

COMPARATIVE ANALYSES OF THE ENTREPRENEURIAL BEHAVIOUR OF FIVE WESTERN BALKAN UNIVERSITIES FOR ESTABLISHING COMMERCIALIZATION HUBS

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Abstract

The universities are large and crucial part of the global economy, which tend to follow the evolution in the societies through modernization and wider collaboration with other stakeholders. In this way, the universities are expanding their responsibilities beyond teaching and research, acting in an innovative and proactive manner. This shift of the role that universities play, from a simple role as educational institutions to a complex role of entrepreneurial ecosystems, has stemmed from the knowledge economy and realization of the potential benefits that knowledge has in all aspects of the community.

The importance of the entrepreneurial component of the universities is widely recognized and researched by various scholars and policy-makers. One of the most important initiatives in this respect is the joint initiative by the European Commission and the Organisation for Economic Co-operation and Development for development of comprehensive online guidance and self-assessment tool for HEI (Higher Education Institutions), widely known as HEInnovate. In addition, this initiative provides a guiding framework for policy-making entities to support innovation and entrepreneurship. The aim of the self-assessment tool is facilitation of the analyses based on the institution-wide strategic responses, organised around eight strategic pillars: Leadership and Governance; Organisational Capacity; Entrepreneurial Teaching and Learning; Preparing and Supporting Entrepreneurs; Digital Transformation and Capability; Knowledge Exchange and Collaboration; The Internationalised Institution; and Measuring Impact.

In our research, the HEInnovate tool for investigation the entrepreneurial behaviour of five WB (Western Balkan) universities located in Albania, Montenegro and Bosnia and Herzegovina was employed. The HEInnovate survey was conducted with 254 respondents from various role categories, such as: Administrative leader; Dean/Head of School/Faculty; Expert; External stakeholder; Professor/Teacher; Student (Undergraduate – PhD), etc.

The collected dataset was analysed from two perspectives. Firstly, the country-specific and university-specific responses were observed separately and comparatively among different countries. Secondly, the answers were classified according to the role of the respondents, and relevant role-specific findings were brought to light. From particular interest was the comparison of the behaviours between the most represented internal and external role categories: Professor/Teacher and External stakeholder (businesses, SMEs (Small and Medium Enterprises), start-ups, spin-offs, entrepreneurs and other companies).

This paper presents the revealed results which outline interesting country-specific and university-specific conclusions that will be base for strategic planning of the commercialization hubs that is foreseen to be established at each university. The utilization of the commercialization hubs at these universities will drive them in establishing overall entrepreneurial framework, not only for imposing the entrepreneurial education, but also for setting the commercialization hubs as pivotal point that relates industry, government and communities to the university for maximal exploitation of the benefits of knowledge and research by the society.

Keywords: HEInnovate, entrepreneurial universities, entrepreneurship, commercialization, ecosystem.

1 INTRODUCTION

The knowledge is the primary resource in the knowledge-based economies. The universities, as the main knowledge producers play an important role in the modern, entrepreneurial economies based on knowledge [1, 2]. They have shifted their role as educational institutions to a more complex role of entrepreneurial ecosystems, in order to respond to the 'third mission', which requires them to contribute to the economic progress [3, 4]. The third mission refers to the engagement of the universities with various stakeholders of the society in order to contribute to tackling and addressing crucial societal challenges [5, 6]. In this respect, on a more systematic view as part of the entrepreneurial systems, the universities are described as entrepreneurial universities [7].

There are various knowledge streams and initiatives that study, examine and try to measure the entrepreneurial component of the universities. One of the most important initiatives in this respect is the joint initiative by the European Commission and the Organisation for Economic Co-operation and Development for development of comprehensive self-assessment for HEIs (Higher Education Institutions), widely known as HEInnovate. This tool aims to assist universities in making the innovation and entrepreneurship a core part of the overall institutional strategy. This can be achieved by exploring the entrepreneurial potential, identifying and addressing the challenges the institution faces on its way to establish and strengthen the entrepreneurial culture, from teaching and learning, to stimulating entrepreneurial mind-set, until reaching an effective model for continual collaboration and engagement with the stakeholders where the value for the society will be created.

Our research goal was the assessment of the status-quo of the knowledge transfer, innovation and entrepreneurship at five selected Western Balkan universities located in Albania, Montenegro and Bosnia and Herzegovina. This paper therefore reports on the conducted investigation of the entrepreneurial behaviour of the examined universities. From particular interest was the comparison of the behaviors between the most represented internal and external role categories: Professor/Teacher and External stakeholder (businesses, SMEs (Small and Medium Enterprises), start-ups, spin-offs, entrepreneurs and other companies). The revealed results brought to light interesting country-specific and university-specific conclusions that will assist the strategic planning of the commercialization hubs that are foreseen to be established at each university.

2 METHODOLOGY

The methodological part of the paper builds on the HEInnovate self-assessment tool. The creation of this tool is joint initiative by the European Commission and the Organisation for Economic Co-operation and Development for establishing comprehensive online guidance and self-assessment tool for HEI (Higher Education Institutions), for facilitation of the analyses based on the institution-wide strategic responses, organized around eight strategic pillars: *Leadership and Governance; Organisational Capacity; Entrepreneurial Teaching and Learning; Preparing and Supporting Entrepreneurs; Digital Transformation and Capability; Knowledge Exchange and Collaboration; The Internationalised Institution; and Measuring Impact*. The HEInnovate survey, which is the implemented research methodology behind, contains specific sections with carefully defined and selected questions that are relevant for the eight strategic HEInnovate dimensions. In addition, this initiative provides a guiding framework for policy-making entities to support innovation and entrepreneurship.

The HEInnovate survey was conducted in five Western Balkan universities, located in Albania, Bosnia and Herzegovina and Montenegro. The Table 1 presents the general statistics of the collected dataset, given for each role type and divided per university. 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 universities, the role types which are of highest interest for this research: Professor/Teacher and External stakeholder are present for all universities with significant number of responses.

After the survey was completed, the dataset was cleaned from the incomplete and invalid answers. The final dataset was then analyzed from the two perspectives. Firstly, the country-specific and university-specific responses were observed separately and comparatively among themselves. Secondly, the answers were classified according to the role of the respondents, and relevant role-specific findings were outlined.

Table 1. Respondents per role for each university.

	University of Montenegro	University of Mostar	University of Sarajevo	European University of Tirana	University of Vlora	Total
Administrative leader	2	1	0	10	3	16
Dean / Head of school / Faculty	0	2	0	3	1	6
Expert	1	0	1	0	2	4
External stakeholder	13	7	9	13	6	48
Post Doctoral	1	0	0	0	1	2
Professor / Teacher	11	12	12	10	16	61
Rector / Vice chancellor	0	0	0	0	1	1
Researcher	0	0	0	0	1	1
Student (Undergraduate – PhD)	12	8	11	27	14	72
Technology Transfer Office / Function	0	1	0	0	0	1
Other	4	5	1	0	6	16
Not provided	7	3	6	1	9	26
Total	51	39	40	64	60	254

3 RESULTS

The results from the analysed answers about the assessment of the stage of development of the eight HEInnovate dimensions at each of the five universities overall, and by certain role categories revealed some interesting findings which will be valuable for the strategic planning of the commercialisation hubs. The Figure 1 summarizes the average scores for all HEInnovate dimensions for each of the universities given by all role categories. It is evident that the Albanian universities (European University of Tirana and University of Vlora) are slightly more developed in respect to their entrepreneurial agendas. On the other hand, the respondents from the two universities in Bosnia and Herzegovina (University of Mostar and University of Sarajevo) have reported lower average scores, indicating that they are slightly lagging behind the other two Western Balkan countries. More precisely, *Measuring the Impact of the entrepreneurial activities* is a weakness for both universities 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 Western Balkan 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 universities. 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.

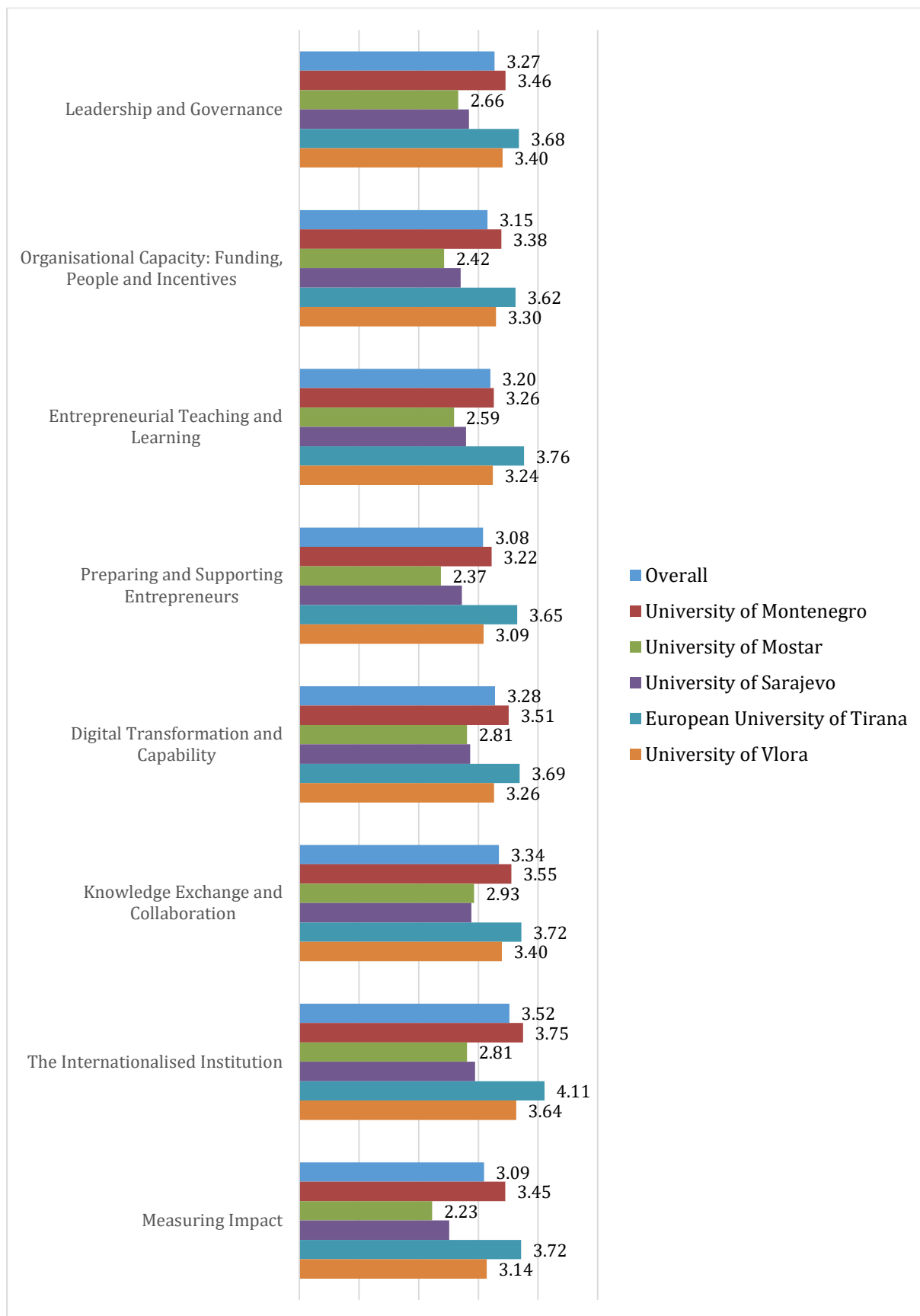


Figure 1. HEInnovate dimensions – average scores.

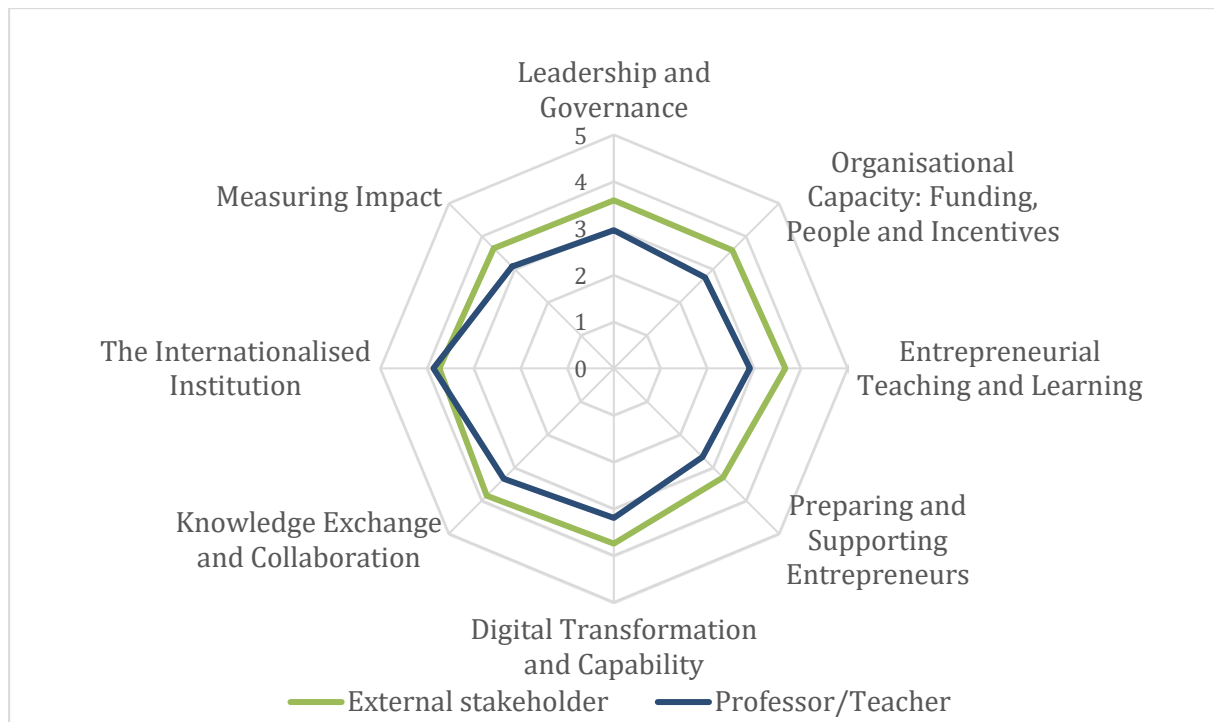


Figure 2. Montenegro – average scores per role.

In respect to the two role categories of highest interest: *Professor/Teacher* and *External stakeholder*, the average scores for the eight HEInnovate dimensions on a national level and overall for the whole dataset are plotted on radar diagrams (Figures 2 – 5).

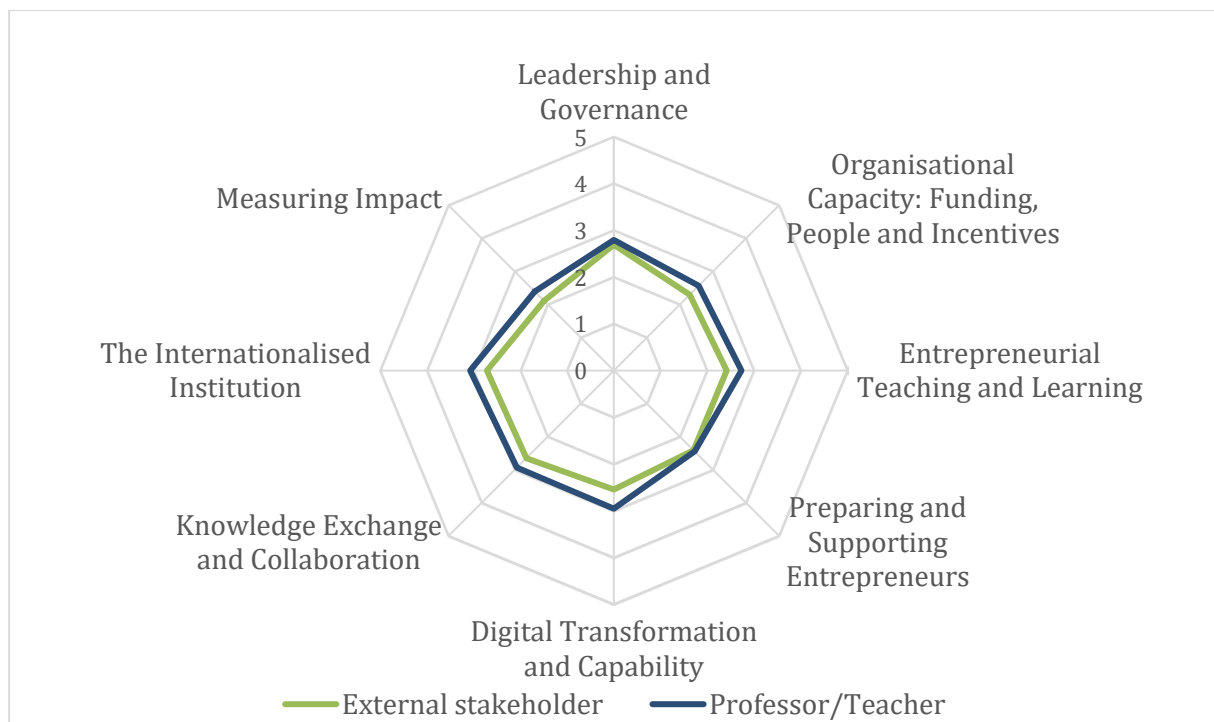


Figure 3. Bosnia and Herzegovina – average scores per role.

It is interesting to be noted that, only in one case – Montenegro, the average scores given by the external stakeholders for all HEInnovate dimensions except *The Internationalised Institution* are higher than those given by the internal stakeholders. In the other two countries, as well as overall, the stage of development of the universities is assessed slightly higher by the internal, than by the external stakeholders. This difference is the most dominant in the case of Albania, which indicates that further

investigation might be required in order to identify the reason behind the deviation in the perceptions between the internal and the external stakeholders.

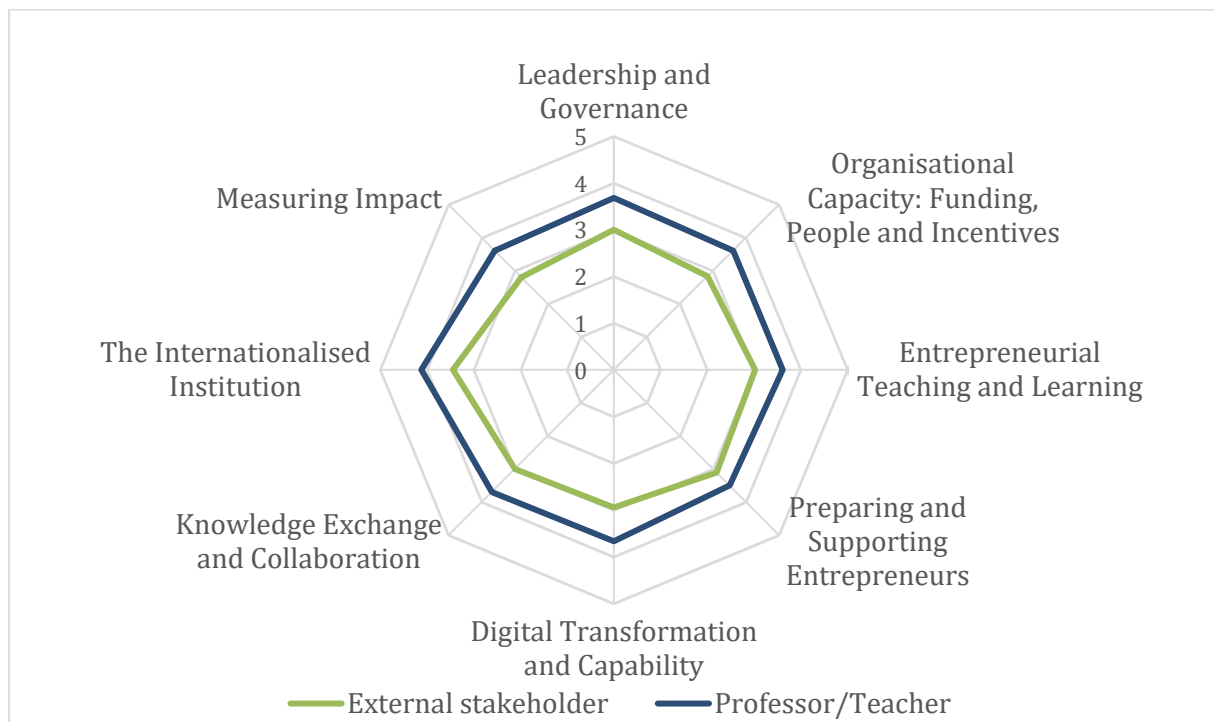


Figure 4. Albania – average scores per role.

However, on the regional level, the perception between both role categories for the stage of development in respect to the separate HEInnovate dimensions is minor (Figure 5).

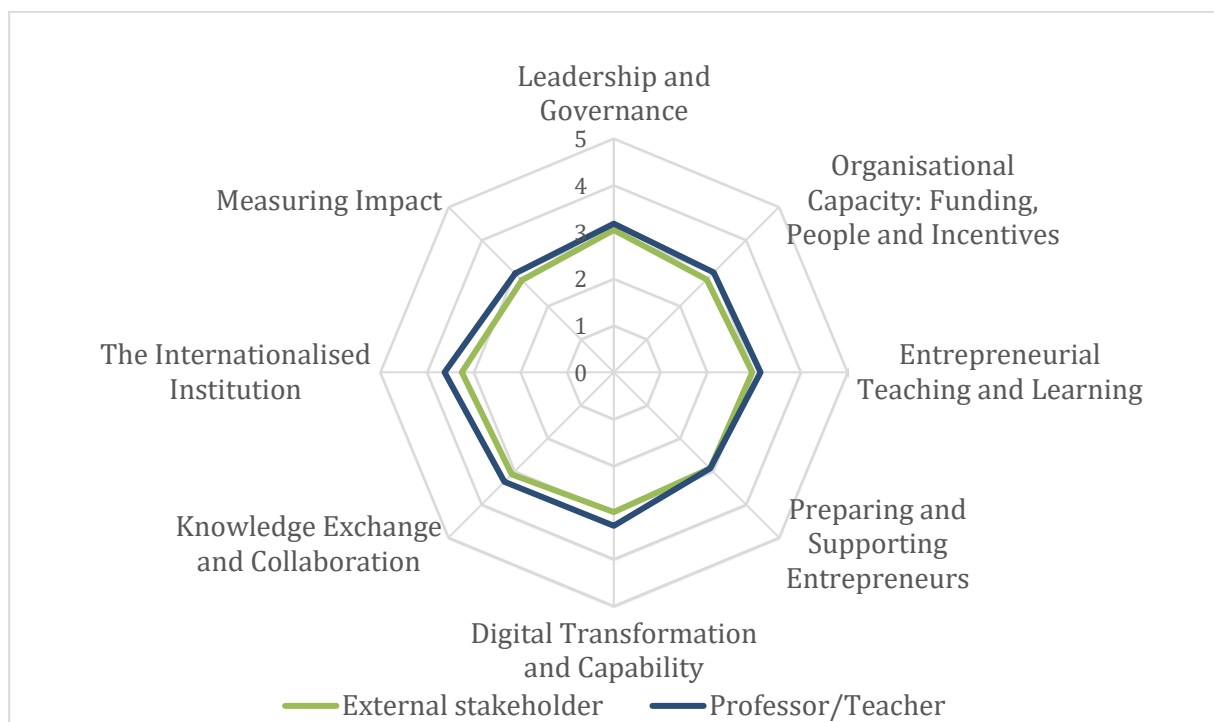


Figure 5. Overall – average scores per role.

4 CONCLUSIONS

The aim of this research was conducting an assessment of the status-quo in respect to the entrepreneurial agendas in the five selected Western Balkan universities: University of Montenegro, University of Mostar, University of Sarajevo, University of Vlora and European University of Tirana. In addition to this, the investigation was extended to assess the aggregated results nationally, in order the country-specific strengths and weaknesses to be identified. For that purpose, the HEInnovate tool was exploited and the survey was conducted in each of the five universities.

From the statistical analyses, it is evident that the overall state of development of the eight HEInnovate dimensions among the five examined universities is not at the same level, the two universities in Bosnia and Herzegovina are less developed, compared to the Albanian universities and the Montenegrin university. The European University of Tirana has the highest level of development of the entrepreneurial areas. Taking the perspective of each of the eight HEInnovate dimensions among the universities, 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. The aggregated results for the region of Western Balkan pointed out that the lowest developed HEInnovate dimensions regionally are: *Preparing and Supporting Entrepreneurs* and *Measuring Impact*.

This study makes significant theoretical and practical contributions; therefore, its importance is twofold. It adds to the existing theory on creation of entrepreneurial universities, extending the knowledge for university-industry engagement. Practically, the results outlined in this study revealed significant findings that will be reflected in the process of establishing and setting up of the commercialization hubs at each of the five Western Balkan universities: University of Montenegro, University of Mostar, University of Sarajevo, European University of Tirana and University of Vlora. Furthermore, these findings will inform the ongoing process for the enhancements of the national entrepreneurial ecosystems in the three Western Balkan countries: Albania, Montenegro and Bosnia and Herzegovina. Last but not the list, the policy makers from the region of Western Balkan could also use these results as a base for projecting the long-term measures for the regional development and addressing their strategic 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.

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REFERENCES

- [1] Z.J. Acs, P. Braunerhjelm, D.B. Audretsch, et al., "The knowledge spillover theory of entrepreneurship", *Small Business Economics*, vol. 32, no. 1, pp. 15–30, 2009.
- [2] D.B. Audretsch, "From the entrepreneurial university to the university for the entrepreneurial society", *Journal of Technology Transfer*, vol. 39, no. 3, pp. 313–321, 2014.
- [3] R. Brown, *Mission impossible? Entrepreneurial universities and peripheral regional innovation systems*. 2016.
- [4] M. Guerrero, D. Urbano, A. Fayolle, et al., "Entrepreneurial universities: Emerging models in the new social and economic landscape", *Small Business Economics*, vol. 47, no. 3, pp. 551–563, 2016.
- [5] C.S. Hayter, D.R. Cahoy, "Toward a strategic view of higher education social responsibilities: A dynamic capabilities approach", *Strategic Organization*, vol. 16, no. 1, pp. 12–34, 2018.
- [6] D.S. Siegel, M. Wright, "Academic entrepreneurship: Time for a rethink?", *British Journal of Management*, vol. 26, no. 4, pp. 582–595, 2015.
- [7] A.N. Link, R.M. Sarala, "Advancing conceptualization of university entrepreneurial ecosystems: The role of knowledge-intensive entrepreneurial firms", *International Small Business Journal: Researching Entrepreneurship*, vol. 37, no. 3, pp. 289–310, 2019.