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# Supporting Employability by a Skills Assessment Innovative Tool—Sustainable Transnational Insights from Employers

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**Abstract:** Employability remains an important subject in the European and international context. This is the first qualitative and quantitative transnational research of the perception of the heterogeneous sample of employers regarding a sustainable and experimental innovative tool for the assessment of competencies to support employability. The aim of this study is an empirical examining of the employers perception from Austria, Romania and Sweden, from five different sectors of activity regarding a sustainable and innovative online tool for continuous assessment of skills to support employability. In the study, a quantitative analysis was carried out using data based on Eurostat indicators for quality of employment and a qualitative analysis using face-to-face interviews. Our results show that even if there are significant statistically differences regarding the quality of employment according to the Eurostat indicators, all these countries have a good, equally and strong perception with an innovative and sustainable tool for continuous assessment of skills to support employability. The research results fill a gap in the existing literature and offer a new and argued point of view regarding the continuous assessment of competences from the employer's point of view from the three different countries as regarding the social, economic and political aspects.

**Keywords:** employability; transversal competences; specific competences; Austria; Romania; Sweden; sustainable and innovative tool for assessment; employers perception

## 1. Introduction

The European Quality Assurance Reference Framework for VET (Vocational Educational and Training) providers (EQAVET—European Quality Assurance in Vocational Educational and Training) adopted by all European countries has been designed with the objectives of employability, matching supply and demand for skills and qualifications in the labour market and better access to VETs [1] especially for vulnerable groups: graduates, undergraduates from different sectors [2–9], women and migrants [10], adults [11], ageing populations [12–14] or adult refugees [15]. Regarding students, for example, it is important to know that developing both transversal and specific competencies could help them develop personal effectiveness that ultimately empowers them with the feeling of employability [16], their relevance for their process of socio-labour insertion, as well as their global perception to face it [11]. Due of the phenomenon of an increased unemployment rate pervasive among students [4], higher education must add value by developing job-related skills and competencies [2]. Also, human beings must develop many skills, including knowledge acquisition for lifelong and life-wide learning and dispositional employability for an unpredictable future [17].

In a society in which globalization is a key element, it becomes vital that each citizen is able to use their transversal competences in an international context [18]. The knowledge society excludes people with low educational attainment from the labour market [19]. In Europe, several positive and effective initiatives have been developed, in particular to the “Not in Education, Employment or Training” customer groups, the European Union has long been trying to predict changes of necessary knowledge and skills of the future population and harmonize existing competencies of graduates with the competencies demanded by the labour market [8]. Despite the introduction of innovative training approaches and specific tools to increase quality, the evaluation stage still needs to be improved [20].

In this context, the results from the present research has, as a framework, an Erasmus+ project, which contributed both to the professionalization of workers in training and professional insertion but also to the graduates and/or undergraduates from higher education (i.e., some of the working situations include specific competences for tourism guide, sales manager, inventory manager, jobs which need a university degree). This project developed a methodology and a continuous assessment tool allowing evaluating for a given skill, the performance that is correlated with the importance (requirement) attributed to it by the employers and the level of performance expected. This approach enables to monitor more closely the progress made with regard to the targeted job over a period of time, in other international studies (most of them from Spain and about students employability) being pointed out the way in which the employability of integration workers is promoted [10]. In the literature review we find a significant number of research studies resulted from either governmental projects [10], Erasmus+ projects [21,22] or national projects [8] with an appropriate aim regarding the employability and/or competencies assessment.

This experimental and innovative tool tracks employability skills’ acquisition among high school and/or high education youth and/or adult participants in training as well as recommendations on further developing key skills competencies for employment. The necessity of this type of tool for competencies assessment derives from the fact that its current narrow focus on workforce development underestimates the challenges of improving employment [23]. This tool was created during the above-mentioned project for using by the all stakeholders (including: trainers, advisers, general managers, human resources managers, graduates, undergraduates, and higher education teachers) in order to perform the continuous assessment process of employability through training and support programmes within their organisations using the tool for continuous assessment of skills and approaches to support employment. The project was developed in five European countries (Austria, France, Romania, Spain and Sweden) and in the international literature we identified only one another appropriate online tool, respectively: an e-assessment online platform [22] with a declared aim to develop only digital competences as a transversal component that is necessary for a wide variety of work profiles [22]. Also, we mention that:

- The five partnership countries, Austria, Romania and Sweden chose to make a pilot testing of this experimental online tool for a fixed number of 15 employers from different sectors, in one single day at the final meeting of the project;
- The structure of the project’s partnership included two universities (Romania and Sweden) and three counselling institutions (Austria, France and Spain).

Due of the importance of employability, many studies have focused on this issue but none has analysed employability from a perspective of a continuous assessment of the both transversal and specific competencies and pointed out the transnational employers’ perception of a measurement tool for employability, both for educated and non-educated people.

The aim of this research is an empirical examination (both qualitative and quantitative) the perception of employers from three European countries (Austria, Romania and Sweden) and from five different sectors of activity (tourism, healthcare, industry, building, retail) regarding an experimental and innovative online tool for continuous assessment of competencies to support employability.

Regarding the theoretical concepts used in the present study, we have taken into consideration the definitions given by international organizations for the transversal competencies [24]: the UNESCO

International Bureau of Education, “skills that are typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge and that can be used in a wide variety of situations and work settings (for example, organizational skills)” and for the specific competencies [25]; the European Union Commissions definition, “specific skills increase the value of a person only within the company where he/she has acquired it; leaving the company leads to devaluation of all the specific skills since they do not apply in other companies, sectors and occupations”.

The present empirical study provides knowledge, the original and added value of this research consists of:

- The transnational approach of the studies, applied in the three different European countries: Austria, Romania and Sweden, motivated by the fact that cultural aspects may influence the importance given to the competences [21].
- The heterogeneous sample of the study (employers from five different sectors and different qualities of the respondents in the companies: managers/owners/associates/employees/human resources managers) because we consider that employers as relevant subjects that are in a position to give realistic assessment of the level of quality of required competencies [4]. They also have a different perception than the educators [26] and they usually identified a missing link between theory and practice [20]; the employers consider the formation of a job candidate an added value, but this is not one of the key issues regarding employability [19].
- Analysing the differences regarding both types of competencies not only across ones, i.e., the transversal competencies between employees [18].
- The analysis of the perceptions and impact among respondents (managers/owners/associates/employees/HR managers) in the three countries regarding an experimental, new and innovative online tool for employability with both qualitative and quantitative methods, not only qualitative one [5].

The article is structured into six sections. After the Introduction, Section 2 presents the reviewed literature regarding the conceptual evolution of employability and related concepts, most recent evolution of different type of employability measurement and the actual implications of the employability at the international level in global context; Section 3 presents data and methodology divided into four subsections, respectively: description of the experimental and innovative tool, data selection for quantitative and quantitative analysis, and statistical methods used for analysis. The results are then presented in Section 4 for both quantitative and qualitative analyses and discussions in Section 5. The paper ends with Section 6, which summarizes the main findings and also refers to the research limitations and implications.

By the novelty of the research transnational conducted in a three European Union countries where the problem of the continuous employability assessment for different targeted groups and different level of quality of employment, the paper can become a landmark with implications for: managers, educators and scientific community.

## 2. Literature Review

Employability has become a key concept that has attracted the attention of scholars and industries in many countries [27–29] but this concept is highly fluid and vague because its nature is not evidenced by real employment and differences in the nature of labour markets from country to country [27].

Higher education adds value by developing job-related skills and competencies but it is also not known to what extent the graduates’ competencies line up with the demands of the employers [2]. Higher education institutions are under pressure to produce employable graduates who are required to contribute to the sustainability of strong economic growth and development [30]. More research recommendations line up with the necessary partnership approach between academia, students and industry [31]. Students must be better equipped with the necessary skills for both employability and global citizenship [31].

Nowadays, evaluation of training and learning results are most often done in the final phase, by measuring success rates in terms of returning to work or entering qualifying training. Longer-term monitoring can sometimes identify the retention rate. Most formal learning modules propose a sequence of learning assessment with, in general, suggestions for further learning according to prior assessment results. Graduates, for example, have limited ability to self-assessment [32] therefore they need an employability assessment tool which offer also recommendations according to the type of job profile, like the proposed innovative tool from this study.

Usually students and graduates use a self-assessment instrument to measure the competencies [33] but they could use the innovative tested tool to diagnose a pattern of strengths and weaknesses of their own competencies. The latest research in this field emphasises that they need to a realistic and objective estimate of their employability [33] and our proposed innovative tool could respond to this actual request.

Further, studies dealing with informal or non-formal learning have shown a lack of evaluation tools adapted to these types of training situations, particularly in a dynamic dimension over the duration of an integration path (in vocational situations) [34], or, in the case of students, a medium–low development of competencies for employability [3]. A successful transition from university to working life requires that graduates are able to employ their education and academic competences in real working-life contexts [32].

Also, we consider that it is important to know what factor of employability is important for practitioners: soft skills, hard skills or specific ones [5,35] because this could depend on the sector of activity, i.e., for the interior design sector, it prioritizes soft skills when screening candidates [35] but for a graduate, both hard and soft skills are rated equally important by employers overall [28]. We mention that for the hard and soft skills, we refer to the accepted definitions of the international organizations for hard skills [36] as per the OECD definition, “the technical and analytical competencies and know-how that allow the worker to perform the mechanical aspects of a job” and for the soft skills, the integrated definition of UNECO [37], FAS [37] and European Union Commission [25], respectively:

- “A set of intangible personal qualities, traits, attributes, habits and attitudes that can be used in many different types of jobs [37], and the inter-personal and intra-personal skills required to be effective in the workplace.” [37]
- “Non-job specific skills that are related to individual ability to operate effectively in the workplace” [25] and also “skills that are cross-cutting across jobs and sectors and relate to personal competences (confidence, discipline, self-management) and social competences (teamwork, communication, emotional intelligence).” [25].

In most of the studies from the international literature, only some competencies are approached [16], or only some type of subjects, mostly students and/or graduates [3,16]. Some authors also mention the importance of a set of competencies that will allow a continuous improvement and updating in the professional, social and personal performance, in addition to their career inception [11]. Other research emphasises the importance of specific competencies that contribute to the success of fresh graduates at work [28].

Trainers intervening over the duration of the social and professional integration pathways are much less able to measure the progression of social skills and the employability of the beneficiaries. Nowadays, the incorporation of employability skills in the university curriculum bridges the gap between industry and institutions of higher education and become a major issue [38]. Also, in the current context of the fourth industrial revolution [3,39] and the context of socio-economic crisis and widespread labour precariousness [10] enterprises fight against the exclusion of people with social and labour integration difficulties by improving their employability [10]. The international research highlights that, for graduates, employability skills, following management, leadership and information technology skills, are identified as skills that require additional training [38].

Regarding the validity and reliability of an uniform, unique tool for employability measurement, in the recent international literature we also identified other types of framework and/or tools with an

appropriate aim, i.e., STELEM (Socio-Technical E-learning Employability System of Measurement) [17], self-perceived employability (SPE) scale [40,41], work ability index (WAI) or the single-item work ability score (WAS) [13], standardized competence assessment procedure [42], data mining techniques being in fact the single tool that it shows their weaknesses that they need to overcome for being employable in various companies [6], extra and co-curricular activities (ECCAs assessment) [43], novel methodology for assessment of transverse and specific competences in civil engineering [44,45], pilot tests [46], CAT (Competency Assessment Tool) [47], WIL–Work-integrated learning [48], fuzzified expert system for employability assessment [49], CBT(competencies-based training systems) [50] or assessment tool for sustainable employability [51].

Therefore, we consider that our present empirical research results fill a gap in a well-known and accepted theoretical conceptualization of the employability measurement by explaining the determinants of employability from the employer’s perspectives [30].

### 3. Data and Methodology

#### 3.1. Description of the Experimental and Innovative Tool

The framework used to design the experimental and innovative tool (which consists in a free online platform) was the competences, divided into two “blocks” transversal competences and specific ones both being checked through working situations for five sectors: industry, healthcare, tourism, retail and building because assessing general and key competences continues to be a challenge [52]. All the five sectors included jobs profiles for high school graduate and high education graduates.

This online platform (tool) is based on strong and detailed desk research developed in the five European countries and includes a summary and a comparison between existing programs and measures in these countries and highlighted the strengths and weaknesses, assessment and evaluation of employability, methods that have been used and degree of performance (detailed in Appendix A. A brief summary of accompaniment measures or programs in Austria, Romania and Sweden).

After that, a database of transversal and specific competences for the five sectors (building, healthcare, industry, retail, tourism) and some job profiles/working situations in these sectors was created.

Finally, a transparent and free tool was developed for continuous assessment of skills to support employment with a declared aim to be used in different phases of a training support program. In Figure 1, we briefly present the steps for using the online tool for assessment.

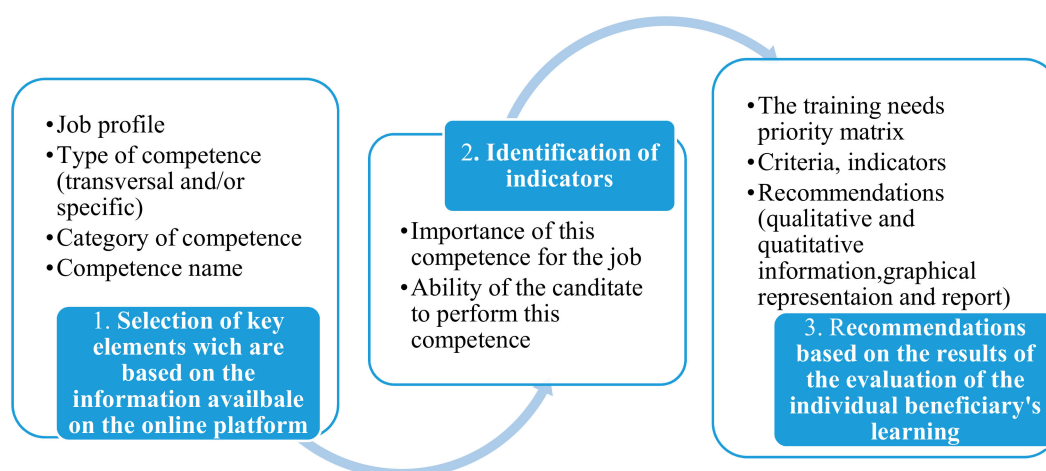


Figure 1. Steps to use the online tool.

This innovative and experimental tool can be used for so many different working situations, job profiles and stakeholders:



- To mismatch between required qualifications and applicants' skills: some vacancies required by companies cannot be filled because of the lack of experience or qualification of applicants;
- To identify the required skills of a specific professional profile, to evaluate competences and make recommendations for training courses and/ or further skills' development
- Base of assessment—theoretical assessment of soft skills versus hard skills;
- Trainers/coaches and human resources' experts responsible for the professional (further/continuous) skills' development of low-skilled adult and young people (i.e., the planning phase of assessments and possibly in parallel with planning a training event).
- Self-assessments of an employee to employment support;
- Self-assessments of a graduate/undergraduate to support employability;
- Yearly evaluation of the employees for testing their evolution;
- Assessment of a candidate for any job of the five sectors existing on the platform of employment support;
- Assessment of any employee of an organisation;
- Only for testing the transversal competences, either for one of the five sectors or for any other sector.

This online free tool is a concrete and innovative tool in order to assess and improve employability in these sectors. This tool is transparent and free to use giving the possibility to add and to include other details or job profiles when needed.

### 3.2. Data Selection for Quantitative Analysis

It is well known that each of the three countries in the study is different from each other (economically, geographically, culturally, politically and socially). As such, we decided to use the Eurostat statistical indicators regarding quantitative employability aspects of these countries (respectively quality of employment and skills related statistics) to test if exist or not the statistical significance differences between these countries.

Our motivation for this approach is based on the theoretical and practical aspects from literature review that have shown that the occupational skill level has a substantial influence on the upward mobility of jobs [53] and because the interplay between organizational-level factors and individual-level factors influencing the outcomes of employee recruitment and job search activities [54]. Also, the effect of training on continued employment could be different in the region of the same country [55] and especially between countries from the different regions of Europe.

Our primary goal for this approach is to demonstrate that even if there are significant differences between employment indicators (between countries or regions of the same country), the necessity of an easy-to-use and free tool for continuous assessment of competencies is useful. Moreover, we want to demonstrate that the employers' perception is a necessity because graduates' competence goes in line with the demand of the employers [2] and employment is seen more as a type of membership, where one must match the corporate culture [27].

Regarding the particularities of the three countries, in Sweden and elsewhere, work strategies have gained greater significance in social policy and now also in settlement programs for refugees for their integration process and for increasing their employability [56]. Developing refugees' skills and competencies, especially for those with a low level of education, is one of the most relevant factors to boost employment and integration [15]. Also, skill development is viewed as an escape from the low education/high unemployment trap in developing countries [57].

For the quantitative analysis based on the questionnaire, the items used in the questionnaire are mentioned in the next tables and was measured with a five-point Likert scale (1—Totally disagree to 5—Totally agree). These items were established by the international project team and tested previously in each partner countries. The structure of the sample is presented in Table 1. Each country had 15 questionnaires completed.

**Table 1.** Sample description.

Characteristics		Austria	Romania	Sweden	Total
<b>Type of organization</b>	Public	0	2	3	5
	Private	15	13	12	40
<b>Size of the organization</b>	0–9 employees	7	8	11	26
	10–49 employees	8	2	4	14
	Over 250 employees	0	5	0	5
<b>Sector</b>	Tourism	3	0	0	3
	Healthcare	3	0	6	9
	Industry	3	8	0	11
	Retail	0	5	0	5
	Building	3	0	4	7
	Other	3	2	5	10
<b>The function held within the organization</b>	Manager	8	8	0	16
	Owner	7	5	0	12
	Associate	0	2	3	5
	Human resources manager	0	0	2	2
	Employee	0	0	10	10

In Table 1, it can be seen that most respondents are from the private SME companies (Romania has all the five bigger companies in the study) from the different sectors and most respondents are managers/owners/associates.

### 3.3. Data Selection for Qualitative Analysis

For the qualitative analysis we used both face-to-face interview and open questions included in the questionnaire with the before mentioned items. These open questions referred to the following aspects: how the employers used the tool, in which situation, for what specific purpose and client groups; during the test they assessed/or no all competences; the employers think that they will use this tool in their professional activity and recommend it to other professionals and why; they consider that this tool can be complementary to the tools already used; if they have any comments or suggestions that could be useful to improve the tool; do they think that a further development of the tool could be interesting, and what is their idea about it.

The results for this qualitative analysis are presented in Section 4.2.

### 3.4. Data Analysis Methods

For testing the differences between countries starting from the Eurostat indicators, we use Student *t*-test and chi-square bivariate test. To test the reliability and validity of the scale used for the items we applied Cronbach's alpha coefficient (Table 2) and descriptive statistics. It can be seen that for our research items the coefficient is more of 0.700. To test the differences between countries regarding the perceptions of the innovative tool we used also the chi-square bivariate test.

**Table 2.** Reliability statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.922	0.920	10

For the quantitative analysis (both the Eurostat indicators and items from the questionnaire), descriptive and inferential statistics were used through the statistical program SPSS v17.

## 4. Results

### 4.1. Quantitative Data Analysis

Because the three countries in the study (Austria, Romania and Sweden) are from different regions of Europe and we also consider that each of them has some particularities (economically, socially and politically), we applied the Student *t*-test to test if there is statistical significance between the indicators of quality of employment using the EUROSTAT indicators. The results are presented in Table 3.

**Table 3.** One-sample test.

Items	t	df	Sig. (Two-Tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Employed persons participating in job-related non-formal education and training in the past 12 months by gender and age (%)	9.293	11	0.000	34.8417	26.590	43.093
Volume of job-related non-formal education and training per participant in the last 12 months by duration, gender and age_1 day (%)	13.570	3	0.001	11.9250	9.128	14.722
Employed persons perceiving that their job-related non-formal education and training helped to improve the way they work by gender and age—total (%)	20.520	3	0.000	82.8000	69.959	95.641
Employed persons whose job involves improving their skills by gender and age (%)	24.347	11	0.000	74.3500	67.629	81.071
Employed persons whose work experience and job skills would be helpful to find another job by gender and age (%)	10.096	7	0.000	36.2250	27.741	44.709
Enterprises providing training by type of training and size class—% of all enterprises:						
• CVT (Continuous Vocational Training) and/or other forms of CVT	9.533	11	0.000	66.9750	51.512	82.438
• CVT courses-internal	6.592	11	0.000	35.3083	23.519	47.098
Participants in CVT courses by gender and size class—% of persons employed in all enterprises	10.450	11	0.000	35.4167	27.957	42.876
Main skills targeted by CVT courses by type of skill and NACE Rev. 2 activity—% of enterprises providing CVT courses_general IT skills:						
Total	5.952	7	0.001	18.1500	10.939	25.361
Industry	5.502	7	0.001	18.4875	10.543	26.432
Construction	4.200	7	0.004	12.6500	5.528	19.772
Retail	5.615	7	0.001	16.2250	9.392	23.058

According to the results presented in Table 3, we can conclude that for all employability indicators, there are statistically significant differences between the averages of these indicators.

To complete the comparisons between these countries, we applied also the chi square test, with statistic hypothesis:  $H_0$ : There are no statistically significant differences between the countries referring to the employability indicators. The results of this test are presented in Table 4 (only for results with *p*-value < 0.05).

According to the results in Table 4, only for the three indicators the statistical hypothesis is rejected and it can be concluded that regarding these indicators there are statistically differences between Austria, Romania and Sweden, respectively for: percentage of persons employed in all enterprises who participate in CVT courses by type of skills and NACE Rev. 2 activity, percentage of enterprises providing CVT courses for general IT skills for industry and the retail sector. For all the rest of employability indicators, there are no significant differences between Austria, Romania and Sweden.

Starting with the results presented in the next table (referring to average score for each item and for each country), we applied the chi-square statistical test to verify if there are statistically significant differences depending on the variables in Table 1 referring to the perception of each item of the study in Table 5.



**Table 4.** Results for chi-square test for Eurostat indicators.

No.	Hypothesis	Person Chi-square	df	Asymp. Sig. (2-Sided)	Theoretical Value of Chi-square	Conclusion
A. There are no statistically significant differences between countries, referring to:						
1.	Employed persons participating in job-related non-formal education and training in the past 12 months by gender and age (%)	9.000 <sup>a</sup>	2	<b>0.011</b>	9.210	H <sub>0</sub> accepted
2.	Employed persons whose job involves improving their skills by gender and age (%)	9.000 <sup>a</sup>	2	<b>0.011</b>	9.210	H <sub>0</sub> accepted
3.	Enterprises providing training by type of training and size class—% of all enterprises_CVT and/or other forms of CVT	9.000 <sup>a</sup>	2	<b>0.011</b>	9.210	H <sub>0</sub> accepted
4.	Enterprises providing training by type of training and size class—% of all enterprises_CVT courses-internal	9.000 <sup>a</sup>	2	<b>0.011</b>	9.210	H <sub>0</sub> accepted
5.	Participants in CVT courses by gender and size class—% of persons employed in all enterprises	6.300 <sup>a</sup>	2	<b>0.043</b>	5.991	H <sub>0</sub> rejected
6.	Main skills targeted by CVT courses by type of skill and NACE Rev. 2 activity—% of enterprises providing CVT courses_general IT skills_industry	6.000 <sup>a</sup>	2	<b>0.050</b>	5.991	H <sub>0</sub> rejected
7.	Main skills targeted by CVT courses by type of skill and NACE Rev. 2 activity—% of enterprises providing CVT courses_general IT skills_retail	6.000 <sup>a</sup>	2	<b>0.050</b>	5.991	H <sub>0</sub> rejected

**Table 5.** Average score for the items.

Items	Average Score		
	Austria	Romania	Sweden
1. The online platform is easy to use	4.33 Agree	4.44 Agree	4.53 Totally agree
2. The tool is an attractive one for competences evaluation	4.53 Totally agree	3.44 Neutral	4.2 Agree
3. The time required for using the tool is quite good	4.40 Agree	3.33 Neutral	4.27 Agree
4. The information included to guide you “using the tool” is complete and useful	4.93 Totally agree	4.22 Agree	4.67 Totally agree
5. The information provided by the tool is practical and understandable for all users	4.80 Totally agree	3.78 Agree	4.73 Totally agree
6. The selection and identification of transversal competences is relevant and complete	4.67 Totally agree	4.00 Agree	4.80 Totally agree
7. The selection and identification of specific competences for jobs focused is relevant and complete	4.67 Totally agree	3.44 Neutral	4.80 Totally agree
8. The working situations to demonstrate the competences are relevant and concrete	4.2B Agree	3.89 Agree	4.87 Totally agree
9. The report provided by the online tool is complete.	4.80 Totally agree	3.88 Agree	4.67 Totally agree
10. The report provided by the online tool is useful for my activity.	4.67 Totally agree	3.75 Agree	4.60 Totally agree

For all 10 statements in the study, there are no statistically significant differences according to the country of origin of the employers but there are some statistically significant differences for the following items (Table 6).

According to the size of the organizations involved on the study, there are differences for the following items 3, 7, 8, 10 from the Table 6. According to the sector of the companies involved in the study, there are differences only for item 3 (The time required for using the online tool is quite good) and according to the function held by the respondent within organization, there are differences only for item 8 (The working situations to demonstrate the competences are relevant and concrete).

#### 4.2. Qualitative Data Analysis

The results of the qualitative research are presented, comparatively for all the three countries, in Table 7.

**Table 6.** Results for chi-square test for items.

No.	Hypothesis	Person Chi-square	df	Asymp. Sig. (2-sided)	Theoretical Value	Conclusion
A. There are no statistically significant differences according to the <i>size of organization</i> , referring to:						
3.	The time required for using the tool is quite good	16.156 <sup>a</sup>	6	<b>0.013</b>	14.449	H <sub>0</sub> rejected
7.	The selection and identification of specific competences for jobs focused is relevant and complete	20.435 <sup>a</sup>	6	<b>0.002</b>	18.547	H <sub>0</sub> rejected
8.	The working situations to demonstrate the competences are relevant and concrete	25.056 <sup>a</sup>	6	<b>0.000</b>	22.457	H <sub>0</sub> rejected
10.	The report provided by the online tool is useful for my activity	23.737 <sup>a</sup>	6	<b>0.001</b>	22.457	H <sub>0</sub> rejected
B. There are no statistically significant differences according to the sector of the companies, referring to:						
3.	The time required for using the tool is quite good	36.436 <sup>a</sup>	15	<b>0.002</b>	32.801	H <sub>0</sub> rejected
C. There are no statistically significant differences according to the function held by the respondent within organization, referring to:						
8.	The working situations to demonstrate the competences are relevant and concrete	21.863 <sup>a</sup>	12	<b>0.039</b>	21.026	H <sub>0</sub> rejected

**Table 7.** Results for qualitative research.

Open Question/Face-to-Face Interview	Austria	Romania	Sweden
How the employers used the tool, in which situation, for what specific purpose and client groups?	The employers did not assess all competences, just the ones, which were relevant for their sectors	Like a new type of the evaluation or for testing the competences for a candidate	To assess competences before employment, to get an overview of the competences, to assess social skills
During the test they assessed/or no all the competences?	Transversal competences, which are applicable in the specific situations.	10 of 15 employers used the tool to assess all the competences	Transversal competences, which are applicable in their sectors.
The employers think that they will use this tool in their professional activity and recommend it to other professionals and why?	Yes, because they highlighted it as “new and useful”, “practical”, “very comprehensive” and that “it tackles the most relevant issues”.	Yes because it is “useful”, “practical”, “an efficient tool for assessment of competences”, “interesting but could be improved”. Also, it was employers with negative answers like “just in the specific situations”, “no, it is not dedicated for proposed aim” or “only after the completing/developing the present tool”	Yes, because “it’s a platform that could be used in different areas and with different target groups such as unemployed, migrants, staff, graduate/ undergraduates, etc.”, “The platform is very flexible and user friendly and you can choose what competences you are interested in and want to assess”.
They consider that this tool can be complementary to the tools already used?	Compared with other tools, which the participants have already used complementary, they stated that this tool “is more detailed (skills scope)” and “it is good for concrete matching”. Especially, it is “good for recruiting processes”	Some of the employers used only their own tool for evaluation or they consider that it is destined only for HR department but the other consider that “could improve the specific competences”, “this tool is efficiently and speedy”, “it gave supplementary information for the evaluation process”	Yes, because “it’s always good to have a tool to assess competences and can be useful for developing the staff’s competences and to have an overview what the needs are”
If they have any comments or suggestions that could be useful to improve the tool?	Just one employer made a remark and suggested to “make it a bit less ‘complex’”.	“To develop for more sectors”, “it is necessary more types of job profile in the same sector”, “must be developed”, “reducing the number of questions for time efficiency”	No comments and suggestions
Do they think that a further development of the tool could be interesting, and what is their idea about it?	Further development of the tool was met with great interest. It was recommended to “enlarge it by other work sectors”. Moreover, it was suggested that it could be interesting to “specify parts of it for migrants.”	Some of the employers “will recommend this tool for their HR department”, “it is very possible in the future to use it”, “it is very useful for the evaluation process”, “they will use but it must be improved”	“Yes, could be interesting to develop the tool with more competences and more sectors”, “after the assessment it could take an online course in the areas that you need to improve your competences”, specify parts of it for migrants.

## 5. Discussions

Lack of employability skills is one of the problems employers face with graduates or their future employees [58]. Candidates may have the qualifications and hard skills needed to be able to manage the job but, without a well-honed set of soft skills, employers are less inclined to hire. Therefore our results confirmed the international one referring to graduates ability to recognise them at the time of graduation being important for later career success [32,59].

The gap between (future) workers' skills—focusing here on employability skills—and the ones needed to fulfil job requirements in companies having negative impact on a candidate's likelihood of employment and a company's request of high performance to meet global competitive standards. Involvement of companies to improve employability is important because "employability skills are defined as skills required not only to gain employment but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions" [60]. Moreover, this involvement is likely to have the following effects:

- reduction in turnover among employees in the early months of work;
- reduction in the likelihood of employees becoming disillusioned with workplaces and thereby becoming at risk of long-term unemployment;
- assistance to employers to gain maximum commitment and productivity from young workers;
- improvement in employees' ability to adapt and settle into subsequent jobs;
- building a better foundation for lifelong learning through work.

In order to make the transition from education to employment or from unemployment to work, and to ensure that employees are equipped with a relevant skills' set that can help increase both their employability and companies' competitiveness, the results of this study create a fair and equitable culture of partnership between business, education and employees. An employer may see if the skills of a potential recruit meet the demands of a vacant job position by using this innovative, sustainable and free online tool.

Most of the studies researched the employability from the graduates' and undergraduates' self-perception; our empirical contribution offering the employers perceptions. Our research results confirm the international ones, that the skills are learnt at the work place [59], graduates' competence goes in line with the demand of the employers [2], for the employer's point of view the key set of competencies include the ability and willingness to learn [28], and hard and soft skills being are rated equally important by employers [28].

The overall perception of the employers from the present study confirm that all of the stakeholders may benefit from these results for a continuous assessment of graduates and undergraduates skills to build strategies for attracting and retaining graduates [58] for a well-qualified labour force.

For a person looking for a job, it is important to have the possibility to self-evaluate competencies, because those that have those competencies (transversal and/or specific) may enjoy their position in a company more than those who did not acquire these competencies [16]. Our proposed and pilot tested tool provides this possibility.

The present research results indicate and confirmed the international one, that the success in developing employability needs to be contextualized within a conceptualization of employability as a multifaceted construct [61].

Our results also demonstrate that regarding the Eurostat descriptors for quality of employment and skill-related statistics are not the risk factors that hinders perceived employability for employers and in firm the international results [62].

Starting from the results from quantitative analysis, we took a contribution towards understanding the congruencies and the discrepancies between perceptions in different European countries concerning the new, online, experimental, and innovative and tool for continuous assessment of skills to support employability.

Another important aspect resulting from the both quantitative and qualitative analyses is related to the structure of the sample. Even if it is a relatively small sample, the heterogeneity of the sample (three European countries, five sectors, public and private employers, SMEs and companies with more than 250 employees, and different function of the respondents within the organization) offers a statistically significant perception that assures the inference in the general population.

Even if the Student *t*-test indicated that the employability indicators show statistically significant differences between the average, when we tested these differences, we found only that three of seven indicators had significant differences only for percentage of persons employed in all enterprises who participate in CVT courses by type of skills and NACE Rev. 2 activity, and percentage of enterprises providing CVT courses general IT skills for industry and the retail sector.

Key competencies have also been defined by the EU as the extent to which each individual has developed the competencies that all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment [52]. These generic skills are essential for finding, retaining or developing the individual position in society [52].

With the results of this research we confirmed that for a sustainable organizational development is need to promote a sustainable employment [62] but also a sustainable, innovative and easy to use tool for employability measurement because in the most of the organizations the employees must match the corporate culture [27].

Our results have important practical implications giving the directions to create real and practical ways to enhance new graduates' employability skills by continuous assessment of competences according to the demand of real world labour market [63].

The answers from qualitative research show a relative homogeneity of the employers' perceptions and online tool utilization in the pilot testing phase but confirmed that the employers gave valuable suggestions and shared their experiences [29]. Employers from Austria and Sweden tested only the transversal competences but Romanian employers tested all types of the competencies. An explanation for this aspect is the fact that only the Romanian sample of employers has companies with more than 250 employees.

There are also very good results for our pilot testing for innovative tool because all the employers indicated the using and recommendation in the future of the experimental, sustainable innovative tool, the overall perception being described like "new and useful", "practical", "very comprehensive", "it tackles the most relevant issues", "efficient tool for assessment of competencies", "it's a platform that could be used in different areas and with different target groups such as unemployed, migrants, staff, graduate/ undergraduates, etc."

By comparison with other assessment tool for competencies, the employers' perception indicated that the tested tool is "more detailed", "is efficiently and speedy", "it gave supplementary information for the evaluation process".

Regarding the suggestions made by the employers during the face-to-face interviews, we retain: "to develop the tool for more sectors", "more job profile to be included in the same sector". These results confirm the importance of the employer's expectations linked to the employability [29] but also that, in industry (for example) there are skills that required additional training (for graduates), i.e., management, IT and leadership [38]. These suggestions match our future research to the target group for undergraduates and graduates from our university and include more job profiles and working situations for high education degree.

An interesting aspect regarding the proposed future development from the employers was mention by the Austrian and Swedish employers to improve the innovative tool "with specific parts of it for migrants". These aspects highlight the current problem of employability assessment not only for graduate's employability, but for other many important aspects directly and indirectly linked by globalization and migrants. Referring only to the three countries from our research and take into consideration the detailed information from Appendix A, Austria and Sweden have a specific problem

with migrants and Romania with Roma population, both of entities having the same problem of uneducated people, the employment being the main form of social integration [64].

Therefore we consider that our results fill a gap in the existing international researches and show that near to the over studied problem of graduate employability a much more vulnerable groups need attention and, most importantly, need a continuous employability assessment tool.

## 6. Conclusions

The continuous assessment process using the proposed innovative tool, gives opportunities to advance, to manage more effectively the evolution of the course and propose adjustments adapted to the individual situations of the people from five different sectors.

The key benefit of using this innovative and experimental tool is being able to identify the subset of key competencies, both transversal and specific within the continuous improvement process that is affected by changes from labour market. This information helps employers better analyse the impact of changes on the employability process.

In our opinion, the proposed innovative tool from this research added value comparing with other employability tool describes in the international literature thank of fact that not only asses the employability and competencies but it offers (in real time) recommendations based on the results of the evaluation of the individual beneficiary's learning using the new vertical match approach [65], respectively the relationship between the level of training and the demands of the job. Therefore, we consider that our results are in line with the newest and demonstrate that the horizontal match approach no longer responds to the current and global problems of the labour market, based only on the analysis of the correlation between the field of study of the graduate and the demands of the job.

Therefore, we believe that our results are in line with the newest and demonstrate that the horizontal matching approach no longer responds to the current and global labour market problems, based only on the analysis of the correlation between the graduate study field and the job requirements.

Through the development of this innovative approach and the evaluation tool, VET and in a company trainers will be able to assess for a given competence the expected performance in relation with the importance attributed by companies and so reinforce their action among target groups in terms of accessibility to the labour market.

We consider that the results of this research are important for the following target stakeholders/real situations on the labour market:

- VET and in-company trainers, teachers, mentors and job advisers, VET providers, public and private companies, employment advisers, companies of social economy, self-assessment of any employee;
- Underqualified adults and youngsters (NEET) often not motivated for attending training courses and facing difficulties to integrate on the labour market (i.e., unemployed and migrants; people at risk of social and labour exclusion, low skilled youngsters).

The development of a qualified and competitive labour force at all levels is the issue of paramount importance for the social and economic development [1].

The research results must be considered taking into account the limitations induced by the relatively small scale (regarding the size and the coverage of the sample and the tested variables) of the research design and implementation.

For future research, the authors intend to test the innovative tool for graduates and undergraduates in a longitudinal study and also to extend the sample for the other sectors and more European and non-European Union countries. We sustain that approach due to the present research and the research results of Pang [28], also from perspective of employers in non-European countries. This author underlines the importance of collaboration between universities and industry to work together to develop workplace-oriented programs [28], and a P-PAC (partnership in pedagogy, accreditation and collaboration) approach [31].

These research results fill a gap in the existing literature, offering a new and argued empirical point of view regarding the continuous assessment of both transversal and specific competences from the employer's point of view in countries of the European Union, but from three different countries regarding social, economic and political aspects. Employability is and still remains an important subject in the European and international context.

We consider that our research added value to the existing theoretical conceptualization by explaining the determinants of employability from the employers perspectives [30], being the first qualitative and quantitative transnational research of the perception of the heterogeneous sample of employers regarding an experimental online, complex, free and innovative tool for the assessment of both transversal and specific competencies to support employability.

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## Appendix A

**Table A1.** A brief summary of accompaniment measures or programs in Austria, Romania and Sweden.

Characteristics	Austria	Romania	Sweden
<i>Funding(s) stakeholders</i>	Public	Public	Public
<i>Average duration</i>	25 weeks	11 weeks	12 weeks
<i>Target group</i>	Unemployed, low/no education, few/none working experience, young people	Adults' unskilled, low qualifications, graduates of compulsory education, Roma population.	Adult migrants; Unemployed;
<i>Professional profile of tutors or advisers</i>	Counsellor in Social and Family Education and job insertion; Trainer in vocational training. Learning-based approach; Competence-centred learning process; Practice in a professional setting; "Active mediation"	University Teachers; Labour inspectors in safety and health at work. Lectures; Case Studies; Practical work; Practical training; counselling and social and professional mediation.	Counsellors; Supervisor that provides support and evaluation.
<i>Methods used</i>	Measures the level of knowledge, competences.	Theoretical and practical tests; Competence test.	Mapping of competences, job coaching, tests, assessments, work placement, internship;
<i>Type of evaluation</i>	Allows identifying social barriers; A personalized and individualized support; Knowledge of the partnership network; Mobilization of a broad partnership for a global accompaniment.	Personal education plan are adapted to the market needs; Counselling in order to fill a job; Qualification certificates issued by the NAQ; The national platform for the education of disadvantaged groups.	Competence assessment at a workplace.
<i>Strong points</i>	A constrained system that does not necessarily match with the needs of young person who considers himself in search of a job.	Programs are only for highly educated graduates, increasing unemployment rate Roma community.	Personal education plan for migrants needs; Provides a rich data source, possibility to get certifications; work place assessment, a greater awareness of their knowledge and skills.
<i>Weak points</i>	Necessity of a new, online, experimental and innovative tool including a pilot testing at employers from different sectors and partner countries		For high educated graduates/unemployed, payable assessment of some jobs, assessment on practical knowledge.
<i>Improvement possibilities</i>			



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