

## **A three-dimensional evaluation of the importance of results from the interaction between academia and business: approbation at the State Agrarian University of Moldova**

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**Abstract:** *The paper presents the methodology and empirical approbation of a study, focused on the topic of elaboration of a sustainable four-dimensional ecosystem for fostering entrepreneurial mindset and attitudes to start-up creation among young people at the level of university education. The central point of this construct is the university as a higher educational institution (HEI) that is interconnected with three other stakeholder groups – young people, e.g. students, business entities that play an important role in the local end regional economy, and society from local and regional perspective. The outcomes from defining the importance of the major results from interaction between academia and business could be used to support the adaptation of the curricula and the general educational methodologies in the universities in order to stimulate the innovation skills of students and teachers toward a stronger local business capacity. This is also in line with the HEInnovate tool for self-assessment of entrepreneurial universities. The approach is tested within the activities of the project „ReSTART - Reinforce entrepreneurial and digital skills of students and teachers to enhance the modernization of higher education in MOLDOVA”, funded under the Erasmus+ programme of the European Union. The pilot study was implemented at the State Agrarian University of Moldova in October 2019 and the methodology and the major results are published for the first time in this article.*

**Key words:** *Entrepreneurship, Higher education, HEInnovate.*

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**JEL classification:** *M14, I23, I28*

### **I. Introduction**

#### **General project framework**

Entrepreneurship education is an important component of economic strategies to encourage job creation. It is a major requirement of the labour market. So, more and more universities in the Republic of Moldova and beyond, give entrepreneurial education more and more attention.

The European Commission has been a long-term supporter of entrepreneurship education as it sits at the heart of an 'entrepreneurial ecosystem for Europe'.

In 2006 the Recommendation of the European Parliament and the Council on Key Competences for Lifelong Learning

recognised 'sense of initiative and entrepreneurship' as one of eight key competences for every European citizen.

Subsequently, entrepreneurship education has been incorporated into common objectives for the education and training systems of the EU (ET2010 and ET 2020), highlighted as a key action within the Rethinking Education communication and remains one of the three main pillars of the Entrepreneurship 2020 Action Plan "Reigniting the Entrepreneurial Spirit in Europe" adopted in January 2013.

The task of entrepreneurship education is not only to build new businesses, but also and most importantly, to develop entrepreneurial competencies that would help young people to be creative and to

act in a socially responsible way in any life situation.

Therefore, nowadays the role of the education system and policy makers in the training of the younger generation for entrepreneurship has increased significantly as an efficient mechanism for increasing entrepreneurial activity.

The project „ReSTART - Reinforce entrepreneurial and digital skills of students and teachers to enhance the modernization of higher education in MOLDOVA” is aimed at development of curricula, based on entrepreneurial education, internationalization, strategic partnerships and innovative cooperation through digital learning. Its goal is to mainstream and upgrade entrepreneurship and digital learning needs of students, teachers and local businesses from a wide geographical coverage of northern, central and southern parts of Moldova (ReSTART, 2020).

The main goal is targeted by a complex of several interconnected activities for the period of the project contract from November 2017 to October 2020:

- Defining and measuring entrepreneurship learning requirements linked to Moldavian university partners, based on the engagement of relevant stakeholders from education, business, research and civil society;
- Ensuring the modernization of entrepreneurship education in Moldavian universities in line with EU best practices, by capturing local market expectations and capitalizing blended teaching with ICT-methods;
- Harnessing the potential of innovative and updated education based on institutionalization of the entrepreneurial curriculum in all Moldavian university partners;
- Engaging in promoting the entrepreneurial knowledge co-creation to drive innovation and to stimulate local business market.

The domain area of the project is improving quality of education and training by elaboration of learning and teaching tools, methodologies and pedagogical approaches including learning outcomes and ICT-based practices. This is implemented through international partnership with institutions from three

EU-member states and Moldova, as follows:

- The University POLITEHNICA of Bucharest (UPB) – project coordinator;
- The Academy of Economic Studies of Moldova (ASEM);
- University of Ruse “Angel Kanchev” (URAK) – Bulgaria;
- State Agrarian University of Moldova (SAUM);
- Technical University of Košice (TUKE) – Slovakia;
- State University of Cahul “B. P. Hasdeu” (USCH) – Moldova;
- Alecu Russo Balti State University (USARB) – Moldova;
- The Agence universitaire de la Francophonie (AUF) - Central and Eastern Europe Office, Romania;
- Moldova State University (USM).

## II. Methodological approach

The methodology constructed for this empirical study has the following elements:

The **main goal** is to apply a process and a set of criteria for determining whether the university under review has the characteristics of an entrepreneurial university. Those features are from various domains, but are mainly focused on how the university collaborates with other local stakeholders in order to improve the regional capacity and support the creation of knowledge clusters; on implementing new approaches for entrepreneurial teaching, especially with digital learning systems (Antonova, et al, 2018; Iliev, et al, 2018; Kostadinova, 2019; Kostadinova, Kunev, Antonova, 2019; Fleaca & Fleaca, 2014); on fostering students to apply innovative approaches and to investigate factors, influencing innovation management in business companies (Antonova, Stoycheva, 2018; Kostadinova, Antonova, 2018; Stoycheva, Antonova, 2018; Todorova, Ruskova, Kunev, 2018), together with their strategic development and creation of competitive advantages (Papazov, Mihaylova, 2012); and on available organizational capacity and resource to support would be entrepreneurs and projects for start-up creation, etc.

The **objectives** of the study are defined in the following aspects:

- To introduce and demonstrate to the academic audience at the pilot site (SAUM) the concept and application of the HEInnovate online tool for self-assessment of entrepreneurial characteristics of a higher education institution (HEInnovate, 2020);
- To present the general framework (see Fig.1 on the next page) for potential results and benefits from the interaction between universities and business units, together with the impact that they might have of students' professional development and the regional development also;
- To apply a digitalized questionnaire for evaluation of the importance of the potential results and benefits among three groups of stakeholders – academic staff, students, business representatives.
- To analyse and compare the scores of the different dimensions within the interaction framework;

- Based on the analysis to formulate suggestions for future improvements and strategical managerial decisions in the pilot site organisation.

**Target groups** – they include the representatives from the internal and external environment of the university mainly located in the region, where the university operates, e.g. Chisinau - the capital city of Republic of Moldova.

The **method for collecting data** was electronic based through an on-line questionnaire, created with Google Forms™. The respondents are asked to access the form either from a computer, or from their smartphone, but only one response per person is allowed.

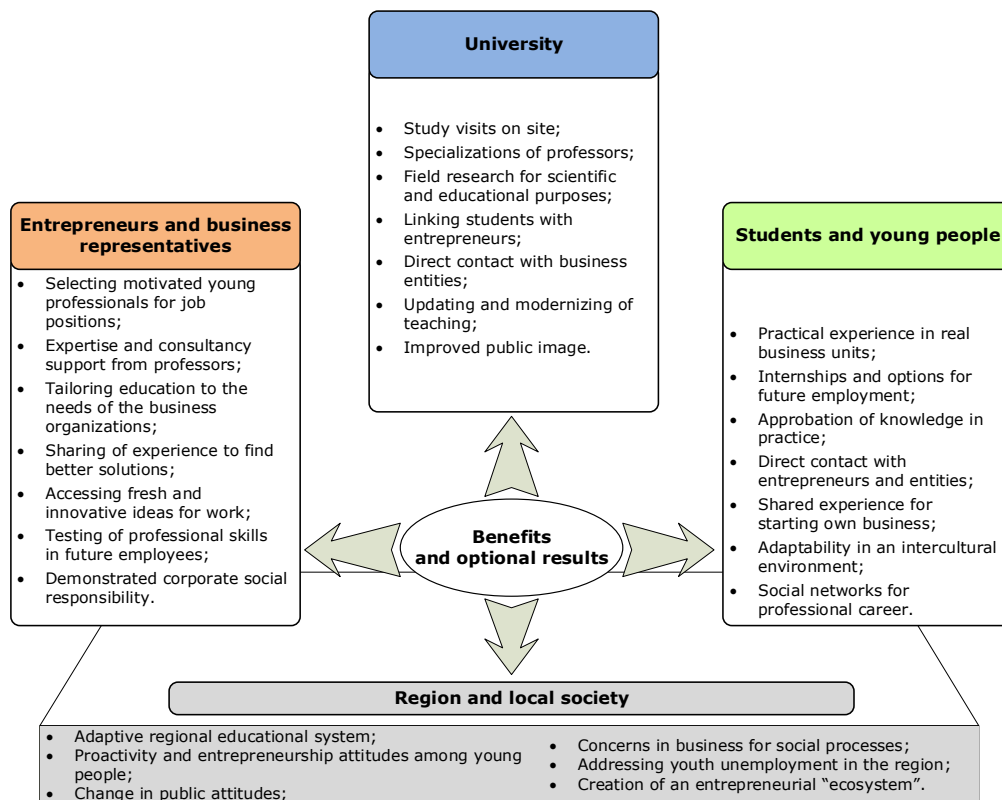


Figure 1. General framework for potential results and benefits from university-business interaction (Antonova, Pavlov, Kunev, 2013)

In order to make the process easier for the mobile device users, a QR code is generated and the persons, that are

present physically in the conference room are able to scan it with their smartphone's camera (Fig.2).



Figure 2. Visual instructions to access the online questionnaire

The **questionnaire**. The instrument for data collection is an online based questionnaire with the following elements:

Survey context questions:

*Q1. According to you, how important for an Entrepreneurial university is to have:*

- Leadership and Governance
- Organisational Capacity: Funding, People and Incentives
- Entrepreneurial Teaching and Learning
- Preparing and supporting entrepreneurs
- Digital Transformation and Capability
- Knowledge Exchange and Collaboration
- Internationalisation strategy
- Measuring Impact

*Q2. How important for Entrepreneurs and business representatives are the following results from connecting with universities:*

- Selecting motivated young professionals for job positions
- Expertise and consultancy support from professors
- Tailoring education to the needs of the business organizations
- Sharing of experience to find better solutions
- Accessing fresh and innovative ideas for work
- Testing professional skills in future employees
- Demonstrated corporate social responsibility

*Q3. How important for Universities are the following results from connecting with entrepreneurs and business representatives:*

- Study visits on site

- Specializations of professors
- Field research for scientific and educational purposes
- Linking students with entrepreneurs
- Direct contact with business entities
- Updating and modernizing of teaching
- Improved public image

*Q4. How important for Students and young people are the following results from connecting with entrepreneurs and business representatives:*

- Practical experience in real business units
- Internships and options for future employment
- Approbation of knowledge in practice
- Direct contact with entrepreneurs and entities
- Shared experience for starting own business
- Adaptability in an intercultural environment
- Social networks for professional career

*Q5. How important for regional and local society are the following results from entrepreneurial education:*

- Adaptive regional educational system
- Proactivity and entrepreneurship attitudes among young people
- Change in public attitudes
- Concerns in business for social processes
- Addressing youth unemployment in the region
- Creation of an entrepreneurial "eco-system"

The suggested answers in all the five contextual questions are evaluated from the respondents for their importance with the help of a 5-dimensional Likert scale with options from 1 (not important) to 5 (very important).

There are two more profiling questions: Q6 - about the specific position of the respondent (Student; Academic professor, researcher; Business representative; Civil society representative; Local authority representative), and Q7 - about the country of origin in alphabetical order (Bulgaria, Moldova, Romania, Slovakia) if the survey might be performed within all the countries in the project consortium.

The **procedure for analysing the data** includes the following steps: data collection via the online spreadsheet from the Google Form<sup>tm</sup>; processing the data with MS Excel<sup>tm</sup>'s built-in functions, mainly by calculation of average score of each answer and creating charts for visualisation of the differences and rankings, based on the averages.

### III. Pilot site

The approbation of the empirical study is done in the State Agrarian University of Moldova (SAUM). It is the oldest university in the country, founded in 1933 under an Order of King Carol II of Romania and the only Higher Education Institution (HEI) in the Republic of Moldova (RM), which trains specialists for the area of agriculture –one

of the most important branches of RM economy (ReSTART, 2020).

According to its declared vision for development, SAUM aims to modernize its educational programs, to increase attractiveness by strategic partnerships, to promote international mobility of students and teaching staff, and to encourage innovation to effectively respond to labour market needs. SAUM is a member of the European University Association (EUA), and other International Organizations, and is involved in many international projects within TEMPUS, Erasmus Mundus, ERASMUS+, Fulbright, Impulse, Cross-border cooperation, etc. (SAUM, 2020).

The team from SAUM is mainly represented by researchers and academic staff from the Faculty of Economics, the Department of Business and Administration, the Department of Marketing and Purchasing, and the Department of International Relations of the University

### IV. Results

The empirical study was approbated in October 2019 during a conference and a dedicated project event "*Good practices in entrepreneurship education*", where a representative of the University of Ruse "Angel Kanchev" (URAK) – Bulgaria presented the concept model of the study and moderated its implementation.



Figure 3. Session with focus group discussion between researchers and students, October 2019, SAUM

After the period for collecting responses both in person, during the conference event, and remotely, by sending the link for the questionnaire to other members of the three stakeholder groups of SAUM (academics, students, business representatives) the sample group consisted of 56 valid answers with the following distribution: Academics – 11 (19,6%); Students – 30 (53,6%); Business – 15 (26,8%).

From a more general point of view, if we look at the average scores of each question, calculated from the responses of its optional answers, the results show that all the four interconnections have a very significant importance (ratings above 4,5) with **total average of 4,63** and individual questions score as follows:

– Q2. Importance of interaction results for the Entrepreneurs and business representatives: av. score 4,66;

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- Q3. Importance of interaction results for the Universities: av. score 4,63;
- Q4. Importance of interaction results for the Students and young people: average score 4,68;
- Q5. Importance of interaction results for the regional and local society: average score 4,55;

The first question in the form, Q1, examines the attitudes towards the eight core elements of the *HEInnovate tool*. All of them have very high results for their importance for the development of an entrepreneurial university, with highest importance for the aspects of Leadership and Governance, and Knowledge Exchange and Collaboration (see Fig. 4).

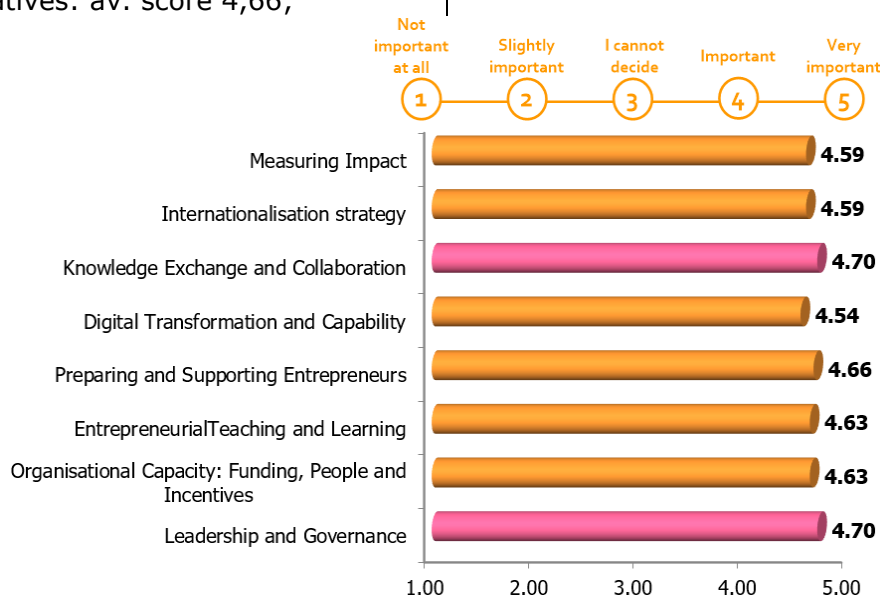


Figure 4. Importance of the eight elements of the HEInnovate tool, Q1

The results for Q2 show that from the suggested optional benefits from interaction for the Entrepreneurs and business representatives the most important ones are those connected with

testing the professional skills of would-be employees and fostering the innovation potential of the company by accessing new ideas and attempts to improve the performance (see Fig. 5).

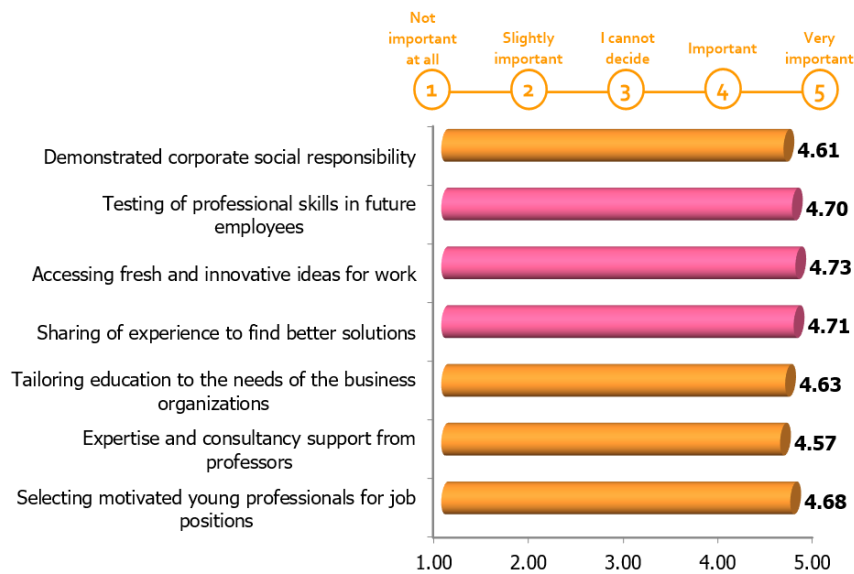


Figure 5. Importance of interaction results for the Entrepreneurs and business representatives, Q2

About the benefits for the universities (Q3) it seems that most visible and easily recognized results, according to the interviewed respondents, are those connected mostly with their educational role – improving the teaching programs and enlarging the practical experience of the

students by linking them with already active entrepreneurs who may share their lessons learnt about success and failure in business (Fig. 6). But those are not so generally valid conclusions, because the differences in the average scores with other optional results are very small.

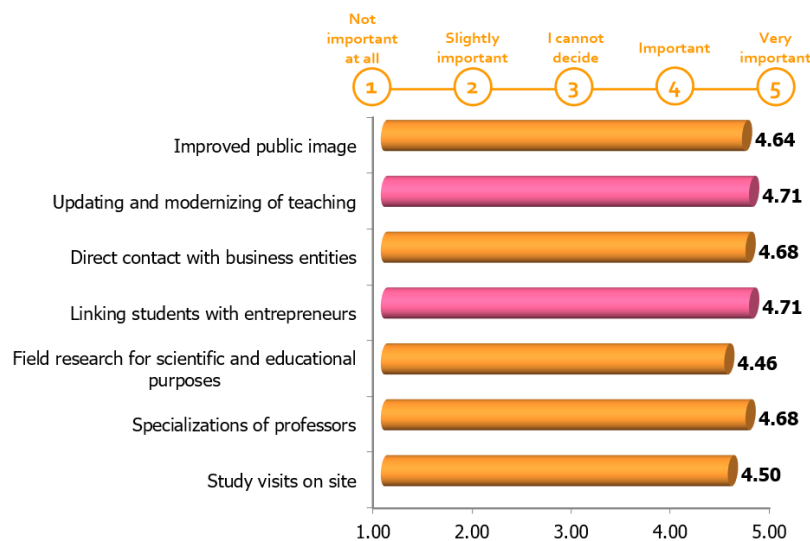


Figure 6. Importance of interaction results for the universities, Q3

If we look at the results of Q4 – the results' importance for the students, we might notice that, like in Q3 average scores, here again the mutual opinion of all the respondents highlights the importance of the possibility for the students to interact

directly with business representatives and to gain experience of what they already have studied in the university in order to add relevant skills to their knowledge (see Fig. 7).

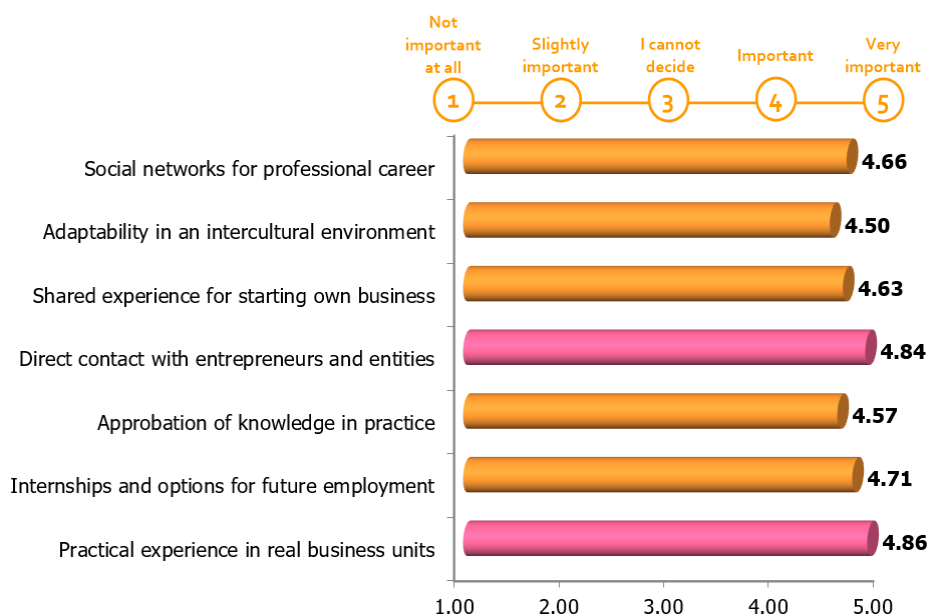


Figure 7. Importance of interaction results for students and young people, Q4

The calculations for contextual question Q5 show that the importance of the effects from the interaction academia-business for the regional and local society is slightly lower than it is for the actors, directly involved – the students, universities and business units (total averages of Q2-Q4). In Table 1 the average scores are displayed not only in total, but also by

category of the respondents. We can see that all the evaluated benefits, have very close results, but the one that is perceived as most important is “Proactivity and entrepreneurship attitudes among young people”, av. score of 4,66. The next important variable (4,59) is “Addressing youth unemployment in the region”.

Table 1. Average scores of the importance of interaction results for the regional and local society, by respondents’ category

<b>5. How important for Region and local society are the following results from entrepreneurial education</b>	<b>Average total</b>	Students	Academic professors	Business represent.
Adaptive regional educational system	4.54	4.50	4.73	4.47
Proactivity and entrepreneurship attitudes among young people	4.66	4.67	4.73	4.60
Change in public attitudes	4.52	4.53	4.64	4.40
Concerns in business for social processes	4.50	4.43	4.82	4.40
Addressing youth unemployment in the region	4.59	4.47	4.73	4.73
Creation of an entrepreneurial “ecosystem”	4.52	4.53	4.73	4.33
<b>Average:</b>	<b>4.55</b>	<b>4.52</b>	<b>4.73</b>	<b>4.49</b>

Since this question (Q5) illustrates the attitudes of the three groups of stakeholders for defining and measuring the impact of entrepreneurial education in

higher educational institutions, it is important to mark the differences in the viewpoints with the support of “radar” visualisation (see Fig. 8)



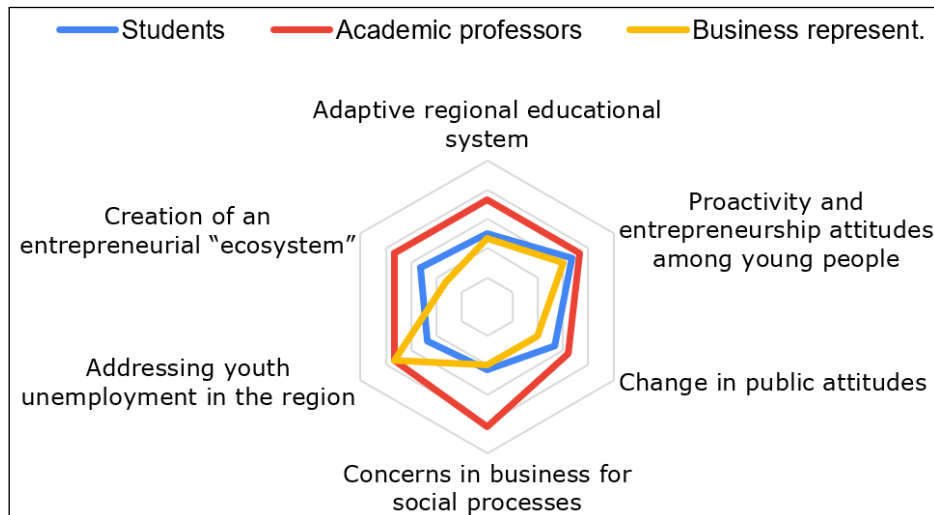


Figure 8. "Radar" of the 3-dimensional evaluation of the importance of interaction results for the regional and local society

Several findings could be defined from the empirical results from this question:

- In general, the academic staff is more concerned about the impact over the regional development, their average evaluation is the highest, 4.73;
- In most of the cases the professors' opinion differs from the opinion of the other two groups, mainly that of the students;
- Interestingly, academics expect concerns in business for social processes to have significant importance, while the business itself doesn't think so;
- Addressing youth unemployment in the region is equally important for academics and business people, while it is neglected by the students;
- In four of the six variable students and businessmen have almost equal perceptions;
- The consensus for the most important variable is for "Proactivity and entrepreneurship attitudes among young people", where all the three groups are solid in their opinion.

Maybe fostering the entrepreneurial thinking among young people in the region is perceived as a primary factor that is the trigger for the other benefits to happen. This opens an area for elaboration of systematic approaches for elaboration and practical application of different set of activities, incentives and measures on regional level by all the relevant stakeholder groups in order to efficiently support the local development and to create better options for personal and

professional development of the young generation.

## V. Conclusions

The empirical study presented in this paper describes the pilot approbation of a specifically elaborated approach for a 3-dimensional evaluation of results from the interaction between academia and business, which is aimed at improving entrepreneurial teaching and motivating higher educational institutions (HEIs) to apply the concept of an entrepreneurial university. The methodology includes definitions of optional benefits in a 4-helix environment – (1) for the students and young people, (2) for the HEIs, (3) for the business entities and (4) for the regional and local society. The test application at the pilot site - State Agrarian University of Moldova (SAUM), done in October 2019, shows ease of use and high level of understanding of the research toolkit from the sample group of stakeholders. Given the fact that the sample size is too small and not statistically representative, this study is a qualitative one, in the form of a case for the pilot site (SAUM), but the data is processed with quantitative statistical methods. So, the major added value here is that the methodological approach could be easily applied representative field studies on that topic, and also in comparative analyses with other pilot sites. Finally, even though the approbation could be done locally like a case at a specific HEI, it gives valuable insights to

the academic management boards how to improve and refine university policies in order to turn into an entrepreneurial university and to increase its regional impact, tailored to the needs of the local socio-economic system.

Furthermore, the results of the research indicate that the implementation of the entrepreneurship education framework demands a review of subject standards, of curricula, of methods and an increased understanding of entrepreneurship education by teachers and students, as well as the necessity of managerial, financial and legal support.

The research carried-out proved that it is necessary to:

- combine theory with practice;
- introduce the topic of entrepreneurship into various subjects, or, introduce a specific subject devoted to this topic;
- develop the students' autonomy, creativity and critical thinking;
- develop students' ability to solve professional issues within the projects

- such as setting up a fictional company;
- develop the students and pupils' soft skills such as flexibility, risk-taking, self-motivation, stress-resistance etc.;
- support competitiveness.

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