
</tbody>
</table>

**Figure 16.** Average scores for each HEInnovate dimension overall
The average scores for the HEInnovate dimensions for the overall dataset (Fig. 16) fluctuate between 3.08 (Preparing and Supporting Entrepreneurs) and 3.52 (The Internationalised Institution). The detailed views on each posed question for all HEInnovate dimensions are given on the Figures 16a. - 16h.

**Figure 16a. Leadership and Governance overall**

It is interesting to be noted that four from the examined HEInnovate dimensions have minor (less than 0.5) variations among the average scores for the researched questions, which means the sources for the strengths and weaknesses for these dimensions cannot be precisely determined. These dimensions are: Leadership and Governance, Entrepreneurial Teaching and Learning, Digital Transformation and Capability and Measuring Impact (Fig. 16a, Fig. 16c, Fig. 8e and Fig. 8h respectively).

**Figure 16b. Organisational Capacity overall**

Entrepreneurial objectives are supported by a wide range of sustainable funding and investment sources. The HEI has the capacity and culture to build new relationships and synergies across the institution. The HEI is open to engaging and recruiting individuals with entrepreneurial attitudes, behaviour and experience. The HEI invests in staff development to support its entrepreneurial agenda. Incentives and rewards are given to staff who actively support the entrepreneurial agenda.
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In respect to the Organisational Capacity of all PCUs, the lacking financial support (sustainable funding and investments) for the entrepreneurial objectives is an identified weakness, while the strong side is the HEIs capacities and cultures to build new relationships and synergies across the institutions (Fig. 16b).

**Figure 16c. Entrepreneurial Teaching and Learning overall**

**Figure 16d. Preparing and Supporting Entrepreneurs overall**

Although the difference in the average scores for the prosed questions from the area Entrepreneurial Teaching and Learning is not sufficient to identify the sources for increasing and decreasing the overall score, due to the relevance
of this field for the project, the lowest value will be discussed. The overall average score for this dimension is 3.20, and it potentially might be improved by validating the entrepreneurial learning outcomes and addressing them in entrepreneurial curricula (Fig. 16c).

The HEInnovate dimension Preparing and Supporting Entrepreneurs has slight weakness due to the insufficient access to financing for HEIs’ entrepreneurs facilitated by HEIs, while the strong side stems from the offered mentoring and other forms of personal development, which are facilitated by experiences individuals (Fig. 16d).

**Figure 16e. Digital Transformation and Capability overall**

**Figure 16f. Knowledge Exchange and Collaboration overall**
The area Knowledge Exchange and Collaboration is the second dimension that was emphasized due to its higher relevance. The average overall score for this dimension is 3.34. The detailed view plotted on the Figure 16f points out that the weakness for the Knowledge Exchange and Collaboration stems from the weak engagement with incubators, science parks and other external initiatives.

The Internationalised Institution overall

The HEInnovate dimension The Internationalised Institution is the area with the highest average score. From the detailed view, it can be seen that the strongest side of the HEIs is their explicit support of the international mobility for staff and students. For improving the international character of the universities, attracting international and entrepreneurial staff is crucial (Fig. 16g).

Measuring Impact overall

The HEI regularly assesses the impact of its entrepreneurial agenda. The HEI regularly assesses how its personnel and resources support entrepreneurship. The HEI regularly assesses knowledge exchange and collaboration. The HEI regularly assesses the institution’s international activities in relation to its entrepreneurial agenda.
The average scores given by different groups of respondents for the overall dataset are plotted on the Figure 17. Although some different behaviours could be noticed by certain role types, only the roles represented with sufficient number of respondents (more than 10) will be taken into account (Tab. 2). In addition, two role types which are represented with sufficient number of responses are indefinite (“Other” and “Not provided”) and are not of interest to be analysed individually. According to this, the behaviours of the following role types will be discussed in more details: “Administrative leader”, “Student (Undergraduate - PhD), “External stakeholder” and “Professor/Teacher”. Although all these four graphs have similar shape and not very different average scores, in general the role “Administrative leader” has the highest average scores for majority of the HEInnovate dimensions. On the other hand, the lowest average scores for the majority of HEInnovate dimensions are plotted for the “External stakeholder” role.

**Figure 17.** Average scores for different groups of respondents’ overall

The comparison between Professor/Teacher and External stakeholder given on Figure 17a presents even more similar behaviour between these two roles, which can be emphasized as a general conclusion overall. Therefore, it can be concluded that the internal and external stakeholders, which were of higher interest for this research, have demonstrated similar perceptions for the
development of their HEIs in respect to each of the eight HEInnovate dimensions in all examined universities in the Western Balkan countries. More precisely, the reported levels of development by external stakeholders are slightly lower than the reported levels by professors and teachers.

Figure 17a. Average scores of Professor/Teacher and External stakeholder roles overall

For precise comparison and better analysis, the average scores for each HEInnovate dimension for each PCU are given in the Table 3, as well as the overall average values. It could be noticed that the European University of Tirana has the highest overall score for all dimensions, while the University of Mostar has the lowest, on the other hand.

In respect to the HEInnovate dimensions, The Internationalised Institution is the highest scored dimension overall, with the average score of 3.52. The second highest dimension, with an average score of 3.34, is Knowledge Exchange and Collaboration, which is of highest relevance for this project. This dimension is in the most advanced stage at the European University of Tirana, while it is the least developed at the University of Sarajevo. On the other hand, the dimensions with the lowest average scores are: Preparing and Supporting Entrepreneurs and Measuring Impact, with scores of 3.08 and 3.09. The dimension Entrepreneurial Teaching and Learning, which is also prioritised area
due to its relevance, is the most developed at the European University of Tirana, while it has the lowest score at the University of Mostar (Tab. 3).

**Table 3. Overall average scores per university for each HEInnovate dimension**

<table>
<thead>
<tr>
<th>University</th>
<th>HEInnovate dimensions (average scores)</th>
<th>Leadership and Governance</th>
<th>Organisational Capacity: Funding, People and Entrepreneurial Teaching and Learning</th>
<th>Preparing and Supporting Entrepreneurs</th>
<th>Digital Transformation and Capability</th>
<th>Knowledge Exchange and Collaboration</th>
<th>The Internationalised Institution</th>
<th>Measuring Impact</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>European University of Tirana</td>
<td></td>
<td>3.68</td>
<td>3.62</td>
<td>3.76</td>
<td>3.65</td>
<td>3.69</td>
<td>3.72</td>
<td>4.11</td>
<td>3.72</td>
</tr>
<tr>
<td>University of Montenegro</td>
<td></td>
<td>3.46</td>
<td>3.38</td>
<td>3.26</td>
<td>3.22</td>
<td>3.51</td>
<td>3.55</td>
<td>3.75</td>
<td>3.45</td>
</tr>
<tr>
<td>University of Mostar</td>
<td></td>
<td>2.66</td>
<td>2.42</td>
<td>2.59</td>
<td>2.37</td>
<td>2.81</td>
<td>2.93</td>
<td>2.81</td>
<td>2.23</td>
</tr>
<tr>
<td>University of Sarajevo</td>
<td></td>
<td>2.84</td>
<td>2.70</td>
<td>2.79</td>
<td>2.73</td>
<td>2.86</td>
<td>2.89</td>
<td>2.94</td>
<td>2.51</td>
</tr>
<tr>
<td>University of Vlora</td>
<td></td>
<td>3.40</td>
<td>3.30</td>
<td>3.24</td>
<td>3.09</td>
<td>3.26</td>
<td>3.40</td>
<td>3.64</td>
<td>3.14</td>
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<tr>
<td>Average</td>
<td></td>
<td>3.27</td>
<td>3.15</td>
<td>3.20</td>
<td>3.08</td>
<td>3.28</td>
<td>3.34</td>
<td>3.52</td>
<td>3.09</td>
</tr>
</tbody>
</table>

The same results aggregated per country are given in the Table 4. The highest average score across all HEInnovate dimensions has Albania (3.56), while the lowest average score belongs to Bosnia and Herzegovina (2.70). The prioritised dimensions: Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration are both the most developed in Albania, while the least developed in Bosnia and Herzegovina.

**Table 4. Overall average scores per country for each HEInnovate dimension**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td></td>
<td>3.56</td>
<td>3.48</td>
<td>3.54</td>
<td>3.42</td>
<td>3.52</td>
<td>3.58</td>
<td>3.91</td>
<td>3.48</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td></td>
<td>2.76</td>
<td>2.57</td>
<td>2.69</td>
<td>2.56</td>
<td>2.84</td>
<td>2.91</td>
<td>2.88</td>
<td>2.37</td>
</tr>
<tr>
<td>Montenegro</td>
<td></td>
<td>3.46</td>
<td>3.38</td>
<td>3.26</td>
<td>3.22</td>
<td>3.51</td>
<td>3.55</td>
<td>3.75</td>
<td>3.45</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>3.27</td>
<td>3.15</td>
<td>3.20</td>
<td>3.08</td>
<td>3.28</td>
<td>3.34</td>
<td>3.52</td>
<td>3.09</td>
</tr>
</tbody>
</table>
Existing infrastructure (physical, organisational and services offered)

During the last decade, the WB countries has improved their innovation performance significantly, but for catching up with the European regions the innovation initiatives should be further strengthened. Matusiak and Kleibrink (2018), researching the challenges and innovation potentials of WB countries, have determined that WB innovative efforts mostly accommodate traditionally strong sectors, which do not necessarily reflect the ideal competitiveness paths for economies in the WB region. In respect to the research and innovation policy governance systems, which are of the highest relevance for regulating the university-business collaboration, although they are at different stages of their formation and development in the WB countries, the national policy frameworks are constantly being improved. Matusiak and Kleibrink (2018) also emphasized that the research and innovation systems in the WB economies need to continue shifting their focus towards businesses to provide better balance between public and private sector orientation. Furthermore, they highlighted the place-based innovation and related smart specialization strategies as potential driver to innovation in the business sector and technology transfer, as well as establishing of horizontal framework for transnational collaboration.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>Innovation and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>million EUR</td>
<td>competitiveness</td>
</tr>
<tr>
<td>Albania</td>
<td>2.88</td>
<td>3.718</td>
<td>649</td>
<td>44</td>
</tr>
<tr>
<td>Bosnia and Herzegovina a</td>
<td>3.52</td>
<td>4.494</td>
<td>167</td>
<td>34</td>
</tr>
<tr>
<td>Montenegro</td>
<td>0.62</td>
<td>6.355</td>
<td>270</td>
<td>21</td>
</tr>
</tbody>
</table>

a For Bosnia and Herzegovina the time span covers only the period from 2014 to 2017.


For the three countries, the membership of the EU holds the promise of long-term economic convergence, capital inflow, rising productivity through increased trade, competition and investment, as well as accessing the EU Structural and Investment Funds to help financing R&D, innovation, infrastructure and environmental projects. The European Commission has
identified regional development, competitiveness and smart specialisation as key areas for joint support activities in enlargement, while the smart specialisation can be implemented through technology transfer and start-up support in order to boost entrepreneurship and innovation (European Commission 2018). In 2017, the heads of government of Albania, Bosnia & Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia, endorsed a Multi-annual Action Plan for a Regional Economic Area in WB. This encompasses economic development strategies based on knowledge and innovation and building on the experience of smart specialisation from EU Member States and regions (Matusiak and Kleibrink 2018). The objectives in this project are in line with these strategic orientations with the focus to the three countries: Albania, Montenegro and Bosnia and Herzegovina.

The small business act (SBA) is an overarching framework for the EU policy on small and medium-sized enterprises (SMEs). It aims to improve the approach to entrepreneurship in Europe, simplify the regulatory and policy environment for SMEs, and remove the remaining barriers to their development. Its main priorities are: promoting entrepreneurship, less regulatory burden, access to finance and access to markets and internationalisation. The SBA report concludes that most economies already have a regulatory framework for university-business collaboration, but there is still lack of structure and it is hard to assess the intensity of that collaboration. The reports underline that Montenegro and Bosnia and Herzegovina still lack an institutional and policy framework for innovation, while the main issue in Albania is the implementation of the relatively comprehensive innovation strategy that was adopted in 2011.

Although the political situation in each of the countries: Albania, Bosnia and Herzegovina and Montenegro is different, in respect of the national priorities, strategies and the available legislative relevant for the areas addressed with this project (engaging the universities and enterprises through commercialisation hubs), are quite similar; moreover, it is highly recommended regional cooperation for overcoming the common challenges, which is also set as a topical priority in the national and regional agendas in Western Balkan.

In Bosnia and Herzegovina, the project objectives are aligned with the “Strategy for development of science in Bosnia and Herzegovina 2017-2022” supporting the development of the capacities of universities for cooperation with industry, as well as straightening the position of universities in the National
Innovation System and ease of access to the research results to all innovation ecosystem stakeholders.

The need of intensified collaboration with the industry for the University of Sarajevo is addressed with the: “Strategy for development of education and science of Canton Sarajevo 2017 – 2022”, which has a goal to strengthen the link between universities and industry in both directions: knowledge transfer to industry and practical placement for boosting the employability for graduates. This strategy notes that despite the need for cooperation, there is a gap in communication and expectations (not existence of a one-stop shop). The University of Sarajevo in 2017 has adopted its own “Strategy for development of scientific-research / research in arts activities at the University of Sarajevo” that is focused on development of the innovation system at the university by increasing the commercialisation of research and ideas including creation of spin-offs, which will additionally ease the further cooperation with other enterprises in Bosnia and Herzegovina and internationally. In this regard the strategy underlines the need of increased capacities for spin-off creation, as well as increased exchange with industry reaching up to 6 months practical placement of students and researchers.

For the University of Mostar, there is no respective cantonal strategy for science, but the “Strategy for development of Hercegovina-Neretva Canton 2017-2020” and the “Strategy for development of small and medium size entrepreneurship in Hercegovina-Neretva Canton 2017-2020” are also pointing out few important aspects. Both strategic documents stress the need of increased cooperation between universities and enterprises (through organisational and database development).

The “Strategy for development of the University of Mostar 2018 – 2023” has set as its strategy objective: To develop cooperation with private and public sector for straightening of the innovation potential of the university and the region. The task that is set aims to develop and straighten the role of the university in the innovation system.

The “Strategy for the development of Higher Education in Montenegro (2016-2020)” envisages the increasing of entrepreneurial teaching and activities at universities, the technology transfer and closer cooperation with enterprises to offer more relevant internships for students. The “Strategy for Innovation Activities (2016-2020) with Action Plan” emphasizes the significant role of the universities in the National innovation system, but also notes the need for
development or their organisational and technical capacities. In this notion most important role needs to be played by the University of Montenegro as the oldest university where also today most of the country’s research is done and more than 50% of students are enrolled.

By the decision of the Government of Montenegro from 10 May 2018, the “Institute - Centre of Excellence for Research and Innovation” is an independent organizational unit at the University of Montenegro. This centre is focused on strengthening the competitiveness of scientific research and innovative creativity at the University. It has been developed as a result of the project “BIO-ICT Centre of Excellence in Bioinformatics” funded by the Government of Montenegro. This centre will serve to this project as institutional support for the Commercialisation Hub’s activity, but currently lacking the capacities (technical knowledge and equipment).

The situation in Albania is quite similar. In the 2015-2016 WEF (World Economic Forum) Competitiveness Ranking of 140 countries, Albania ranked no. 118 on the pillar ‘Innovation’). In accordance with the EU Report 2016 – Albania on progress made in science, research and education, “inter-institutional cooperation needs to be strengthened, in particular regarding decisions on innovation measures” and “investments in research and work on capacity building measures” to be increased. Both arguments prove the definite need of Albania to increase capacities in this area.

On an institutional level, the European University of Tirana encourages a culture of knowledge-sharing, openness and horizontal linkages between HEIs, CSOs (Civil Society Organisations), research centres, governmental organizations and relevant stakeholders. Based on these principles, the European University of Tirana is committed to the internationalization of its study programmes and staff development, as well as research through the opportunities that the internationalization offers. The project supports the strategy for internationalization, as well as the strategic programme of the European University of Tirana “500+”. This programme envisages the identification of biggest 500 companies in Albania, which focus on innovation, with the aim to conduct joint meetings for fostering youth entrepreneurship, innovation and employability.

The University of Vlora is a small university in area with moderate industrial and developmental activity, but with even more modest business development infrastructure. The university has professional and experienced staff, but
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significantly lacks organisational, strategical and infrastructural skills for cooperation.

**The European Innovation Scoreboard reports**

EIS is a tool of the European Commission used for comparative assessment of the research and innovation performance of the EU Member States and selected third countries and the relative strengths and weaknesses of their research and innovation systems. In its 2018 report, EIS has considered for including for the first time Albania, Bosnia and Herzegovina and Montenegro (Hollanders and Es-Sadki 2018). As a rule, countries can only be included if data are available for at least 20 indicators.

The data availability is further elaborated in more details in the EIS report 2019 (Hollanders et al. 2019). For Albania, the data were available for eight indicators from international sources. Albania has introduced an innovation survey covering the years 2014-2016 closely following the CIS 2016, but results are not yet available, and even with data for the six indicators using innovation survey data, data availability would still not be good enough to include the country in the EIS. Similarly, for Bosnia and Herzegovina, the data are available for ten indicators from international sources. Bosnia and Herzegovina has introduced an innovation survey covering the years 2014-2016, but the results are not yet available, and even with data for the six indicators using innovation survey data, data availability would not be sufficient to include the country in the EIS. On the other hand, the EIS report 2019 identified data availability for 15 indicators from various national and international sources for Montenegro. Montenegro has introduced its first innovation survey for the years 2014-2016, but the data that was available was marked as unofficial, due to the piloting status of the survey. With this data, 23 indicators were sourced, and the country Montenegro was included in the EIS report 2020 (Hollanders 2020).

To summarize, although EIS is highly respected tool for analyses of the National Innovation Ecosystems, it cannot be a sufficient data source for examination of the three WB countries of interest in this research, because numerous indicators were not measured in the targeted countries, or were measured partially. However, from the EIS report 2018, we can compare the three WB countries of interest for the indicators where data is available for certain indicators. Table 6 presents only the EIS indicators where data is available.
Table 6. Measured indicators from the EIS 2018 report

<table>
<thead>
<tr>
<th>ATTRACTION RESEARCH SYSTEMS</th>
<th>ALBANIA</th>
<th>BOSNIA AND HERZEGOVINA</th>
<th>MONTENEGRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1 International scientific co-publications</td>
<td>46.0 (2015)&lt;sup&gt;h&lt;/sup&gt;</td>
<td>94.0 (2015)&lt;sup&gt;h&lt;/sup&gt;</td>
<td>266.8 (2015)&lt;sup&gt;h&lt;/sup&gt;</td>
</tr>
<tr>
<td>1.2.2 Top 10% most cited publications</td>
<td>2.1 (2014)&lt;sup&gt;h&lt;/sup&gt;</td>
<td>3.3 (2014)&lt;sup&gt;h&lt;/sup&gt;</td>
<td>3.2 (2014)&lt;sup&gt;h&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

| INNOVATION-FRIENDLY ENVIRONMENT | | | |
|---------------------------------| | | |
| 1.3.2 Opportunity-driven entrepreneurship | N/A | 1.2 (2017)<sup>i</sup> | 1.0 (2010)<sup>i</sup> |

| FINANCE AND SUPPORT | | | |
|---------------------| | | |
| 2.1.1 R&D expenditure in the public sector | 0.15 (2008)<sup>e</sup> | 0.05 (2014)<sup>a</sup> | 0.24 (2015)<sup>a</sup> |

| FIRM INVESTMENTS | | | |
|------------------| | | |
| 2.2.1 R&D expenditure in the business sector | N/A | 0.05 (2014)<sup>a</sup> | 0.11 (2015)<sup>a</sup> |

| LINKAGES | | | |
|----------| | | |
| 3.2.2 Public-private co-publications | 0.35 (2013)<sup>h</sup> | 1.05 (2014)<sup>h</sup> | N/A |
| 3.2.3 Private co-funding of public R&D expenditures | N/A | 0.016 (2014)<sup>a</sup> | 0.001 (2015)<sup>a</sup> |

| INTELLIGENTIAL ASSETS | | | |
|-----------------------| | | |
| 3.3.2 Trademark applications (absolute numbers) | 10 (2017)<sup>b</sup> | 9 (2017)<sup>b</sup> | 10 (2017)<sup>b</sup> |
| 3.3.3 Design applications (absolute numbers) | 1 (2016)<sup>b</sup> | 1 (2014)<sup>b</sup> | 0 (all years)<sup>b</sup> |

| SALES IMPACTS | | | |
|-----------------| | | |
| 4.2.1 Medium and high-tech product exports | 11.2 (2016)<sup>d</sup> | 22.4 (2017)<sup>d</sup> | 17.2 (2016)<sup>d</sup> |
| 4.2.2 Knowledge-intensive services exports | 22.6 (2016)<sup>d</sup> | 14.9 (2015)<sup>g</sup> | 19.8 (2015)<sup>a</sup> |

<sup>a</sup> Eurostat, <sup>b</sup> EU IPO, <sup>c</sup> OECD, <sup>d</sup> UN Comtrade, <sup>e</sup> UNESCO Institute for Statistics (UIS), <sup>f</sup> WIPO, <sup>g</sup> Monstat (Statistical office of Montenegro), <sup>h</sup> European Commission: Science, Research and Innovation Performance of the EU (SRIP) report 2018, <sup>i</sup> GEM (Global Entrepreneurship Monitor).

Source: Adapted from Hollanders and Es-Sadki 2018.

The comparison given in the Table 6 shows that there is no a country that is a leader of the innovation performance in the region. Montenegro has scored slightly higher than the other two countries in respect to the R&D expenditures in both, public and private sectors. This country has also significantly higher score for the indicator International scientific co-publications. On the other hand, the highest score for the indicator Top 10% most cited publications belongs to Bosnia and Herzegovina. This country has also slightly higher score in Opportunity-driven entrepreneurship, Medium and high-tech product exports and Trademark applications according to WIPO. And finally, Albania has the highest scores only for the indicator Knowledge-intensive services exports.

Although the data for some of the indicators is marked as unofficial, from the country report for Montenegro from the EIS report 2020, it could be extracted the relative strengths and weaknesses, as well as the structural differences with
the EU. Namely, Innovators, Innovation-friendly environment and Employment impacts are the strongest innovation dimensions. The country performs well on SMEs with product or process innovations, Foreign doctorate students, Enterprises providing ICT training, and Innovative SMEs collaborating with others. On the other hand, the weakest innovation dimensions are: Sales impacts, Intellectual assets and Finance and support. Examined more deeply, the country lowest scored indicators are: New doctorate graduates, Design applications, Medium and high-tech product exports and R&D expenditures in the business sector. The report also presents the highest positive and negative structural differences with the EU. The highest positive differences are in: FDI net inflows, Average annual change in GDP and Employment share in services, while the highest negative differences are in Top R&D spending enterprises, Employment share in manufacturing and GDP per capita (Hollanders 2020).

Upcoming trends, overview and comparison

The 2018 Western Balkans Summit took place in London, having the following focus areas as mutual goals with this project: increasing economic stability with a view to improving the business environment, encouraging entrepreneurship, addressing youth unemployment, and promoting regional inter-connectivity.

Despite the inputs and support, gained by the stakeholders, the WB Strategy is only partially implemented so far, less than a year before the end of its period. The Action plan for regional cooperation of the WB strategy is focusing on achieving of 4 strategic goals among which Promote Research-Industry Collaboration and Technology Transfer are very relevant in this context.

In this respect, the goal and the objectives of this project are fully in line with the WB regional cross-cutting priorities, the WB Strategy’s instrument technology transfer programme, as well as the focus areas of the Berlin process – presented at the 2018 WB Summit in London.

The next WB summit which was held in Poznan, Poland on 5th of July 2019, builds on the previous Berlin, Vienna, Paris, Trieste and London Summits in the framework of the Berlin Process. As part of the Regional Economic Integration priority, to recognize the importance of research and innovation for the future development of the region, the Western Balkans Leaders look forward to launch of the regional research cooperation hub to enable networking
between researchers, including a regional research infrastructure map and completion of regional open access protocols to research infrastructure in time for the next Summit. More importantly, regarding the entrepreneurship, it was emphasized the importance of cooperation between vocational education and training and the private sector. Effective equipping with the needed wide range of skills, from basic skills to entrepreneurship and soft skills for the youth of the region, can be achieved through an improved lifelong learning ecosystem starting from early childhood education to adult learning, and a shared governance between education systems and the world of work in order to include the private sector in the design of training and apprenticeship schemes. These strategic strives of the WB leaders are supported with appropriate funds for leveraging the youth development, entrepreneurial capacity, as well as the SMEs’ access to finance (WB summit conclusions, 2019).

As an upcoming trend, it could be emphasized the WB leaders’ willingness to support the economic transformation of the Western Balkans through establishing smart specialization strategies and public-private partnerships for boosting the competitiveness and innovation in the region. This trend is also recognised at a national level. The three WB countries that are examined in this report has already started the process for development of national smart specialisation strategies. Albania has conducted assessment of certain relevant dimensions and it was decided the smart specialisation process to be organised at the national level, but taking a regional perspective by looking at the development state and potential of each of Albania's 12 counties. Montenegro has conducted the mapping of the economic, scientific and innovation potential in the country, while the Smart Specialisation process in Bosnia and Herzegovina is currently in preparation, following a recent decision by the council of ministers. In this notion, we would like to recommend the further process of planning and development of the commercialization hubs to take into account the results of the smart specialisation where applicable.
Results, recommendations and conclusions

This final chapter of the report discusses the results from the statistical analyses and the implemented focus groups with the self-assessment committees in each of the five examined PCUs. The purpose of the implemented focus groups was the committee members to revise the reported statistical results, support them with evidence, or propose certain corrections where the calculated average scores are not realistic. The discussion follows the HEInnovate structure, dividing the content for each HEInnovate dimension in a separate sub-section. In addition, the strong and weak sides, as well as the recommendations for further improvements are analysed for each PCU. At the end of the chapter, the main overall points of the report are summarised in the section Conclusions.

Status-quo at the University of Montenegro

Leadership and Governance

The overall average score for the HEInnovate dimension Leadership and Governance is 3.46, which positions this area on the forth place among all dimensions at the University of Montenegro. The current situation in this area was widely discussed on the focus group meeting. The university and its surrounding are one of priority fields of Development Strategy 2019-2024 of the University of Montenegro which was adopted on 17.07.2019. The Strategy defines the following goals for improvements of the priority fields - University and surrounding:

- adoption of platform for cooperation with industrial and public sector;
- establishing think-tank, consisted of representatives of the University and the institutions from industrial and public sector;
- developing and signing new Memorandums of Cooperation with the institutions from industrial and public sector;
- increasing the number of agreements on student’s practice work with the institutions from industrial and public sector, at least 5% per annum;
- inclusion of the experts working in the institutions from industrial and public sector in bachelor and master thesis realization, at least 10% of total number of thesis;
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• at least 25% of university faculties and units is involved in the joint projects with the institutions from industrial and public sector.

There is strong commitment to implementing the entrepreneurial agenda, being major part of recently adopted Development Strategy 2019-2024 of the University of Montenegro.

Institute-Centre of Excellence for Research and Innovation (CoE) is established in order to coordinate and integrate entrepreneurial activities across the University of Montenegro.

a) CoE shall aim of establishing relation with University units to incorporates students in the work of the Centre and builds up their entrepreneurial and project management skills and capacities;

b) CoE shall be used as educational hub for students as well as businesses/industrial and public sector to increase exchange of information and experiences as well as new technologies among students and between University and business sector;

c) CoE shall act as liaison point between international business and science arena and the University units, and with economy sector in the Country;

According to the publicly available 2019 Financial Report of the University of Montenegro, total income of the University is 32,398,889 €, and income from entrepreneurial activities of the University is 7,425,727 € (around 23% of total income).

As the result of the partnership between Government of Montenegro and University of Montenegro, Science and Technology Park of Montenegro is established on 20.09.2019. Science and Technology Park of Montenegro will offer wide range of different services to the entrepreneurs, innovators and companies.

Organisational Capacity: Funding, People and Incentives

There is no sustainable funding and investment sources for entrepreneurial objectives, which is recognised by the Development Strategy 2019-2024. In order to improve priority field of the Strategy named Research and Science, the University plans to establish fund for support of innovative activities. Science and Technology Park of Montenegro established in 2019 is another step
towards sustainable funding and investment sources into entrepreneurial objectives.

The before mentioned Institute-Centre of Excellence for Research and Innovation (CoE) is established in order to coordinate and integrate entrepreneurial activities across the University of Montenegro, and to use its knowledge and experience to mentor students in project management implementation and enforcement in daily life and doing businesses.

The University recruits and engages individuals with entrepreneurial attitudes, project development/implementation and coordination skills/ mind-set and experience as the staff of CoE.

- The CoE shall be used to transfer and build capacities and understanding of project management and development skills to students of the University of Montenegro, creating a base for future entrepreneurial and project management experts;
- The CoE and involved students shall support fundraising activities of the University.

The overall average score for this dimension from the statistical data is 3.38, which adequately represents the actual situation at the university in this area.

**Entrepreneurial Teaching and Learning**

The Entrepreneurial Teaching and Learning average score given by the survey respondents is 2.36, which positions this dimension on the second worst place among all HEInnovate dimensions. Learning opportunities to develop entrepreneurial mind-set and skills are involved in curriculums of many courses, from preparation of business plans to development and improvement of practical skills involved in work on different projects in University labs and practise in the institutions from industrial and public sector.

The University provides informal learning opportunities and experiences to stimulate the development of entrepreneurial mind-set and skills, mostly in frame of different international projects, such as: TRAIN, REBUS, e-VIVA etc. Workshops for entrepreneurial learning organized in frame of these projects were realized in cooperation with the universities from different EU countries.

Career Building Centre of the University of Montenegro frequently organizes different trainings for students intending to start their own businesses. The last
call for students of the University of Montenegro for training beginners in business was closed on 01.03.2020. Training program lasts two months. After the training an award competition for the best start up idea is organized. (https://www.ucg.ac.me/objava/blog/1025/objava/64098-career-centre-the-call-for-students-of-the-university-of-montenegro-for-training-beginners-in-business).

Another informal learning opportunity is provided by BEST (the Board of European Students of Technology), student organisation for communication, cooperation and exchange among European students established in 1989. In addition, the organisation deals with solving problems in the education of engineers, with the help of the students studding at the 90 universities where BEST is present.

Practical work has to be 25% of total student workload by the Law of Higher Education and must be included in curriculums of all subjects in order to develop entrepreneurial mind-set and skills.

At the moment, there is no inclusion of external stakeholders in curriculum development. Curriculum development is only in line with requirements of the labour market. Development Strategy 2019-2024 of the University of Montenegro defines the following goals for improvement of its priority field of the University and surrounding:

- inclusion of the experts working in the institutions from industrial and public sector in bachelor and master thesis realization, at least 10% of total number of thesis;
- at least 50% of university faculties and units is going to involve external stakeholders, working in the institutions from industrial and public sector, into teaching process.

Development Strategy 2019-2024 of the University of Montenegro defines the following goals for improvement of its priority field - Teaching process:

- annual self-assessment of study programs,
- suggestions for improvements of study program structure,
- proposals for modifications of curriculums in line with criteria of European Higher Education Area.
Results of entrepreneurship research are integrated into the entrepreneurship offer by the continuous improvement of curriculums which is in line with the Development Strategy.

**Preparing and Supporting Entrepreneurs**

This area is a relative weakness at the University of Montenegro, as indicated by the lowest average score of 3.22 among all HEInnovate dimensions. In order to increase the awareness of the value of entrepreneurship and to stimulate the entrepreneurial intentions of students, graduates and staff to start-up a business or venture, the Government of Montenegro and University of Montenegro established Science and Technology Park of Montenegro and Research and Institute-Centre of Excellence for Research and Innovation (CoE), both organisations discussed above.

University of Montenegro supports its students, graduates and staff to move from idea generation to business creation.

The CoE shall be developed as the educational hub for transfer of information and new technologies to students, which support entrepreneurship and project management skills needed for business environment.

The activities of the Career Building Centre of the University of Montenegro explained in more details above, also influence the preparation and support of the entrepreneurs greatly.

Development Strategy 2019-2024 of the University of Montenegro defines the following goals for improvement of its priority field Organization and resources:

- organizing at least two workshops annually in order to improve students' entrepreneurship skills to start their own businesses;
- organizing at least one workshop annually in order to inform students about needs of industrial and public sector for different BSc, MSc and PhD profiles.

There is no mentoring and other forms of personal development offered by experienced individuals from academia or industry except those offered by the curriculums.

University of Montenegro does not facilitate access to financing its entrepreneurs.
Development Strategy 2019-2024 of the University of Montenegro defines the following goal for improvement of its priority field Organization and resources:

- Establishing business incubator as the university unit for supporting students to start their own businesses.

**Digital Transformation and Capability**

The average statistical score for this dimension is 3.51. The committee members had an extensive discussion for this area during the focus group meeting. The most relevant conclusions are presented below.

The university fosters digital culture as a mean for innovation and entrepreneurship in the frame of the project Enterprise Europe Network supported by EU financial funds. Partners included into the project consortium are: University of Montenegro, Ministry of Economy - Directorate for Development of Small and Medium Enterprises and Non-Governmental Organisation Business Start-up Centre as business incubator. The project provides digital platform enabling connection among entrepreneurs from the region and the rest of the Europe.

The Development Strategy 2019-2024 of the University of Montenegro defines the following goal for improvement of the teaching process:

- establishing technical support and equipment for e-learning across at least 40% of university units;
- prepared material for e-learning across at least 40% of university units.

At the moment there is no e-learning based study program. Digital means are only used to support face to face teaching.

Open science and innovation practices are not widespread across the University of Montenegro. The above-mentioned Science and Technology Park of Montenegro and Institute-Centre of Excellence for Research and Innovation are planned to be driving force of future wide spreading of open science and innovation practices, as well as project management practices. Last but not least, the website of the University of Montenegro provides dynamic digital presence supporting all its activities.
Knowledge Exchange and Collaboration

This dimension is assessed as second best HEInnovate dimension at the University of Montenegro with an overall average score of 3.55. The University of Montenegro encourages faculties and units to act entrepreneurially. Also, the Science and Technology Park of Montenegro is planned to be committed to collaboration and knowledge exchange among the University, industry, public sector and the rest of society. In addition, there are a lot of ongoing projects between university faculties and units with industry, different Ministries, business incubators, Chamber of Commerce and international partners.

At the moment there are a few business incubators in Montenegro: Innovation and Entrepreneurship Centre Tehnopolis from Niksic, Business Start-up Centre from Bar, Business Incubator from Cetinje, Regional Business Centre from Berane and Business Centre from Podgorica, Digital Factory Mtel from Podgorica. The University of Montenegro partners with some of these organisations on various national and European projects.

The University of Montenegro provides opportunities mostly for staff to take part in innovative activities with external environment having joint projects with industry, different Ministries, business incubators, Chamber of Commerce and international partners. On the other hand, the University integrates education and industry activities through industry practice being part of student education.

The Internationalised Institution

The Internationalised Institution is the strongest HEInnovate dimension, according to the survey respondents, assessing it with an average score of 3.75. International Cooperation is a priority field of Development Strategy 2019-2024 of the University of Montenegro. The strategic plan for this field is going to be developed in frame of current ERASMUS+ project IESP (Fostering Internationalization at Montenegrin HEIs through Efficient Strategic Planning).

The university has recently adopted new rules for student mobility in order to increase number of incoming and outgoing student motilities. A number of cooperation agreements have also been signed with European universities in order to promote student and staff mobility. However, the university does not attract international and entrepreneurial staff.
Development Strategy 2019-2024 of the University of Montenegro defines the following goals for improvement of the teaching process:

- at least 15% of courses at all university faculties will be in English;
- at least five self-financing study programs in English will be accredited at study levels;
- at least 10 joint study programs with European universities (double degree diploma) will be accredited;
- where applicable, use the 5% flexibility rule for curriculum development for giving incentive to students to participate in external programs/summer schools/webinars and or project activities and earn extra credits for their exams.

As mentioned above, the international dimension is reflected at the University’s approach to research through participation in international projects in frame of ERASMUS, HORIZON 2020 etc.

**Measuring Impact**

The overall average score for this dimension given by the survey respondents is 3.45. The University of Montenegro does not regularly assess the impact of its entrepreneurial agenda. The university does not regularly assess how its personnel and resources support its entrepreneurial agenda.

Development Strategy 2019-2024 of the University of Montenegro defines the following goals for improvement of the teaching process in this respect:

- annual self-assessment of study programs;
- suggestions for improvements of study program structure;
- proposals for modifications of curriculums in line with the criteria of European Higher Education Area.

The results of the annual self-assessment are integrated into the entrepreneurship offer by the continuous improvement of curriculums which is in line with the Development Strategy.

In respect to the assessment, the University of Montenegro does not regularly assess the impact of the start-up support, but the finished projects are assessed with external partners. Also, the university does not regularly assess the institution's international activities in relation to its entrepreneurial agenda.
Strengths and weaknesses

According to the statistical results, the strong side of the University of Montenegro is its internationalised institution. The internationalised character of the institution is recognised by the respondents, thanks to the explicit support of the international mobility of PCU’s staff and students. Also, the self-assessment committee agreed that another source for the strength of the university is that it encourages faculties and units to act entrepreneurially in general on a strategic manner, defining and structuring the entrepreneurial orientations in the Development Strategy 2019-2024 that need further implementation.

On the other hand, there is no sustainable funding and investment sources for support of staff entrepreneurial agenda, as well as no incentives and rewards for staff actively supporting the entrepreneurial agenda. This is also confirmed by the results of the statistical examination. The analysis of the lowest scored HEInnovate dimension Preparing and Supporting Entrepreneurs showed that the weakness actually originates from lacking access to finances for its entrepreneurs. Also, at the moment there is no inclusion of external stakeholders in curriculum development. Curriculum development is only in line with requirements of the labour market.

Recommendations for future improvements

The role of the university as a leader can be improved. The university can create concrete links to the labour market, as well as a model of activities between HEI and entrepreneurial activities.

For improvement of the overall situation and the current quality of the University of Montenegro, the following measures are proposed:

- Inclusion of different stakeholders from the business community in the development of the curriculum;
- Increasing the relationship with the national authorities and other external stakeholders to attract sufficient support and finances;
- Internship programmes for students for the implementation of practical ideas, as well as incentives and rewards for students and staff involved;
- Inviting guests lecturers from the industry on a regular basis;
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- Connecting the local stakeholders in the academic life by organisation of open days for recruitment as well as direct reference from the university for bright students;
- Measures for boosting the digital culture and improvement of the digital infrastructure;
- Regular assess of the impact of start-up support provided by its staff and university organisations;
- Development of e-learning based study program (not only digitalisation) that will support face to face teaching.

Status-quo at the University of Mostar

Leadership and Governance

The University of Mostar has conducted 5 years University Development Strategy 2018-2023 which defines variety of strategic goals, designed with proposed activity plan and measurement indicators for the core areas:

- education;
- scientific research and development;
- organization and resources;
- international and inter-university cooperation;
- University and its surrounding.

The developed mission states that University of Mostar organizes and conducts undergraduate, graduate, postgraduate and lifelong education based on research and contributes to social and economic development through the development of scientific research, artistic creation and professional work. The cooperation with the industry and its importance is emphasized even in the strategy action plan where it is stated that they will increase the number of final / diploma theses that are related to the practice in their topics and content, and they are committed that all study programs will have defined procedures and forms related to teaching practice that give stakeholders feedback on student activities. After discussing the self-assessment results for Leadership and governance by the committee members, it was concluded that, although the first question was assessed as slightly overestimated (the question “Entrepreneurship is a major part of the HEI’s strategy” has the highest average score of 3.11 while in the entire University Development Strategy 2018-2023
there isn’t any particular activity for the entrepreneurship), the overall average score for the dimension is rather realistic (the score 2.66 positions the dimension Leadership and Governance on a forth ranking place – which is assessed as appropriate and realistic to the real situation at the university). It was concluded that one of the main actions that needs to be undertaken is to define a mission and write a strategy outliving the entrepreneurial vision. To device implementation plan to achieve strategy with goals and performance indicators, the university should include the industry and other stakeholders in the development of the entrepreneurial strategy. The statistical results evidence that the university lacks proper model for coordinating and integrating entrepreneurial activities, which is a relative weakness in this respect.

Organisational Capacity: Funding, People and Incentives

The organisational capacity of the University drives its ability to deliver on its strategy. If the University is committed to carrying out entrepreneurial activities to support its strategic objectives, then key resources such as funding and investments, people, expertise and knowledge, and incentive systems need to be in place to sustain and grow its capacity for entrepreneurship.

The average score of this dimension as a result from the conducted self-assessment is 2.42, which positions it on a sixth place of all 8 dimensions. Regarding the questions answered inside the dimension there isn’t any particular question that is significantly above or under the average.

In the document of the University Development Strategy 2018-2023, there is no any information on the source of funding and investments that will be dedicated to any entrepreneurial activity or other activities foreseen in the strategy.

There is a huge awareness of the University that the Institution is insufficient of investment in staff development in order to support own and institutional entrepreneurial work plan. According to this, the University and Faculty management should take the following actions: Creation of an official career development policy for all employees. The staff should be able to attend courses and training free of charge. The staff should have the possibility of financial support and other means of motivation.
Another possible source of funding that is identified is through creation of teams of employee and stakeholders’ experts that are capable and motivated to work on EU projects. Development of a plan to provide a safe living environment and financial stability to prominent individuals during school and motivating them to work within the institution is necessary at first place, as well as increasing the number of assistants and professors and providing financial subsidies appropriate to their contribution. As intended outcome of this action should be: Building the capacity to execute projects and gain greater benefits than they are. Over time, the individuals who invest will become the leaders of the progress and entrepreneurial activity at the University. Another weakness related to this dimension which was discussed by the self-assessment committee members is lack of professional staff capable and motivated to work on entrepreneurial projects.

**Entrepreneurial Teaching and Learning**

The results from the self-assessment in this dimension are with the average of 2.59, which roughly is close to the total average value of all 8 dimensions. The question assessing the extent of co-designing and delivering the curriculum with external stakeholders has the highest score of 2.84. The self-assessment committee members discussed that it stems from the fact that some of the University programs that are including the stakeholders in the curricula development, but there isn’t any involvement of the stakeholders in the realization of the subjects, as guest speakers.

In addition to the identified weakness by the statistical results – lack of integration of entrepreneurship research results into the entrepreneurial education offer, the focus group meeting brought to light another weakness - lack of practical knowledge, i.e. linking theory and practice. In order to overcome this issue and to enhance the entrepreneurial teaching and learning the university should include more practical exercises at the university and in the companies, which will influence the student's final grade for the subject. With the implementation of this activity the practical experience will be part of the final grade of the subject and will oblige both, the students and also for the teachers to implement it and to connect the theoretical lectures with the practical part of the content. This will also encourage better knowledge of the matter, easier and faster solving of concrete problems that occur in practice, as well as gaining experience throughout education. The experience is crucial
for the student’s potential for recruitment, or gives them an incentive to start their own business and to think as entrepreneur.

Another relevant issue for this dimension that was discussed among the committee members is supporting the change of curriculums as one way for encouraging and developing entrepreneurial ways of thinking. In this respect, providing training and supporting teachers in creating new curriculums according the industry needs and trends is more than required.

Last but not the list, the committee members discussed the lack of motivation of the university staff to initiate projects development and cooperation with external stakeholders (companies, etc.). Also, one of the problems indicated as the reason for lack of entrepreneurial learning is that the university do not offer a lot of practice, particularly practice on entrepreneurship field, where student can face with the real business problems and needs.

**Preparing and Supporting Entrepreneurs**

This dimension is under the average and it is estimated with the average grade of 2.37 that reflects the lack of supporting programs for the entrepreneurs and preparation of the students to became future entrepreneurs. There are not any finances at the university dedicated for financing the entrepreneurial ideas of the students. The university is lacking facilities for business incubation and for the start-ups that can be established by the students.

Excluding the mentoring and other forms of personal development offered by experienced individuals from academia or industry, which question is scored slightly higher (2.79), all of the other questions are scored 2.50 or below, which evidences that each of the remaining questions calls for an intervention in order to improve the overall situation at the university in respect to preparing and supporting entrepreneurs. This conclusion is also acknowledged by the committee members. They proposed the following set of actions that need to be undertaken for addressing the identified weaknesses:

- to support students in the implementation of the idea into the business;
- to provide students with mentors who are willing to help and to provide guidance to the student in running, starting and growing a business;
- to organize competitions in different areas for different entrepreneurial ideas and provide attractive prizes to get students more interested;
- to provide quality research workplaces.
Digital Transformation and Capability

This HEInnovate dimension is assessed in the top 3 dimensions with an average score of 2.81. Although the highest score under this dimension is given for the university commitment to digital teaching, learning and assessment practices, the self-evaluation committee members discussed that the university does not have own e-learning platform, but small fraction of the university staff willing to benefit from distance learning uses the available online platforms. Contrary to this, the University of Mostar developed online platform that enhance the communication between university students and company needs. This platform bridges the gap between University and Industry regarding the student's practice. The companies share their case studies and ongoing projects which are demanding students support on the online platform, and students are applying in order to be involved in the projects that is part of their subject: practice. The statistical results evidenced that the open science and innovation practices are a relative weakness for the university.

The Coordinate Measuring Machine Competence Centre (CMM) is established in 2019 at the university, with a goal of better connecting the university with the entrepreneurship, transforming the digital technologies to support innovation and entrepreneurship. Through this project, the university wants to enhance capacities on field of Quality control, through the equipment purchased (1D universal length measuring machine- TRIMOS, 3D coordinate measuring machine- COORD3 CMM, 1D optical length measuring machine TRAMES and EXACTUM hardware and software for controlling laboratory environment conditions. In partnership with Lotrič Control, which has a lot of experience on that field, strong and fruitful cooperation with companies in the region is guaranteed. Currently, Coordinate Measuring Machine Competence Centre will provide internationally recognized calibration services and tests. In addition to the new educational opportunities and services for the industry, it will also provide advanced research in the field of product quality control in collaboration with local industrial companies and those in the environment.
The Competence Centre will also provide a length calibration laboratory, which will be support for the infrastructure for determining compliance in the country. The implementation of the project will enable practical work in the field of measurement and product quality controls to mechanical engineering, computer and electrical engineering students and will contribute to the increase competitiveness of local businesses in the international market.

Knowledge Exchange and Collaboration

University of Mostar has the highest average score (2.93) in this dimension from the self-assessment survey. This result is reflecting the real situation at the university, as acknowledged on the focus group meeting, due to the fact that the management has putted very high effort on the knowledge exchange and collaboration at all university level and among all students. The cooperation with the incubators, science parks and other external initiatives that are supporting start-ups and young entrepreneurs are one of the main collaborators at the university. The statistical results pointed out that the integration of the research, education and industry activities to exploit new knowledge might be a question that requires certain intervention for improvement of the overall knowledge exchange at the university.

One of the project partners INTERA Technology Park is among those collaborators at the University and the successful partnership on this project
once again confirms the university effective collaboration with external stakeholders that support entrepreneurs. This cooperation between INTERA Technology park and University of Mostar is based on the mutual support for realization of the following activities: entrepreneurship promotion, supporting and incubation of start-ups, provision of practical training and education, fostering of business and academic networking, channelling information to local enterprises on available support instruments.

In the University Development Strategy 2018-2023 there are some activities that supports knowledge exchange:

- Develop interdisciplinary study programs
- Improve the interdisciplinarity of all study programs by enabling elective courses at the university level
- Creating a university base of courses with general competencies, which can be integrated into all study programs
- Implementation of competence-based learning that can include the entrepreneurial competences

**The Internationalised Institution**

The international cooperation is one of the main goals stated in the University Development Strategy 2018-2023 of the University of Mostar. Their commitment to the internationalisation is stated even in their mission: “The University ensures and implements the mobility of students and teachers, the rational use of human and material resources with constant supervision of the quality, competitiveness and international competitiveness of scientific research, teaching, artistic and professional work.”

The University Development Strategy 2018-2023 defines a variety of activities that enhance its internationalization:

- Increase the number of study programs and courses conducted in English;
- Establish joint studies with eminent foreign higher education institutions;
- Increase the number of students from foreign nationalities studying at the University.

As a part of the internationalization of the university is their participation in international projects in variety of programmes: HORIZON 2020, TEMPUS, ERASMUS, etc. More than 250 mobilities are realized at the University level.
The University of Mostar achieves its international contacts with universities abroad within the framework of mutually matched up and signed agreements with more than 60 Universities, that cover the following types of cooperation:

- Work on jointly agreed topics;
- Exchange of teaching staff;
- Exchange of students;
- Joint publishing;
- Exchange of information of mutual interest;
- Other activities aiming to promote academic cooperation.

The University of Mostar and Matej Bel University in Banska Bistrica organize a joint graduate study program in the field of political science. The teaching process is organized in English, which enables the students to improve their language skills in English, Croatian and Slovak language.

The University of Mostar in cooperation with the University of Applied Sciences Burgenland, the University of Ljubljana, International Burch University and the University North organizes a joint international cross-border interdisciplinary doctoral program in the field of education and communication sciences.

The University of Mostar in cooperation with the University of Applied Sciences of Burgenland, University of West Hungary, University of Economics in Bratislava and the University of Juraj Dobrila in Pula organizes a joint international cross-border interdisciplinary doctoral program in the field of international economic relations and management. These facts, together with the average statistical score which falls in the top 3 HEInnovate dimensions, identifies the internationalisation as a strong side of this university.

**Measuring Impact**

The lowest average score from the self-assessment at the University of Mostar is given for this dimension (2.23). From the analyses of the statistical results, a negligible difference among scores for the questions was spotted, which means all the relevant questions require implementation of relevant measures for improving the overall situation at the university. As discussed by the committee members, although the university has integrated measuring impact by the continuous improvement of curriculums and study programs as stated in the University Development Strategy, these lowest statistical results are partly due to the fact that the currently available metrics typically focus on the
impact of start-up support and resources that support entrepreneurship. Those metrics do not consider Higher Education Institutions important factors such as employability of graduates and labour market performance, the contribution to local economic development, graduate entrepreneurship and the impact of the broader entrepreneurial and innovation agenda such as social and cultural dimensions.

**Strengths and weaknesses**

As indicated in the statistical results and also acknowledged by the committee members, the strong side of the University of Mostar is Knowledge Exchange and Collaboration, which comes from the university's commitment for collaboration, knowledge exchange and partnerships with a wide range of stakeholders. Also, the international cooperation is also well-established, especially in respect to the support for international mobility to the staff and students. In addition, the committee members revised the University Development Strategy 2018-2023 and identified the following strengths:

- recognizable identity of the university and clear geographical orientation;
- clear mission and vision of the desirable future of the university;
- awareness of one's own responsibility for progress and sustainable development;
- strong commitment and readiness for change in accordance with changes and trends in the European Higher Education Area and European Research Area;
- developed international cooperation and network of international contacts;
- understanding and support of the social community;
- existence of sufficient human potential for the implementation of the reforms;
- commitment of teachers in achieving excellence in teaching and research activities;
- established functional quality assurance system at all levels of the university;
- student participation in all management bodies of faculties and university through the student organisation;
- ensuring and supporting teaching staff from abroad when required;
- fostering the interdisciplinary through providing studies in all scientific fields;
- attractiveness of the curricula, as well as the study conditions.
Regarding the weaknesses, the statistical analyses indicated that the weakest HEInnovate dimension at this university is Measuring Impact. Due to the minor fluctuations among the posed questions in this area, it could be considered that an overall intervention in this area is needed and all measurement aspects should be addressed, primarily the impact of the start-up support among others, in order the situation to be improved. As concluded by the committee members, additional weaknesses that were identified from the University Development Strategy 2018-2023 are the following:

- underdeveloped legal framework;
- insufficient and unstable financing of the university;
- unsatisfactory cooperation with the economy;
- burdening the teaching staff with administrative obligations for investment in training teachers and associates for the use of new technologies, teaching methods and techniques;
- unsatisfactory ratio of teaching and research activities;
- insufficient allocation of funds for scientific research;
- lack of space and research equipment on some areas;
- Insufficient involvement of the students in scientific research work.

**Recommendations for future improvements**

The main recommendations for the future improvement of the University of Mostar in its way to becoming entrepreneurial university are:

- Establishing and maintaining an accurate and comprehensive mechanism for measuring the impact of the entrepreneurial agenda, activities undertaken by the personnel and resources for supporting the entrepreneurial agenda, entrepreneurial teaching and learning, knowledge exchange and collaboration, support to start-ups and international entrepreneurial activities;
- Enhancing the cooperation with the stakeholders from the industry in the development of the curriculum, based on the industry needs;
- Redefining the mission and developing a strategy outliving the entrepreneurial vision, with implementation plan with smart goals and performance indicators;
- An official career development policy for all employees needs to be created. Staff should be able to attend courses and training free of charge
and to have the possibility of financial support and other means of motivation;

- Creating project teams that are capable and motivated to work on EU projects. Creating the capacity to carry out more complex projects and reap greater benefits;
- Including more practical exercises in the syllabus, which with the rest of the exam will determine the student's final grade for the subject;
- Supporting the change of curriculums to encourage and develop entrepreneurial ways of thinking and to provide training and support for the employees in the process of development of new curriculums;
- Incorporating entrepreneurship learning into the curriculum;
- Encouraging students to get involved in diverse student projects and workshops, where they can improve entrepreneurial skills;
- Establishing entrepreneurship centre where students can have support for development of their entrepreneurial ideas;
- Establishing / strengthening the centres of excellence, hubs, laboratories whose primary task would be to upgrade the knowledge and skills acquired in education through projects and practical work. Allow organizational units to independently manage resources in their respective centres. Such centres would provide individuals and groups with working conditions, technical and professional support, as well as liaison with businesses that can realize the ideas offered;
- Organize business mentorship and business competitions and provide attractive prizes to get students more interested.

**Status-quo at the University of Sarajevo**

**Leadership and Governance**

The University of Sarajevo has a Strategy for development 2019-2023 that is focused on six strategic priorities: finances, teaching and students, research and development, international cooperation, art, culture and sport and quality assurance system. The aspect of leadership and governance is recognised in the Strategy for development 2019-2023 in general, but not as a primary focus of the university i.e. strategic priority. This is in line with the self-evaluation results which in this area the average scores are medium values. The university provides mainly formal approaches to develop the role of Entrepreneurial and
Innovation leadership and governance in the region and the community, while informal and practical oriented approaches are missing.

Organisational Capacity: Funding, People and Incentives

Although the finances are one of the six priorities in the Strategy for development, this dimension, which is relevant for the funding, is scored with an average overall score of 2.7. If we analyse the specific survey questions that lower the overall score, we can determine that the entrepreneurial objectives are not actually supported with sufficient amount of sustainable funding and investment sources. Also, although the university has the capacity and the culture to build new relationships, as many of the academic staff come from entrepreneurial sector, there are no sufficient incentives and rewards provided for the staff who actively supports the entrepreneurial agenda.

Entrepreneurial Teaching and Learning

The overall score for this dimension seems to be realistic, according to the self-assessment committee. Due to the positive impact of entrepreneurship on the development of economy and society, there was increased demand for entrepreneurship education at the University of Sarajevo, which was addressed by introducing entrepreneurial subjects in the university curricula starting from 2000s onward. However, the entrepreneurial education and educational programmes show weaknesses in terms of insufficient orientation to practice and the inaccessibility of these programmes to some students. In this respect, it is also noted that not only it is important how much students are satisfied with the entrepreneurial teaching and learning, but also it is even more important to continuously monitor and evaluate to determine how enthusiastic the subjects in the field of entrepreneurship are. When it comes to the entrepreneurial teaching and learning, the results suggest that the University underperforms in providing diverse informal learning opportunities and experiences, which are also crucial for stimulating the development of entrepreneurial mind-sets and skills.

Preparing and Supporting Entrepreneurs

The overall score given in the survey dataset for this dimension is an average, compared to the other dimensions. The question that is assessed with the lowest score in this group of questions refers to the financial support for the
entrepreneurs by the university. Also, the University of Sarajevo is lacking opportunities for business incubation for its entrepreneurs, as indicated by the survey results. Although some of the self-evaluation committee members argued that the preparation of entrepreneurs should be more practically oriented, rather than towards theoretical consideration of the topics of entrepreneurship, the survey respondents indicated that the strength of the university is actually the mentorship and other forms of personal development, that are offered by experienced individuals from academia and industry.

**Digital Transformation and Capability**

This dimension is assessed with relatively high average score by the survey respondents. With its average score of 2.86, the Digital Transformation and Capability is assessed the third best. Except the open science and innovation practices, which are not widespread across the University of Sarajevo, all of the rest survey questions in this group are assessed with relatively high scores. Therefore, it can be concluded that the University of Sarajevo fosters a digital culture, both in respect to the digital teaching, learning and assessment practices, and as a mean for boosting the innovation and entrepreneurship. The self-evaluation committee members agreed with these results, but also acknowledged that the open science and innovation practices are not well established and there is a need for further improvement in this respect.

**Knowledge Exchange and Collaboration**

The results from the survey for this dimension are very similar to the previous dimension. This dimension is assessed with slightly higher average score (2.89), which makes it second best dimension for this university. The University of Sarajevo is very much committed to collaboration and knowledge exchange with industry, the public sector and the society. The only weakness indicated in the results and by the self-evaluation committee is lacking strong links with incubators, science parks and other external initiatives.

**The Internationalised Institution**

According to the results from the survey, the Internationalisation is a key part of the University of Sarajevo, having the highest average score of all HInnovate dimensions. International perspectives are reflected in the HEI’s approach to teaching and research. However, the self-evaluation committee members
noted that the university attracts international staff very little, and the international dimension is not reflected in the HEI’s approach to research enough. These two points are the weaknesses that should be addressed, in order the internationalisation to be improved.

**Measuring Impact**

Assessment of the entrepreneurial teaching and learning across the institution is not among the key activities of the university and it does not assess the impact of start-up support, although some initial indicators for measuring the knowledge exchange and collaboration are used. This dimension is assessed with the lowest average score and it is a weakness for the entrepreneurial orientation of the university.

**Strengths and weaknesses**

From the survey results and the conclusions of the focus-group meetings, it can be noticed that there are no big differences and wider fluctuations among average scores for the 8 researched dimensions. All of the average scores are in the range between 2.51 and 2.94. However, the dimension with average score 2.94 can be identified as a slight strength, while the dimension with average score of 2.51 can be considered as the weakest dimension for the University of Sarajevo. Therefore, the strength of the University of Sarajevo is The Internationalised Institution, while the weakness of this organisation is Measuring Impact. When it comes to the activities for measuring the impact, special attention should be paid in future to the regular assessment of the impact of the university’s entrepreneurial agenda; regular assessment of the entrepreneurial teaching and learning; as well as to the regular assessment of the impact of start-up support, in order the overall quality and performance of the university for measuring the impact of the entrepreneurial activities to be improved.

**Recommendations for future improvements**

Beside of the main goals of the Introductory workshop, the workshop resulted with the conclusion that it is necessary to put further efforts to enhance student’s entrepreneurial skills as well as to improve innovation thinking. A third year Bachelor students expressed their opinion that during the first two years of their studies they did not have time to think about their careers due to very
intensive study programs related to core engineering courses. During the first semester of the third year of their bachelor study they had only one course related to the entrepreneurship and business that triggered them to think about their professional future. Opportunities at universities for providing support for any kind of business start-up are not formally recognised.

It was also concluded that the links between university and business are not systematically established. These connections were formed on the basis of the personal efforts of individual teachers. There are a large number of SMEs in Bosnia and Herzegovina who are overstretched with their daily obligations to survive on the market and thus they do not see the potentials of their cooperation with universities. Due this day by day struggle to survive on the globalised market most of them missed to focus on development and support innovation-related infrastructure as well as developing mind-set at their employees in this direction.

The Faculty of Mechanical Engineering has encouraged its students to ask companies to define their topics for master work according to company needs, but they hardly received any response mostly due to a lack of SMEs that are able to identify their real problems and are focused to resolve them in order to become more competitive on the globalised market.

There is no officially established cooperation among government, universities and companies in order to secure the necessary human resources for the labour market. Although the “Strategy for Development of Science in Bosna and Herzegovina 2017-2022” supported the development of the universities' capacities for cooperation with industry, as well as strengthening the position of the universities in the National Innovation System, the committee members concluded that almost nothing of that strategy has been implemented yet.

To summarize, the following recommendations that are the most relevant for improving the entrepreneurial orientation of the university could be listed:

- Establishing and maintaining an accurate and comprehensive mechanism for measuring the impact of the entrepreneurial agenda, activities undertaken by the personnel and resources for supporting the entrepreneurial agenda, entrepreneurial teaching and learning, knowledge exchange and collaboration, support to start-ups and international entrepreneurial activities;
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- Enhancing the students’ entrepreneurial skills by increasing the awareness, training for starting and growing a business in first school year, while mentoring and coaching in late school years, facilitating access to finances and business incubation;
- Establishing strong links with businesses and other stakeholders for knowledge exchange, collaboration, including joint graduate, master and doctoral projects, and strategic partnership;
- Engaging with the government for the realization of the Strategy for Development of Science in Bosna and Herzegovina 2017-2022”.

Status-quo at the European University of Tirana

Leadership and Governance

The university has a strategy and agenda focusing on the efforts to create chances for employment, internships and creating relationships between businesses and university, but it does not possess an explicit strategy in entrepreneurship specifically. The mission statement of the institution emphasizes “to become a center of expertise and excellence”, without any concrete direction related with entrepreneurial university. It can be evaluated as an implicit strategy based on the fact that this university does not provide the production of patents, invention or to sell innovation. The university does have an action plan (agenda) which occurs in a kind of periodicity but does not result in an entrepreneurial strategy producing prototypes or patents. In this framework the first dimension is considered somewhat overestimated by the self-assessment committee. Also, the third and the fifth dimension of the area of leadership and governance are considered overestimated. There are several intentions for coordinating and integrating entrepreneurial activities across the HEI but does not exist a model in place in order to realize this. There are a lot of intentions from the HEI to encourage entrepreneurship and innovation in regional, social and community development, but those efforts still cannot be considered a driving force. The self-assessment committee can affirm the considered commitment to implement the existing entrepreneurial agenda and also the efforts to encourage and support faculties and HE units to act entrepreneurially. The recommendation is that HEI should review and reformulate its vision and mission statements in the light of entrepreneurial university.
Organisational Capacity: Funding, People and Incentives

The entrepreneurial objectives are not supported by a wide range of sustainable funding and investment sources and there is a correct evaluation in the self-assessment survey related with this dimension. The average score given for the second question, according to the self-assessment committee, is undervalued because the HEI has a considerable capacity and culture to build new relationships and synergies across the institution. The other dimensions are considered realistically evaluated: the HEI does not invest in a sustainable way in staff development to support its entrepreneurial agenda, the main investment is in time and not in money; also basically incentives and rewards are given to staff that actively supports the entrepreneurial agenda. The main funding sources the university uses in staff development to support its entrepreneurial agenda is project based funding from the European Union. The recommendation is that HEI should provide training possibilities for staff and reward excellent performance in teaching, research and entrepreneurship.

Entrepreneurial Teaching and Learning

The Entrepreneurial Teaching and Learning is the second best HEInnovate dimension at the European University of Tirana. All five questions in this area are considered realistically evaluated by the self-assessment committee. The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills like: entrepreneurs as guest speakers in classes, lectures and frontal teaching, problem based learning, visits to companies, assistance with preparing business plan, business plan writing, business idea generation activities, case studies, how to start an entrepreneurial initiative and business plan competitions. Related to informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and skills the HEI provides symbolic awards from business sponsors, internships, and Erasmus experiences for the best business idea students group. The business idea competition is organized every year from the Department of Management and Marketing of the Faculty of Economy, Business and Development. Also, the HEI co-designs and delivers the curriculum with external stakeholders by engaging those external stakeholders through the strategic bond created with Alumni and several meetings between students and members of the Labour Market Board. In addition to this, the HEI organizes lectures for entrepreneurship with guest speakers from successful businesses, not only for specific classes but for a
large number of students from the business faculty which are interested for the topics discussed.

Preparing and Supporting Entrepreneurs

The second lowest average score is given for the dimension Preparing and Supporting Entrepreneurs. The weaknesses in this area stem from the lack of training for business start and development, as well as lack of finances for the entrepreneurs. The committee members discussed that the HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurship of students to start up a business or venture through developing entrepreneurial competences and skills in students, promoting self-employment and start-up as a viable career option to students, lectures and frontal teaching, internships, visits to companies. The institution is engaged in one of the largest entrepreneurship research projects in the world, GUESS. Through this project the institution conducts every 2-3 years a survey research related with the evaluation of the students entrepreneurial intentions and activities. Another important element of the university agenda in this direction is the participation in international projects. The HEI supports students to move from an idea generation to business creation through a competition “Best business idea”, early organized by the Faculty of Economy Business and Development. The best business ideas from all the classes which take the course of Introduction to business are selected to participate in the competition and a jury composed of successful business leaders evaluates the best idea from all competitive business plans. The self-assessment results are assessed by the committee as mainly realistically evaluated by the survey participants, except for the fourth question referring to mentoring and personal development, which seems to be slightly overestimated. The recommendation provided by the self-assessment committee in this respect is that HEI should incentivise the strategic involvement of key external stakeholders.

Digital Transformation and Capability

The average score for this HEinnovate dimension is 3.69, which positions the dimension on the fifth place among all researched dimensions. The self-assessment committee identified certain underestimations on the questions in this area. Firstly, the HEI is focused on the technology and digitalization, it has set a rule for this and is implementing it sufficiently. Through the Learning
Management System platform the internal communication between students and staff is managed; also, the shared folder with university documents can be accessed by all staff and administration computers. The first question referring to: fostering digital culture as a mean for innovation and entrepreneurship is evaluated with an average score of 3.82, but the committee proposes a score of 4. Regarding the second question, form the point of view of documentation the HEI does not have a written strategy, but in practice it has created a culture of planning, managing and continuously improving the digital infrastructure to align with the vision and strategy of the innovative HEI. The committee members proposed the average score for this question, as well as for the question referring to digital teaching, learning and assessment also to be increased slightly in order to present the situation at the university more accurately.

Knowledge Exchange and Collaboration

According to the statistical data, in respect to the Knowledge Exchange and Collaboration, which is of higher relevance for this project, weak and insufficient links with incubators, science parks and other external initiatives is an identified weakness, while the strong side is facilitating the staff and students to participate in innovative activities with external stakeholders. For the questions that were posed in this area, the self-assessment committee identified a need for reducing the average scores for the fourth and the fifth question. The HEI provides opportunities for staff and students to visit businesses but the committee cannot affirm “to take part in innovative activities with businesses or the external environment”. The proposed correction is 3.5 instead of 3.96. Also, the committee cannot affirm that, in the HEI there are elements of integrating research education and industry to exploit new knowledge and therefore, it proposes the average score for this question to be slightly lowered as well.

The Internationalised Institution

The internationalisation of the university is by far the highest rated dimension with an average score of 4.11. The self-assessment committee considered this result realistic to the actual situation. Almost all the activities of the HEI’s entrepreneurial agenda are strongly related with the internalization strategy. The university has an internationalization strategy and is highly involved in
international projects/mobilities. Majority of projects are related to entrepreneurial activities of the university, such as the international conference: Albanian Studies Days, other research activities like the study of the GUESS survey, international visits (like in Salamanca last year) etc., and all of them are realized in the framework of internationalisation and international projects. The committee members had minor remarks for slightly increasing the average score for the question regarding the support of staff and students’ mobility by the HEI, as well as decreasing the average score for the fifth question, which cumulatively does not influence the overall ranking of this HEI dimension. They emphasized the focus of the university on the creation of international research groups.

**Measuring Impact**

The average score for this dimension calculated from the statistical results is 3.72, but the committee members discussed that this value should be slightly decreased. Although the university performs the activities of its entrepreneurial agenda and tries to measure their impact periodically, and in this scope there is an attempt for assessment of the personnel and resources, the questions related with the assessment of the impact of start up support should be more present. Also, the HEI assesses the knowledge exchange and collaboration only in the framework of specific projects, while the activities are not assessed specifically in relation to the entrepreneurial agenda.

**Strengths and weaknesses**

The Internationalised Institution is an ultimate strength evidenced in the statistical research, with overall average score 4.11, which is by far greater than the rest of the HEInnovate dimensions. This result stems from the support for international mobility and from integration of the internationalisation in the HEI’s entrepreneurial agenda. The Entrepreneurial teaching and learning is also a strong side with the second best score of 3.76. Great part of this result is due to the diverse formal learning opportunities for developing entrepreneurial mindsets and skills. The committee members emphasized that the strengths of the university are: strong organisation, leadership and collaboration, as well as the well-trained and motivated staff who raises the level of teaching, motivates students in teaching and close business relationships.
On the other hand, the business connections are often formal and there is no correlation between the business demand and the university offering. There is also a lack of laboratories and products obtained from well-established laboratories or scientific analysis. Another identified weakness is the lack of digital culture, as well as weak labs and stimulation centres for students. The statistical results did not show any strong weakness, as all of the posed questions have average scores greater than 3.2. Some further interventions could be made in strengthening the links with incubators, science parks and other external initiatives, as well as supporting the entrepreneurial objectives with sustainable funding and investment.

**Recommendations for future improvements**

Although the European University of Tirana possesses relatively high average scores across all of the researched dimensions (all dimensions have average scores above 3.5), there are slight variations among certain dimensions, as discussed above. It is interesting to be noted that half of the researched dimensions have very close average scores to the lowest identified average score (fluctuating from 3.62 to 3.69). This allows us to consider the following four dimensions as certain weaknesses and to propose to be addressed with appropriate measures for enhancing the entrepreneurial status-quo at the university:

- Leadership and governance;
- Organisational capacity: funding, people and incentives;
- Preparing and supporting entrepreneurs;
- Digital transformation and capability.

For improvement of the overall situation and the current quality of the European University of Tirana, the following measures in both directions, internally and externally, are proposed:

- Creation of an institutional strategy for Innovation and Entrepreneurship;
- Raising awareness regarding the importance of cooperation between university and labour market, through the intensification of the contacts and having real products;
- Involvement of external experts/stakeholders in academic activities;
- Involvement of students in research and applicative projects of the academic staff in cooperation with external stakeholders.


Status-quo at the University of Vlora

Leadership and Governance

With an overall average score of 3.4, this dimension is the second best dimension at the University of Vlora. The university actually possesses a strategic plan where one of the main axes is exactly the leadership and governance. In the frame of the region and the community, the university acts the leading role in entrepreneurship and innovation development, which is reflected in the university mission. Individual faculties are largely encouraged to collaborate and to act entrepreneurially. One example for this is the usage of the laboratory at Faculty of Public Health for blood test/health examinations). However, the self-evaluation committee members acknowledge that the university is not a leader in the country and wider region, therefore, further activities to support this pillar are needed.

Setting up the university Research and Development Centre is a great way for raising an awareness, but the awareness is only the first step in the process of leadership in support of enterprises and businesses, which should be followed by the creation of models, practices, in order for University of Vlora to be the driving force for entrepreneurship.

Organisational Capacity: Funding, People and Incentives

The overall average score for this dimension of 3.3 is assessed by the members of the self-evaluation committee as slightly overrated. So, they proposed the average score to be decreased for a small fraction. This comes from the fact that the entrepreneurial objectives that are projected, are not supported by sustainable funding. Furthermore, there has been no investment by the university in staff development in support of the entrepreneurial agenda. The university has the capacity and the culture to build new relationships, as many of the academic staff come from entrepreneurial sector. Although the university is making the first steps in addressing of this issue but until now, no incentives and rewards are provided. It is recommended by the members that the university should be more open for hiring appropriate staff with individual entrepreneurial expertise for the leading roles in various departments.
Entrepreneurial Teaching and Learning

The average score of 3.24 for this dimension and the average scores for the individual questions in this area given by the survey respondents are assessed realistic by the self-assessment committee. The committee members agreed that the teaching curricula are developed in collaboration with various stakeholders and are in line with the recommendations for incorporating the entrepreneurship in the education. However, the university provides mainly formal learning opportunities to develop entrepreneurial mind-set and skills, while informal and more practical oriented opportunities are missing.

This comes from the fact that the university has the qualified staff, technology to teach how to develop entrepreneurial skills, but the staff lacks practical experience. However, recently, departments along with the Research and Development Centre have begun to apply short-term courses for professionals, applied to lifelong learning. Some lecturers collaborate in scientific work with the business sector, but applying the scientific results finds no place in their business. The committee assesses the university’s commitment to the business space as insufficient for enabling the business to recognize the role of the university in helping it.

Preparing and Supporting Entrepreneurs

According to the statistical results, the overall average score for this dimension is the lowest, which indicates that Preparing and Supporting Entrepreneurs could be considered a weakness for the University of Vlora. Moreover, the statistical results were assessed as overestimated by the self-evaluation committee, and they proposed slight decreasing of the average scores for this dimension. This decision stems from the practice of the committee members. Namely, the university does not support very much the students, the graduates and staff to move from ideas to business creation and does not facilitate access to financing for entrepreneurs. However, the university organizes activities to offer training and support to the students, the graduates and staff.

Digital Transformation and Capability

The statistical average score that represents the current state of the university in respect to the Digital Transformation and Capability of 3.26 is assessed as overestimated by the self-evaluation committee. The committee members
emphasized the fact that the technology and especially the artificial intelligence is changing the world by substituting people with machines. They acknowledge the efforts put by some departments (i.e. Informatics Department), however, they claim that open science and innovation is not well established. In addition to this, the university’s digital presence is not very strong and they need to improve their infrastructure. Another identified weakness is that the university is not committed/focused to digital teaching, learning and assessment practices.

Knowledge Exchange and Collaboration

The HEInnovate dimension Knowledge Exchange and Collaboration has an average score of 3.40. The average scores for the posed questions showed that the weakness comes from the relatively weak links with science parks, incubators and other external initiatives, while the strength comes from the HEI’s commitment for collaboration and knowledge exchange with industry, the public sector and the society.

These statistical results are realistic, according to the committee members. The university collaborates with the industry, the public and the society, but this collaboration is weak. The university has relationships with many stakeholders in different aspects and areas; however, it lacks strong links with incubators, science parks and external initiatives.

The university provides opportunities for students/staff to be part of innovative activities and works toward integrating research, education and industry to activities that can provide new knowledge.

The Internationalised Institution

The overall statistical score for this dimension is the highest among all HEInnovate dimensions, which demonstrates that the internationalisation is the strong side of this university. Furthermore, this result is assessed as underestimated by the self-assessment committee and they proposed to be slightly increased. Internationalisation is a key part of the university. During the last few years, it has established relationships with many HEI in Europe and overseas. More than 100 students and more than 150 professors and administrative staff have participated in international mobilities the last 3 years.
More than 35 are the incoming staff the last three years. International perspectives are reflected in the HEI’s approach to teaching and research.

**Measuring Impact**

The overall average score from the survey respondents for the HEInnovate dimension Measuring Impact is 3.14, which positions this dimension second worst. This statistical result is assessed as overestimated by the self-evaluation committee. They recommended that the average scores for this dimension that should be taken for further analyses should be decreased. The committee members underlined that the university in fact does not assess the impact of the entrepreneurial agenda and how the staff support this agenda. Assessment of the entrepreneurial teaching and learning across the institution is not among the key activities of the university and it does not assess the impact of start-up support, although some initial indicators for measuring the institution’s international activities in relation to its entrepreneurial agenda have been introduced recently.

**Strengths and weaknesses**

The strengths of the University of Vlora are related to the internationalisation, as indicated by the statistical results. This stems from the strong support for international mobility provided by the university to its staff and students. The committee members also analysed the University of Vlora strategic plan 2018-2024 and discussed the strengths in light of the entrepreneurial agenda. The following strong sides could be listed in addition:

- Highly qualified national and international academic staff;
- Diversity of study cycles reflected in a diverse offering programs, as well as increased quality of the studies;
- Standardized procedure on knowledge control and evaluation;
- Efficient use of technology of information management institution, in the teaching process, internal communication and external collaborators;
- Participation in research projects and activities;
- Contemporary technology for organization and management of the university, facilitating the teaching process, evaluation and communication with students;
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- Integrated Student Services Package including: Student Services Career Counselling, Work & Studio Programs, Scholarships based on financial need and merit, Software student exchange at prestigious universities abroad.

On the other hand, the weakest HEInnovate dimension is Preparing and supporting entrepreneurs. The weakness primarily comes from the lack of training for students, graduates and staff on starting, running and growing a business. The committee members discussed the following weaknesses pointed out in the university strategic plan and relevant for the entrepreneurial agenda:

- Outflow of qualified academic staff towards other academic or public institutions, creating temporary vacuum in human resources;
- Limited infrastructure for expansion of the study programs or establishing new scientific and research facilities for practical learning;
- Lack of programs in all three cycles of studies;
- Lack of joint programs with international universities;
- Limited interest for mobility by the students, due to the financial obstacles;
- The international offer and attracting international students is limited, due to the limited foreign language skills by the majority of the staff.

Recommendations for future improvements

The role of the university as a leader can be improved. Similarly, to its role in the preparation of specialists, the university can create concrete links to the labour market, as well as a model of activities between HEI and entrepreneurial activities. In addition, there must be a budget designated by the university for the development of business-to-business science activities, teaching and learning to introduce new concepts in Innovation, and digital impact should be more sensitive (in qualifying practice, in training, innovative new methods etc.)

For improvement of the overall situation and the current entrepreneurial quality of the University of Vlora, the following measures are proposed:

- Increasing the relationship with the government and other external stakeholders to attract sufficient support and finances;
- Exchanging of knowledge with counterpart institutions to grow with full semester courses;
- Integration in the university statute a specific chapter for the entrepreneurial agenda;
• Exchanging of elective subjects among the faculties within the university (e.g. students at the Faculty of Public health to have the chance to select some courses for entrepreneurship at Faculty of Economy or Faculty of Technical Sciences);
• Small grants scheme for students for the implementation of innovative ideas, as well as incentives and rewards for students and staff involved;
• Inviting guest lecturers from the industry on a regular basis;
• Making the local business much more present in academic life, so the businesses have the possibility to identify bright students and to consider them as future employees. This also will make students more aware of the opportunities;
• Measures for boosting the digital culture and improvement of the digital infrastructure;
• Better coordination between the university and the faculties and among the faculties for conducting periodical accurate evaluation of the entrepreneurial agenda;
• Provision of alternative and diverse teaching and learning opportunities for developing entrepreneurial mind-sets and skills.

Conclusions

The purpose of this report is to present the implemented research for conducting the in-depth assessment of the status-quo for the knowledge transfer, innovation and entrepreneurship at the partner country Universities and more general, in the national ecosystems of the three WB countries: Albania, Montenegro and Bosnia and Herzegovina. The research methodology covers all 8 pillars of the HEInnovate model, with focus to the two dimensions that are of highest relevance: Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration. In this final subsection of the report, besides the general conclusions for the report, the overall status in respect to these dimensions in the examined entities is summarized.

From the statistical analyses, it is evident that the overall state of development of the 8 HEInnovate dimensions among the 5 examined PCUs is not at the same level, the two PCUs in Bosnia and Herzegovina are less developed, compared to the Albanian PCUs and the Montenegrin PCU. The European University of Tirana has the highest level of development of the entrepreneurial areas.
Taking the perspective of each of the 8 HEInnovate dimensions among the PCUs, it could be concluded that certain dimensions are less developed for more than one university, and these areas should be addressed with more intense measures and activities. More precisely, Measuring the Impact of the entrepreneurial activities is a weakness for both PCUs in Bosnia and Herzegovina, while Preparing and Supporting Entrepreneurs is the weakest side for the University of Vlora and the University of Montenegro. The European University of Tirana has the lowest score for Organisational Capacity: Funding, People and Incentives, due to lack of sustainable funding and investments in entrepreneurial objectives. As expected, the aggregated analyses for the overall WB region confirmed that the Preparing and Supporting Entrepreneurs and Measuring Impact are the lowest developed HEInnovate dimensions regionally.

The state of development of the two dimensions that are of highest relevance: Entrepreneurial Teaching and Learning and Knowledge Exchange and Collaboration also varies among different PCUs. The lowest score for the first dimension belongs to the University of Mostar, which is not the case for the second dimension. The lowest score for the Knowledge Exchange and Collaboration is given for the University of Sarajevo. It is interesting to be noted that for both universities, these two dimensions were not identified as weaknesses, but due to their highest importance for the establishing and running the commercialisation hubs, we also strongly recommend these two dimensions to be tackled with special attention in the further project development and to be addressed with more intense measures and activities at the Bosnian universities. The detailed analyses of the Entrepreneurial Teaching and Learning indicated that the source for the lower score at the University of Mostar is, among other factors, the relatively weak integration of the results of the entrepreneurship research into the entrepreneurial education offer. The University of Sarajevo experiences weakness in this area due to the weak opportunity for diverse informal learning opportunities and experiences for stimulating the development of entrepreneurial mindsets and skills. Similarly, the detailed analyses of the Knowledge Exchange and Collaboration provided a base for discussing the potential sources for the weakness. Therefore, it could be recommended to the University of Mostar to intensify the integration of the research, education and industry activities for exploiting new knowledge in order to enhance the development of this area. For the University of Sarajevo,
the most potential source for improvements in this area is by strengthening the links with incubators, science parks and other external initiatives.

The existing physical and organisational infrastructure was examined by analysing the available reports and strategic documents. In addition to the university’s specific documents, other relevant reports on a national, regional or wider level were considered. Namely, the European Innovation Scoreboard reports 2018-2020, the Small Business Act, as well as the national and regional analyses related to the development of the smart specialisation strategies were reviewed. It could be concluded that, although the political situation in each of the countries: Albania, Bosnia and Herzegovina and Montenegro is different, in respect of the national priorities, strategies and the available legislative relevant for the areas addressed with this research (engaging the universities and enterprises through commercialisation hubs) are quite similar. All three countries have declared their strategic orientations for establishing well-structured effective national innovation ecosystems and have improved their innovation performance significantly, but for catching up with the developed societies, they need to continue shifting their focus towards businesses. In this respect, it is highly recommended regional cooperation for overcoming the common challenges and stretching the smart goals related to the commercialization of innovations and knowledge on the regional level.

For the identification of the upcoming trends, the conclusions from the Western Balkan summits were discussed. All of the organised WB summits build one on another, as all are in the framework of the Berlin Process. The 2018 London summit emphasized the improving of the business environment, encouraging entrepreneurship, addressing youth unemployment, and promoting regional inter-connectivity as a vehicle for increasing the economic stability. The next 2019 summit held in Poznan, recognized the importance of research and innovation for the future development of the region, as part of the Regional Economic Integration priority. The WB Leaders looked forward to launch of the regional research cooperation hub to enable networking between researchers, including a regional research infrastructure map and completion of regional open access protocols to research infrastructure in time for the next Summit. As an upcoming trend in the WB region, which is also recognized on a national level, it could be emphasized the orientation toward establishing smart specialization strategies and public-private partnerships for boosting the competitiveness and innovation, where the entrepreneurial universities and the commercialization of the knowledge and innovations are in the core.
The results of the research will pave the ground for the development and functioning of the Commercialisation Hubs at each of the involved Partner Countries Universities for reaching more operative level and contributing to the sustainability and further development of the R&D activities. In addition, this research could be solid base for development of university-specific and national policy documents for strategic improvements of the entrepreneurial ecosystems and national economies. Therefore, we strongly believe that the value provided with this report will exceed the needs of the KnowHub project and will influence the economic enhancement of the region on the long-term.
Bibliography


