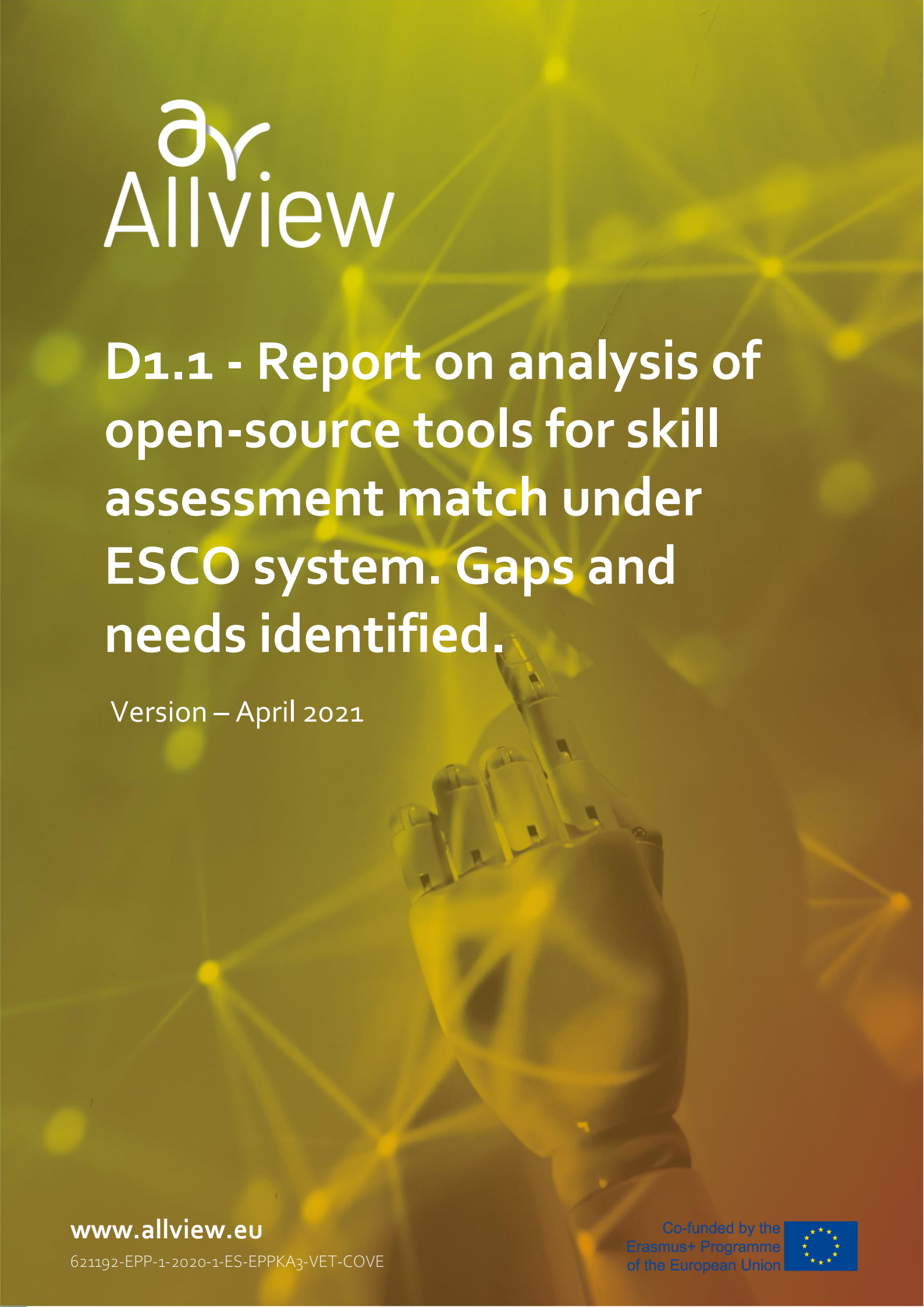
Allview

D1.1 - Report on analysis of open-source tools for skill assessment match under ESCO system. Gaps and needs identified.

Version – April 2021



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Index

Index of Figures

Index of Tables

The ALLVIEW project is a new transnational cooperation platform that connects Centres of Vocational Excellence (CoVEs) within the wood and furniture sector. ALLVIEW has operational objectives on a regional, national and European level which aim at an innovative approach to modernise vocational education and training.

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1

Introduction

1. Introduction

This document summarizes the results obtained from task T1.1. This task was scheduled for the first six months of the project. During that period of time, the partners involved in WP1 have performed the analysis of the state of art in open-source software tools for skill assessment. The main objective was to find out the gaps and needs to be covered in the ALLVIEW platform.

The existing tools studied cover some of the requirements that the ALLVIEW platform follows, but none of those platforms covers all features. One important point of the ALLVIEW platform is also to follow a reference in Europe about skills, occupations and professional profiles, ESCO (European Skills, Competences, Qualifications and Occupations) classification. This deliverable also describes ESCO classification and the importance of follow a standard in this type of software tools. Next, the state of art about software tools for skill assessment is detailed.

The state of art performed describes 12 software tools based on 16 features to stablish a comparison and obtain conclusions based on ALLVIEW platform requirements. Once gaps and needs have been identified from said comparison, additional inputs have been gathered through different types of surveys to stakeholders and final users. Therefore, the results of this study are based not only on a deep study of the state of art about similar tools, but also on the conclusions from the stakeholders and final user opinions.

Sustainability and exploitation plan for the developed software platform in WP1 is included to ensure the continuation of the tool not only during the project, but also after the project end.

After gaps and needs are identified from the previous study, we consider this information in next section, in which the methodology for analysing the results are explained. One the methodology followed is clear, the analysis of responses from stakeholders and final users is included. Finally, to sum up this deliverable, some conclusions are established

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2

ESCO Classification

2. ESCO Classification

Following a reference standard to gather information is essential to have a generic platform that can be integrated with others using the same communication format. This is the basis to have an efficient communication between employees, companies and education institutions in general. Some interesting examples are matching job seekers to jobs based on their skills, suggesting trainings to people who want to improve their skills and recommending people to companies with the required skills. The main idea is to have a platform using a standard nomenclature for skills, competences, qualifications and occupations.

ESCO[1] (European Skills, Competences, Qualifications and Occupations) is a multilingual classification of European Skills, Competences, Qualifications and Occupations supported by European Commission, in which ESCO describes, identify and classify skills, competences, qualifications and occupations relevant for education and training.

ESCO provides tools and resources which allow online platforms to use ESCO to offer services. Dataset of occupations and skills can be consulted online and downloaded free of charge. The ESCO database is compose of two pillars, skills and competences, occupations and qualifications. It is available on 27 languages (24 EU languages, plus Icelandic, Norwegian and Arabic) and it is linked to relevant international classifications and frameworks like International Standard Classification of Occupations, International Standard Classification of Education: Fields of Education and Training and European Qualifications Framework.

Figure 1. Occupations by ESCO classification.

1 https://ec.europa.eu/esco/portal/home?resetLanguage=true&newLanguage=en

As we can see on Figure 1 and Figure 2, ESCO provides 2.942 occupations[2] and 13.485 skills. ALLVIEW platform will be developed following ESCO classification, using ESCO API in order to interact with ESCO classification. It will be designed to cover all sectors, but for this project it will be personalized for wood sector. A selection of mentioned occupations has been made on wood sector. Annex I shows ESCO occupations second level and their relationship with the wood and furniture sector. These occupations are classified in several levels, reaching up to five levels. In this work we will stay at the second level to simplify.

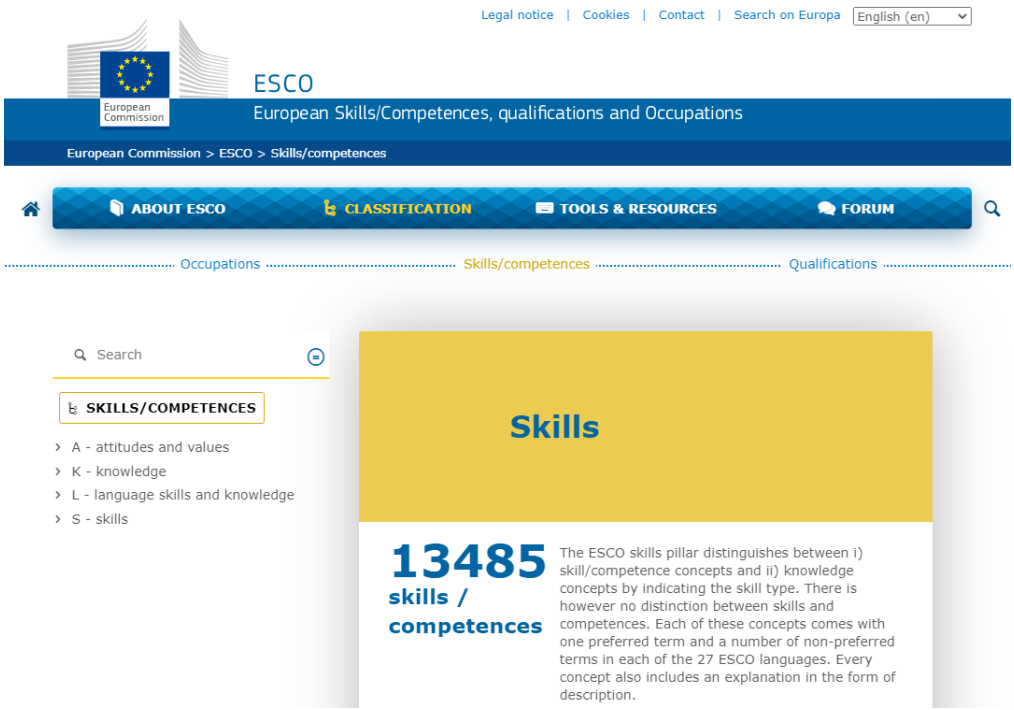

Figure 2. Skills/competences by ESCO classification.

2 *https://ec.europa.eu/esco/portal/occupation*

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3

State of art about Software Tools for skill assessment

3. State of art about Software tools for skill assessment

The open-source tools analysed include commercial platforms and other platforms from European projects. In this selection, several minimum criteria have been followed. Thus, the platform should include at least the following aspects:

- Job or training offers.
- Recommendations to users using or without using ML.
- Platforms with training content from training providers. Platforms focused only on training offers but without training providers to support it have been discarded. Some excluded tools are IN4WOOD[3], SkillsMatch European project[4], Skillful European project[5] and Artenprise European project[6].

Ideally, knowing the software design and technologies used by the analysed platforms would help to understand better their core, but in most of them this information is not available. Therefore, functional aspects will be mainly analysed making a comparison with the minimum criteria to reach a useful report.
Finally, once minimum criteria are being established in a previous analysis, the selected tools under study are described as follow.

Coursera platform

Coursera[7] platform is a website in which people or learners can look for courses in order to improve their skills. The users are people who want to improve their skills by themselves, or companies which want to teach additional skills to their employees. Coursera seems to use Machine Learning (ML) since they offer to the user customized recommendations once the user is registered. Users can include their preferences and their learning goals (see Figure 3). The platform also recommends the most popular certificates, trending courses, recently launched guided projects, top rated courses and the most popular courses on user scope of interest.

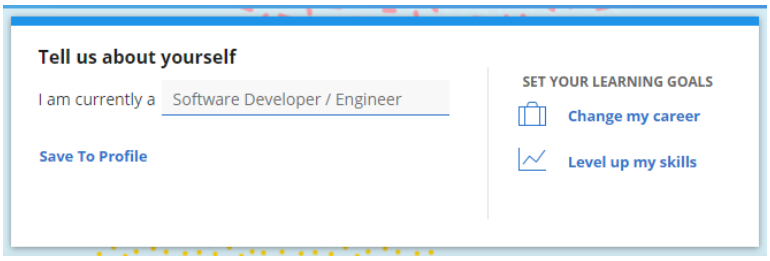

Figure 3. Coursera platform – Establishing learning goals.

3 https://in4wood.eu/

4 https://skillsmatch.eu/

5 https://skillfulproject.eu/

6 https://www.artenprise.eu/

7 https://www.coursera.org/

This platform is not focused only on one sector, but also many sectors are covered. Coursera also includes learning paths (see Figure 4), but these paths seem not to be related with the user preferences. In this sense, the software platform ALLVIEW will include learning paths using ML in order to make customized recommendations. The focus of Coursera tool is to offer learning, but employment options are not included.

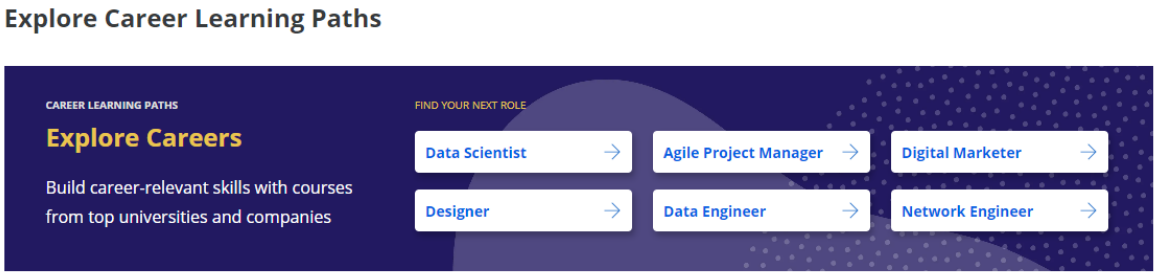

Figure 4. Coursera platform – Learning paths.

Linkedin platform

LinkedIn[8] is a very well-known platform by people and companies. In 2019, EU Commission ran a pilot project with LinkedIn. The project mapped 1,483 LinkedIn skills concepts to 1,522 ESCO concepts, allowing both parties to draw conclusions on the similarities and differences between the two skills lists. Currently, this platform includes three parts well-defined: 1) employment, 2) social network and 3) LinkedIn Learning.

The first option can be used by companies and people. Companies offer new jobs and people look for new jobs based on their interests. In this part, the platform makes recommendations to the users based on their previous searches or their last job. As Figure 5 shows, users can see their applied job positions on My Jobs menu, establish job alerts, see information about salary, check their skill assessments and even prepare an interview.

8 https://www.LinkedIn.com

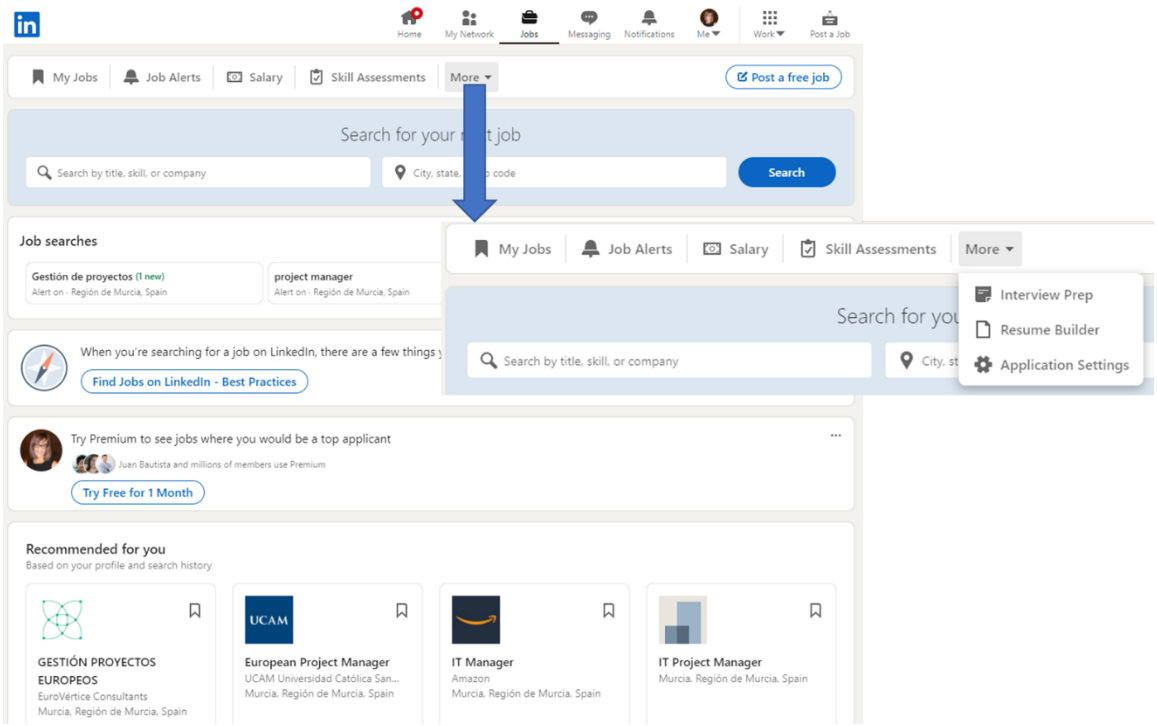

Figure 5. LinkedIn platform – Jobs.

Additionally, people use this tool as a social network sharing with their contacts, for example, some news or interesting papers. And LinkedIn Learning option offers videos to users about new challenges or skills (see Figure 6), but these videos are not learning courses. Training providers are not included in this platform.

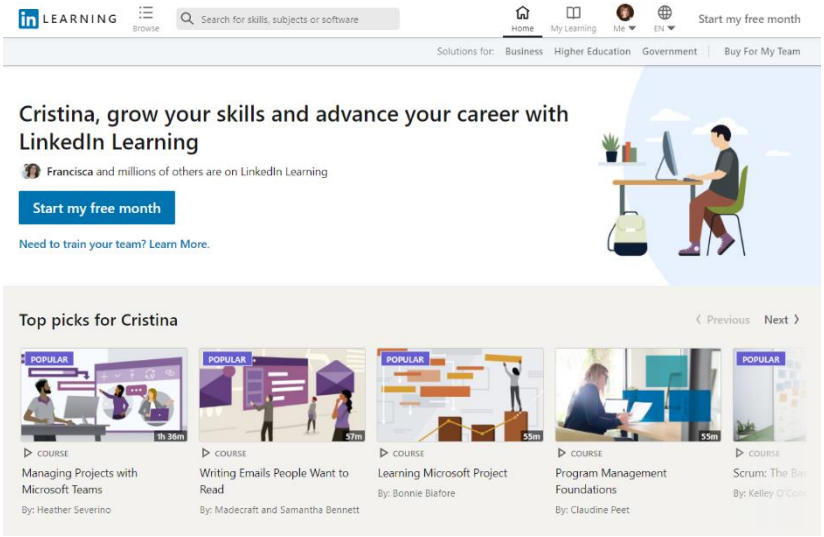

Figure 6. LinkedIn Learning platform.

Infojobs platform

Infojobs[9] is a tool where companies mainly offer new jobs and people search new jobs based on their interests. The platform allows the user to register for a job and see the progress of the candidature. In addition, the platform also makes recommendations to the users based on their previous searches or their last job (see Figure 7).

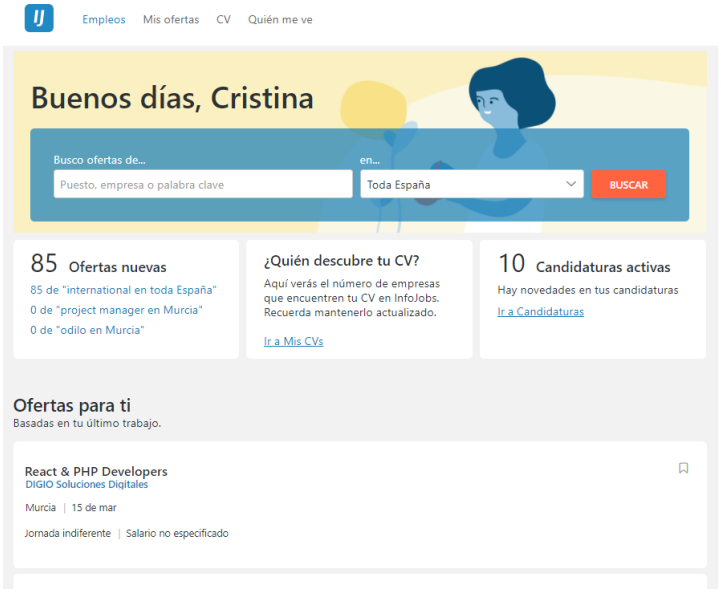

Figure 7. Infojobs platform – Main panel.

About training courses options, each registered user can access to the panel showed on Figure 8.The platform gives users several options classified by sectors where users could study and give details about training courses. In this page, the platform shows to users what they can study if they want to work in a specific sector, but the system does not make a recommendation using ML techniques.

Figure 8. Infojobs platform – Training option.

9 https://www.infojobs.net/

Indeed platform

Indeed[10] website is a platform focused on employment mainly, training and learning options are not included. There are two type of users, companies and people. As in other platforms, companies offer new job positions and people search new job positions. Users can use some filters to adjust their preferences based on the location, date posted, job type, company and language (see Figure 9). The engine seems not to use any reference in Europe about skills, occupations and professional profiles like ESCO classification.

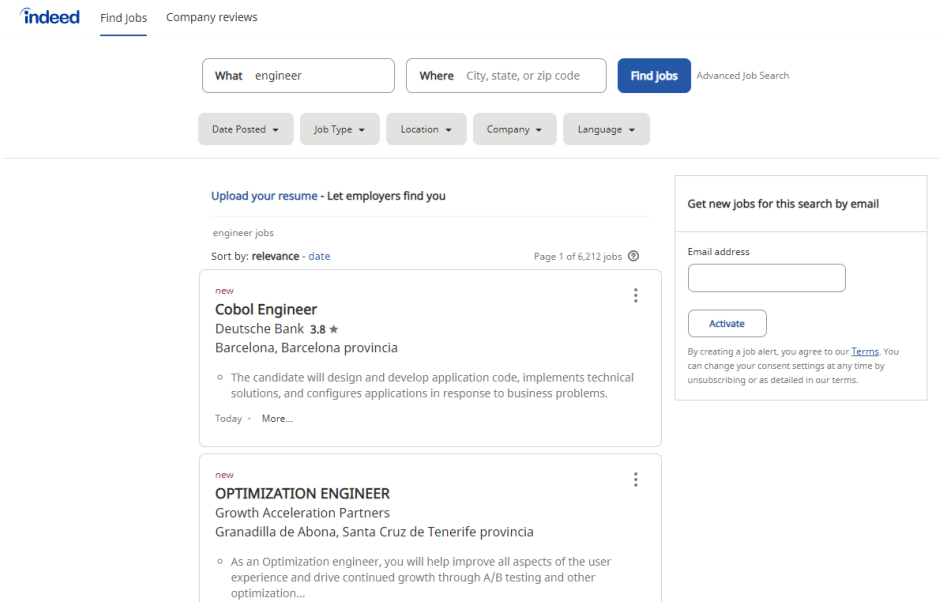

Figure 9. Indeed platform – Find jobs.

An interested thing included in this tool is the companies ranking (see Figure 10). The users can add an assessment about the company in which they work. This is a very useful option since it can help to other users who are going to join those companies.

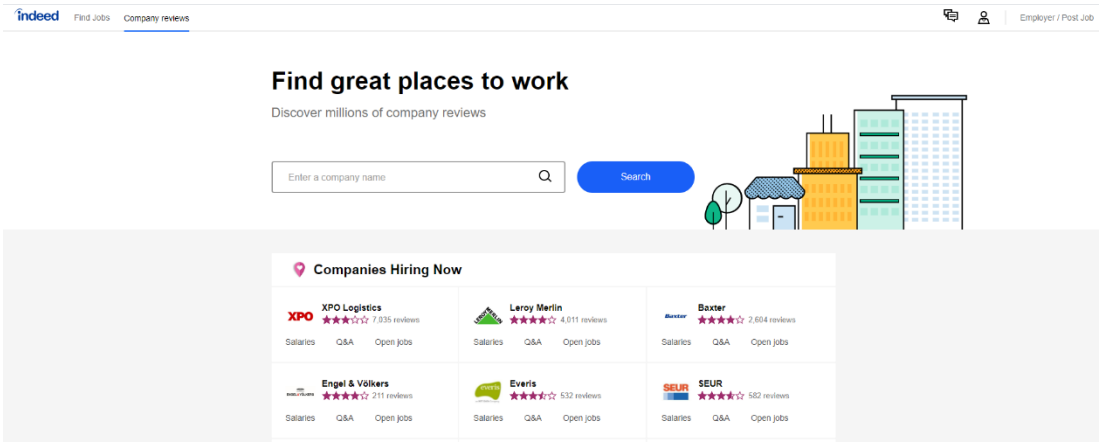

Figure 10. Indeed platform – Company reviews.

10 https://www.indeed.com/

Realise platform

Realise[11] platform is another website for learning and employment in different sectors (see Figure 11). They work with people and businesses across UK. The tool shows a little information about each course, but it seems there are not training providers connected directly with this platform. An additional option is that companies can create and share courses with their employers using this platform. It seems that Realise platform does not use ML techniques and its aim is far from ALLVIEW platform.

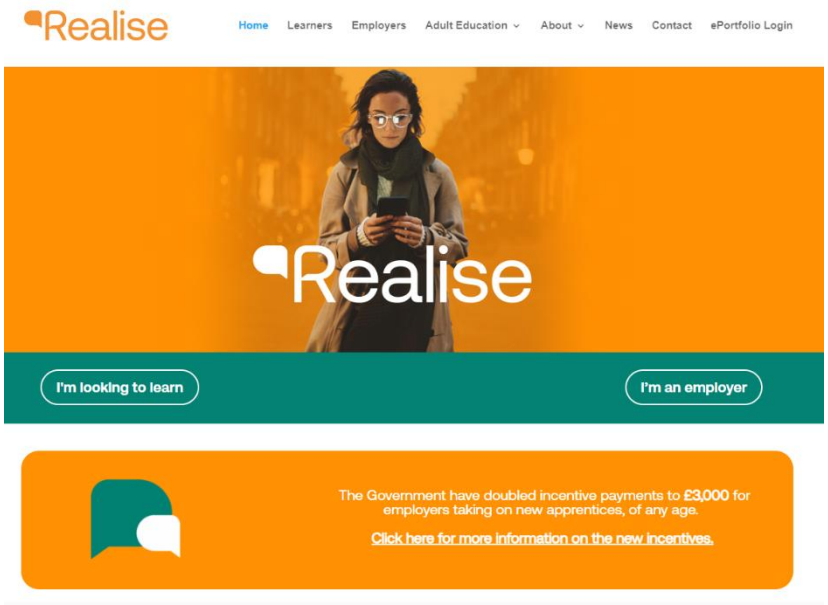

Figure 11. Realise platform.

Woodwize platform

Woodwize[12] platform is focused on a specific sector offering training from external providers and employment from companies. Figure 12 shows the main page of this platform. It is a platform serving to the three types of users: job and/or learning resource seekers; job providers (recruiter, company); and learning resource providers, but focused only on wood sector.

11 https://learning-employment.com/

12 https://www.woodwize.be/

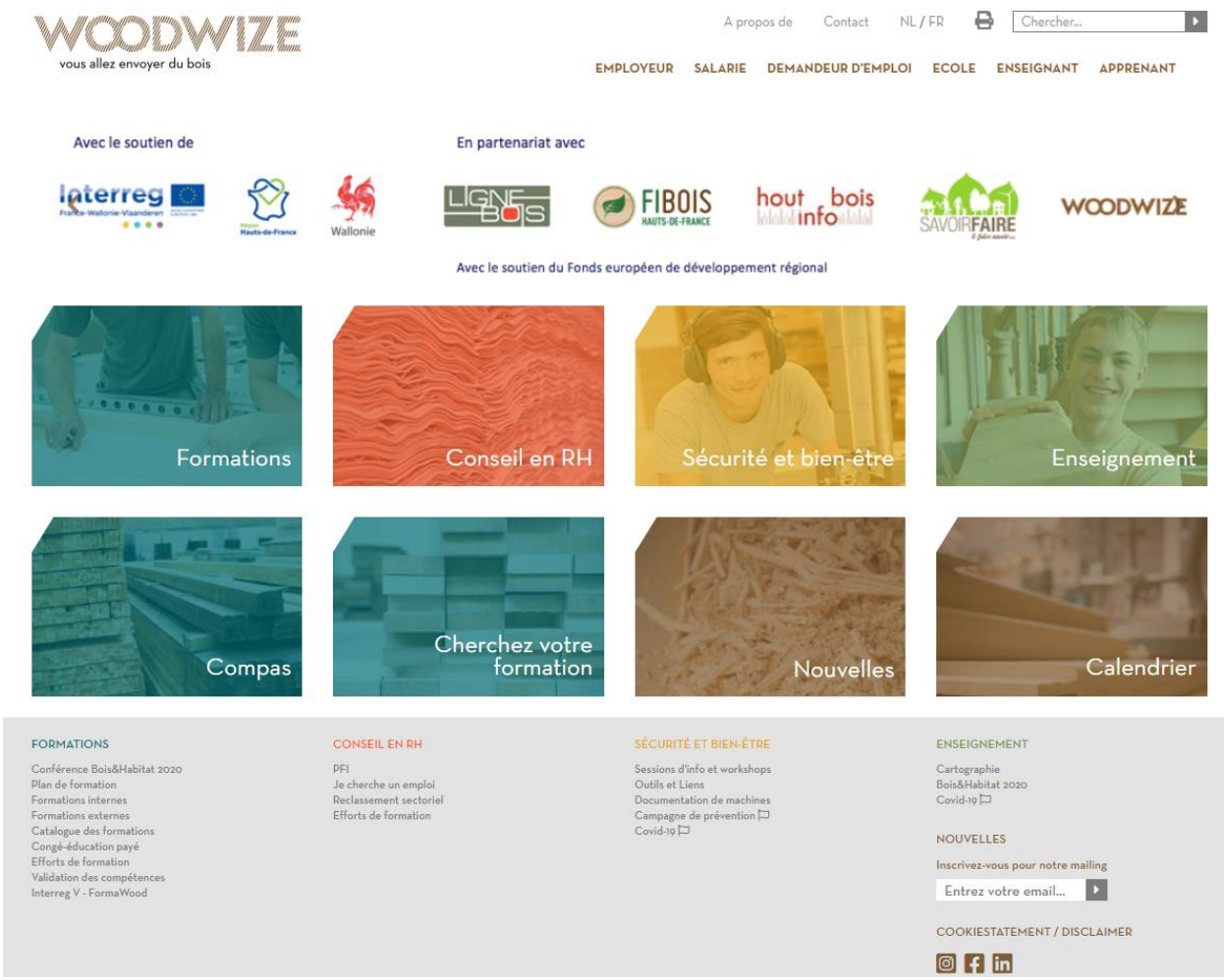

Figure 12. Woodwize platform.

Once users are registered, the platform recommends some trainings or competences they need based on their user profiles, but without using ML. The recommendations are not based on other user profiles. Raking by users are not included. Additionally, although Woodwize uses occupation descriptions included on ESCO, the platform is not directly linked to ESCO database. This platform is one of the best references for the software platform ALLVIEW, in which the considered gaps will be covered.

Skill Panorama platform

Skills Panorama[13] platform turns labour market data into accurate and timely intelligence to offer new insights into skill needs in the European Union, using ESCO classification. The concept of this tool is different to the ALLVIEW project aim but includes a very interesting point of view about the improvement of skill needs assessment and anticipation.

13 https://skillspanorama.cedefop.europa.eu/en

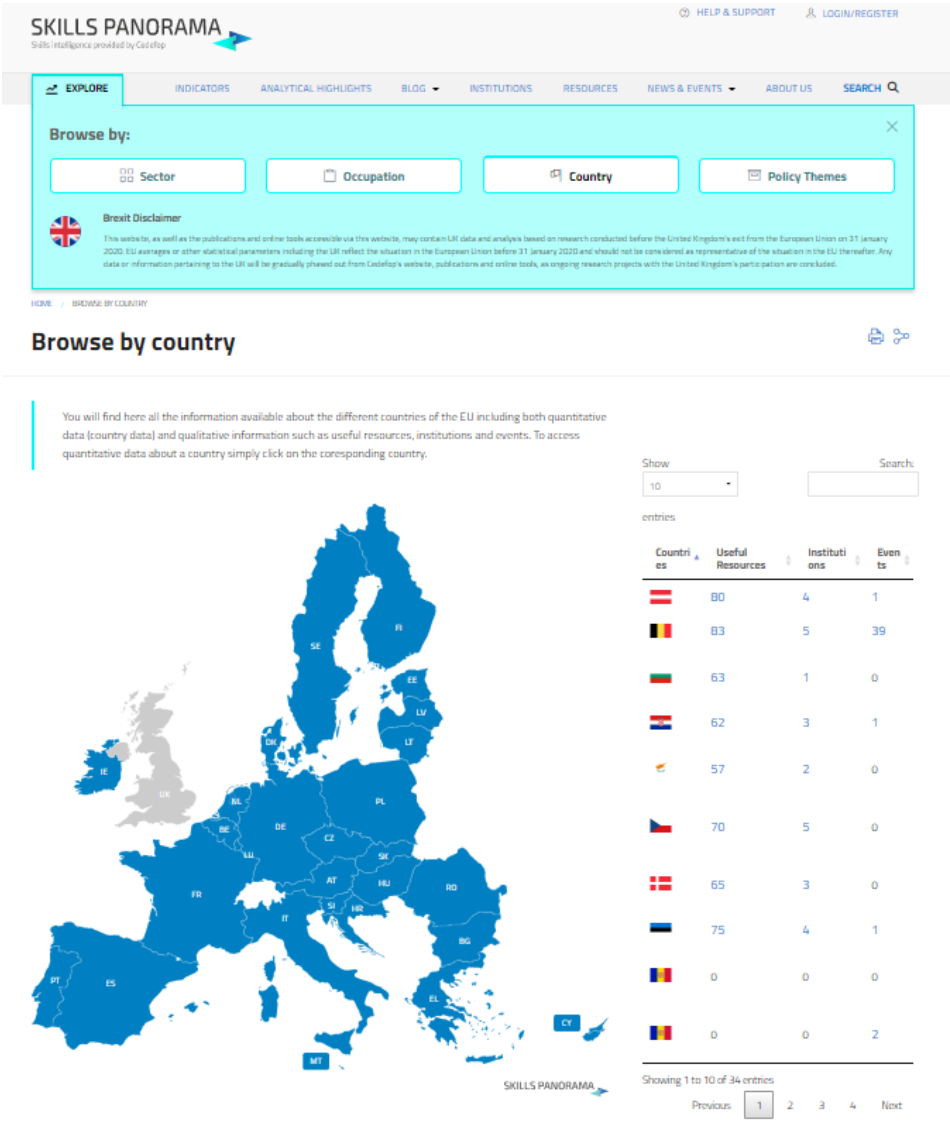

Figure 13. Skill Panorama platform.

The target users are policy-makers, policy analysts and policy experts (to support their decisions on education, training and employment topics), career guidance practitioners (to help citizens to choose, develop or change their education and career pathways) and researchers (a wealth of data and information on skills and labour markets in the EU). This is useful for education and training systems becoming more responsive to labour market needs. Skills Panorama is brought by the European Commission, Directorate-General for Employment, Social Affairs and Inclusion and powered by CEDEFOP, the European Centre for the Development of Vocational Training.

NADINE project

NADINE project[14] is a platform that allows migrants to find a job and training according to their skills and competencies, based on ESCO classification. NADINE delivers tailored information to migrants and provide guidance on social services, careers, and administrative procedures of their new host country. This is achieved through a career guidance system and an administrative companion (chatbot), but it does not use AI/ML. NADINE project website includes a tool[15] to promote migrants' inclusion. Figure 14 shows some steps that a user should follow to access.

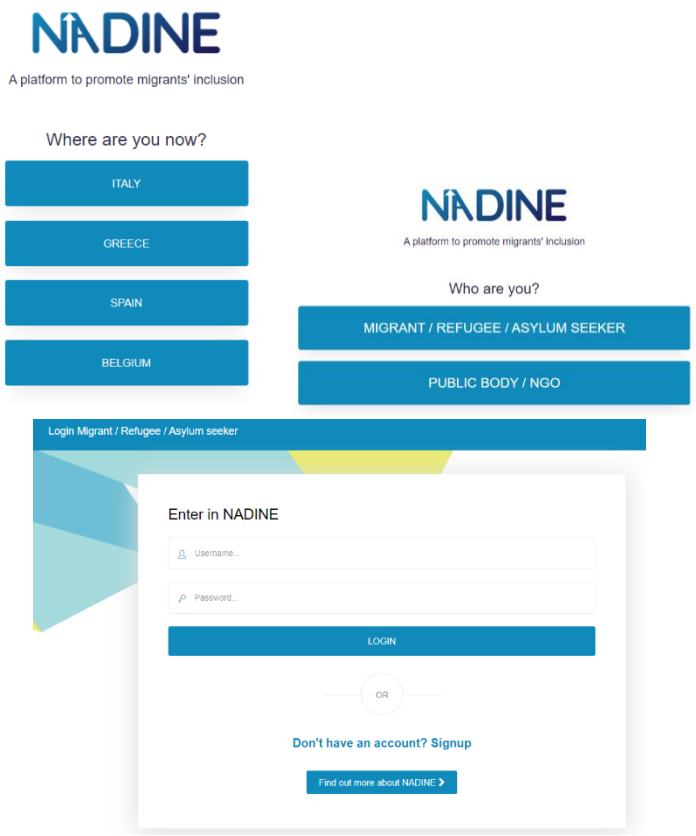

Figure 14. NADINE platform.

Skill Lab platform

Skill Lab[16] is a platform that empower people to turn their skills into careers. This tool is a skill profiling tool which helps individuals to match their skills with occupations and figure out the needed skills to pursue a specific career path. Figure 15 shows how the platform works.

14 *http://nadine-project.eu/*

15 *https://platform.nadine-project.eu/*

16 *https://skilllab.io/*

Figure 15. SkillLab platform – How it works.

The core of the tool uses Artificial Intelligence (AI) to capture the user's skills. It simulates an interview with the user, asks questions about skills he/she gained from the previous experience. As a result of the skill assessment (interview) and the AI engine, the application gives a list of the skills users already have and the skills they need to learn. Based on their individual skill profile, users can discover and explore careers and identify career goals (see Figure 16). The application uncovers possibilities by highlighting relevant and sustainable careers and personalized and tailored education.

The data model used in skill recommendations and occupation match is based on a list of occupations and the required skills for each occupation based on ESCO classification. This interesting feature is one of the aims in the software platform ALLVIEW too. However, Skill Lab does not offer jobs and trainings. It is only focused on individuals, not on companies and training providers.

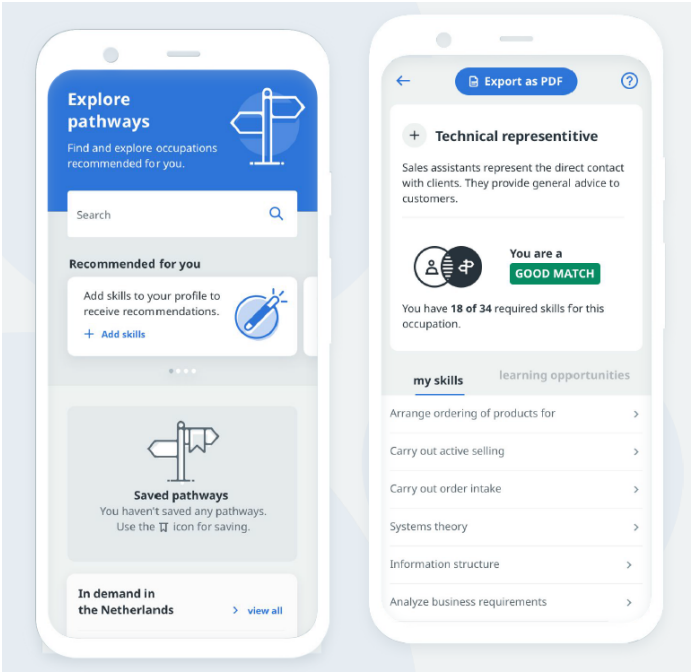

Figure 16. SkillLab platform – Career orientation.

OpenSKIMR project

OpenSKIMR[17] (Open Skill Match Maker) is a European project based on a tool to create a skill-matchmaking between talents and jobs, and the required learning to support people in creating their personal career paths. The project was based mainly on two features: to include ESCO classification and to develop a set of algorithms that match talents with fitting jobs and suggest learnings. This platform allows users to plan and simulate their individual learning and career routes towards their desired career destination, but it does not seem to include jobs offers and learning offers by training providers. Information about this project has been found on project Website (see Figure 17), but the platform OpenSKIMR seems not to be available.

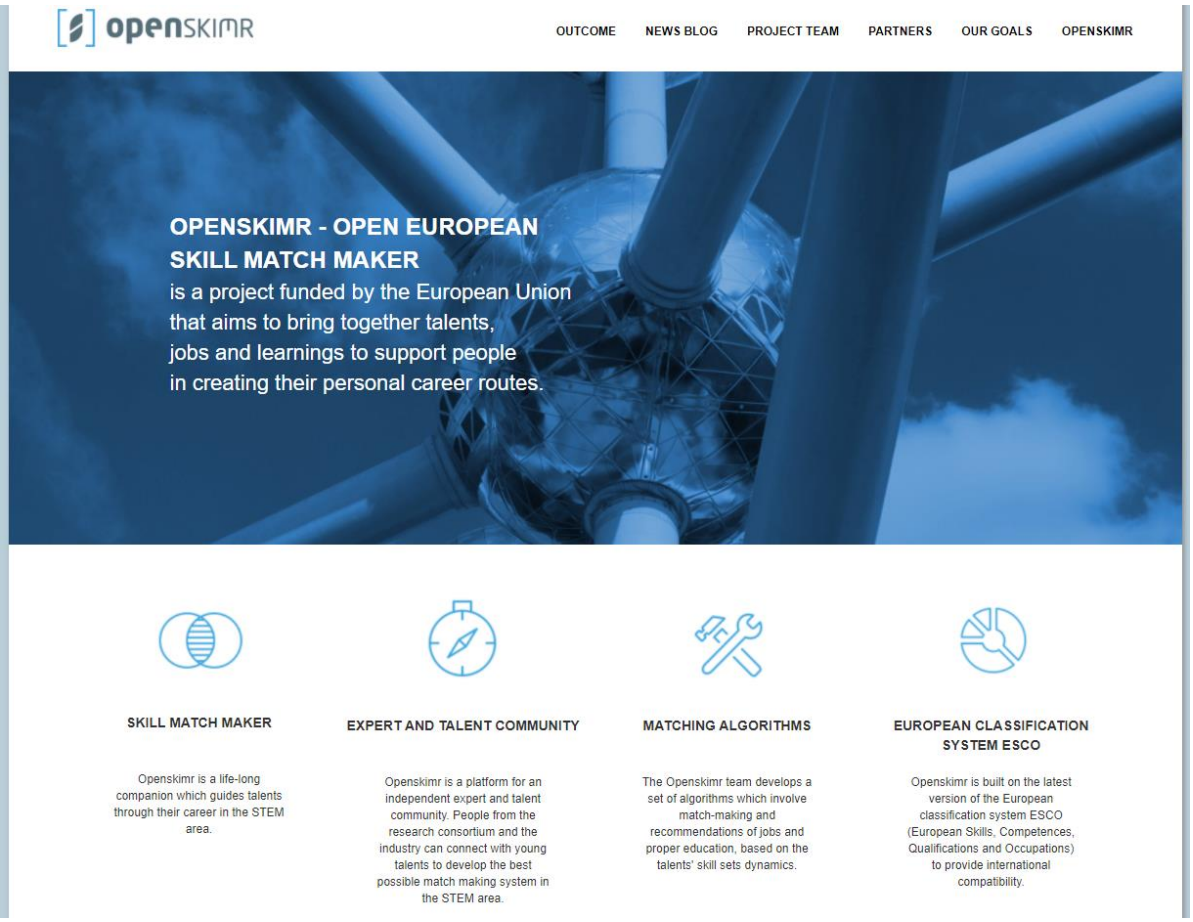

Figure 17. OpenSKIMR platform.

CareerOneStop platform

CareerOneStop[18] is a platform sponsored by the U.S. Department of Labor, Employment and Training Administration. It is a big searcher with options to explore careers, search jobs, find training and toolkits (see Figure 18). Their aim is to deliver integrated, easy-to-understand

17 *http://openskimr.eu/*

18 *https://www.careeronestop.org/*

workforce information that helps job seekers, students, workers, workforce intermediaries and employers develop their capacity. There are many options to help users to find out the appropriate job and training, and there are a lot of resources for that, but recommendation systems like ML seem not to be used in this platform.

In Find Training section, users can look for different types of training such as high school equivalency, adult basic education, short-term training, college, certifications, apprenticeships, internships or professional development. The platform also gives users information about paying for training and find the path.

In Job Search section, there are a lot of resources which people can use to plan a job search, information for networking, information to help people to prepare interviews and negotiate, and even job search tips.

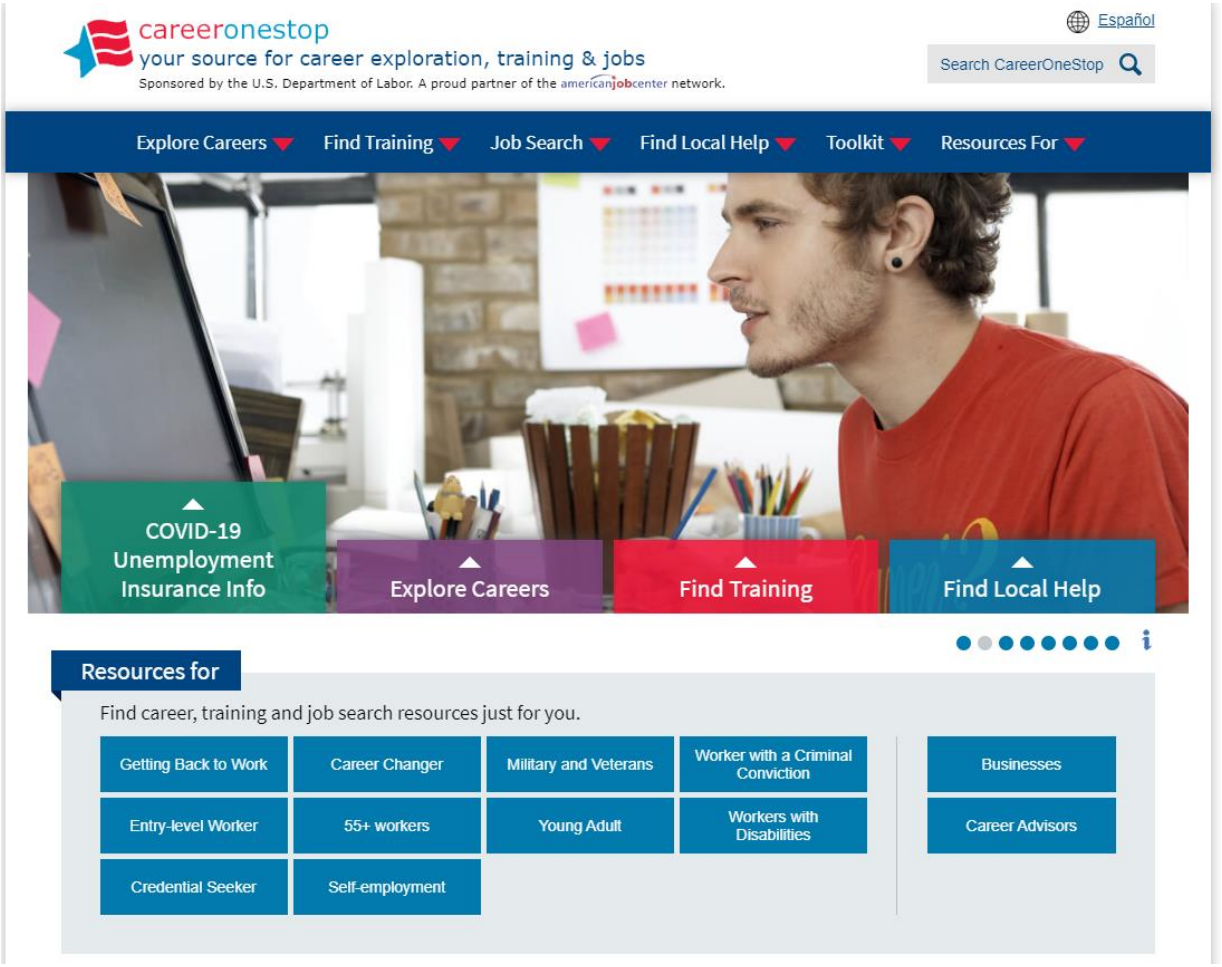

Figure 18. CareerOneStop platform.

Career Service platform

Career Service[19] website provides consultancy on employer branding and campus recruitment services to companies interested in targeting the students of Politecnico di Milano (Italy). This platform also offers MSc and BSc courses in Engineering, Architecture and Design and PhD programs. Their main objective is to link students to companies. Not all people can access to this platform, it is only focused on students and graduates.

As Figure 19 shows, the platform gathers candidate profiles and can be grouped by subjects, specializing master and PhD. This functionality allows companies to look for the appropriate candidate for their job position offers.

On the other hand, in Job & internship offers section (see Figure 20), people can search job position offers applying filters like employer, keywords, announcement and companies, or other advanced options to specify what you are looking for and where.

To sum up, companies can register on CareerService website in order to look for candidates on specific technical areas, but it seems not to use ML to make recommendations or ESCO classification for occupations and skills.

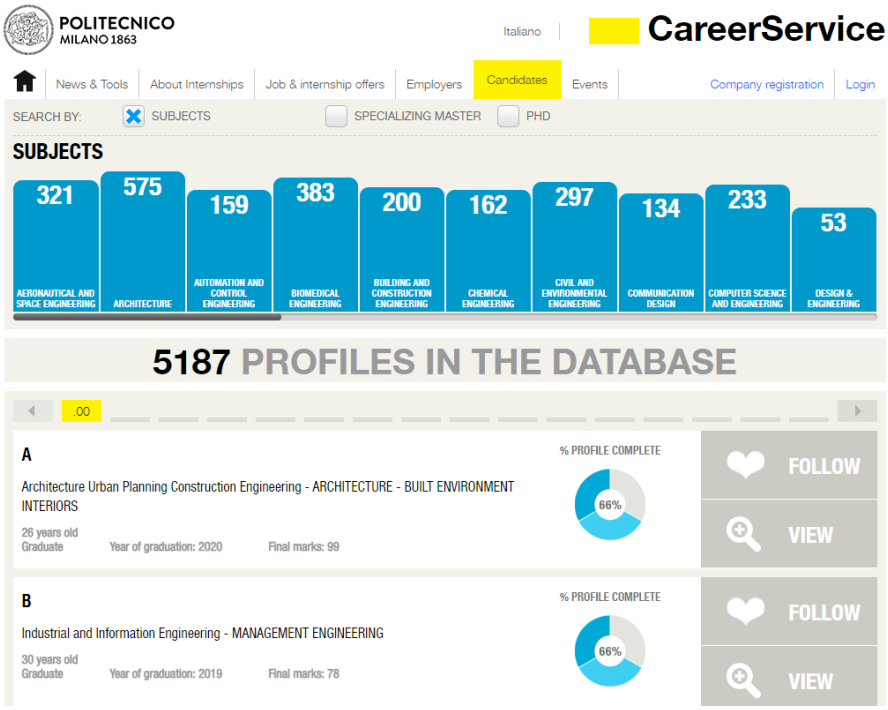

Figure 19. Career Service platform - Candidates.

19 *https://www.careerservice.polimi.it/*

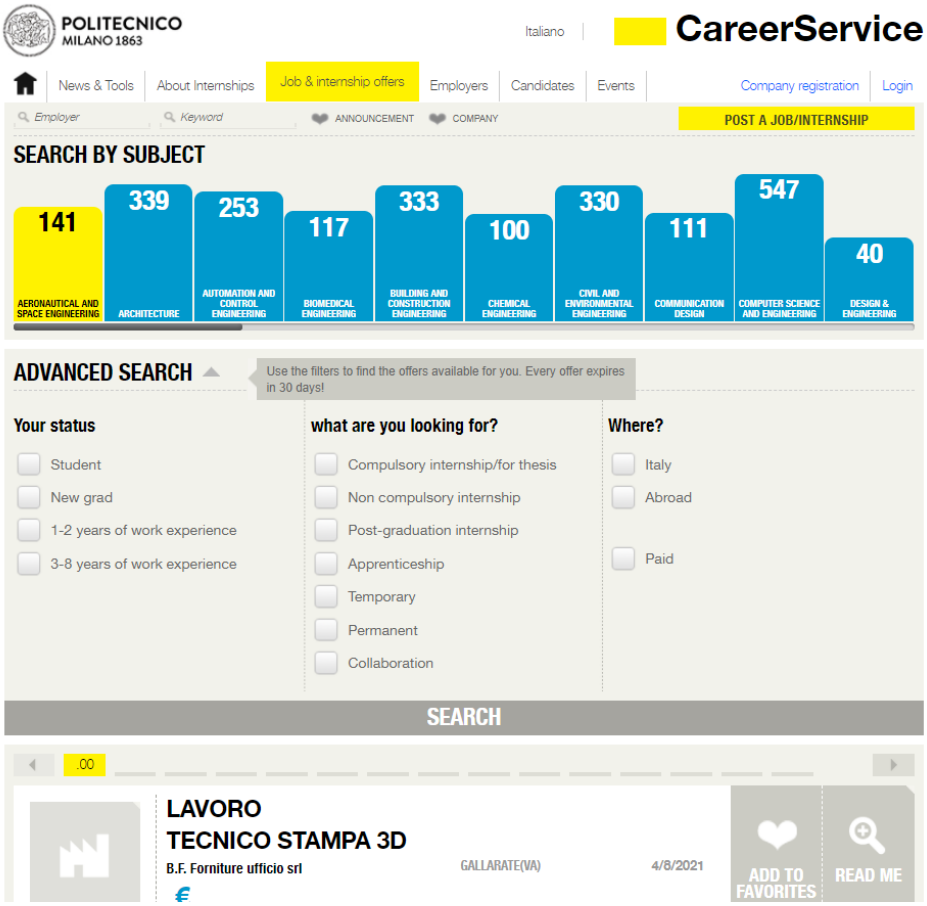

Figure 20. Career Service platform - Job & internship offers.

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4

Gaps and needs identified

4. Gaps and needs identified

This section shows a deep comparison between all selected tools using the same terms. 16 features have been previously stablished. These features are open source or private platform; mobile application availability; presence in social networks; multi-language availability; platform focused on people in general, companies and training providers; platform focused on a specific industrial sector; options for ranking by users available; employment and training offers; customized recommendations using machine learning (ML) or general recommendations; learning paths; and if the platform follows ESCO classification. The comparison has been presented in

Table 1, that collects the main features of each platform, marking the included and excluded features. As this summary shows, there is not any existing platform covering all requirements proposed for the ALLVIEW platform.

From the comparison is concluded that there is not a single platform that covers all the ALLVIEW needs, those are:

- An open-source software platform.
- A platform that includes both training and employment parts involving three types of users (people, training providers and companies).
- Artificial Intelligence (AI)/ Machine Learning (ML) techniques in the platform core in order to offer personalized recommendations to users.
- Options to establish ranking by users.
- Learning paths
- A platform based on a European standard like ESCO classification.

Table 1. Software tools for skill assessment comparison.

	coursera	LinkedIn	InfoJobs	indeed	Realise	WOODWIZE	SKILLS PANORAMA	NADINE	SkillLab	openSKIMR	careeronestop	CareerService
Open Source	×	×	×	×	×	×	✓	✓	×	✓	×	×
App available	✓	✓	✓	✓	×	×	×	×	✓	×	✓	×
Social Networks	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓
Several idioms	✓	✓	✓	×	×	✓	×	✓	✓	×	✓	✓
For people	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
For companies	✓	✓	✓	✓	✓	✓	✓	×	×	✓	✓	✓

For Training providers	✓	×	✓	×	×	✓	✓	×	×	×	×	×
Non-specific sector	✓	✓	✓	✓	✓	×	✓	×	✓	✓	✓	×
Ranking by users	✓	×	×	✓	×	×	×	×	×	×	×	×
Offers employment	×	✓	✓	✓	×	✓	×	×	×	×	✓	✓
Offers training	✓	✓	✓	×	✓	✓	✓	✓	×	×	✓	✓
ML	✓	✓	×	×	×	×	×	×	✓	×	×	×
Recommendations	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	×
Learning paths	✓	×	×	×	×	×	✓	×	✓	✓	✓	×
ESCO classification	×	✓	×	×	×	✓	✓	✓	✓	✓	×	×

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5

Sustainability and Exploitation plan

5. Sustainability and Exploitation plan

A sustainability and exploitation plan is need in order to ensure the continuation of the software developed tool not only during the project, but also after the project end. The WP7 titled Dissemination and exploitation will include some activities and actions in order to optimize the dissemination and exploitation of the project outcomes and results, but, in this section, a general vision of WP1's partners about WP1 results will be included.

Sustainability is the capacity of the project to continue its existence and functioning beyond its end. From a general point of view, a project can be considered as sustainable if its outcomes or parts of these continue after the end of the funded project duration. As examples, sustainability actions can be the maintenance and update of data and software and their persistent and self-sustainable maintenance. The capacity of the tool to be used in different economic sectors with minor adjustments will support its sustainability. During the design and programming stage, in future tasks of this work package, it is foreseen to incorporate software good practices including: correctness, efficiency, flexibility, integrity, interoperability, maintainability, portability, reliability, reusability, testability, and usability.

Exploitation is related to the use of the project's results during and after the implementation of the project. In this case, the necessary actions will bring visibility to the project in order to involve the target groups, end-users, stakeholders and transfer the results/products into their professionals' scope. It is foreseen to perform strong dissemination actions, tackling Regional Development Agencies in Europe, in order to enhance the impact of the project.

During the project lifetime and once the platform is ready, WP1 will work in synergy with other WPs since outputs of other WPs will be inputs for WP1 (see Figure 21). These synergies have been established between all WPs leaders considering the type of information analysed and created on each WP useful for the ALLVIEW platform developed. Mainly, WP2, WP4 and WP5 outputs will be considered as inputs for WP1. These inputs are essential for the developed tool in WP1 since will be useful to validate the platform and publish the first version of the tool.

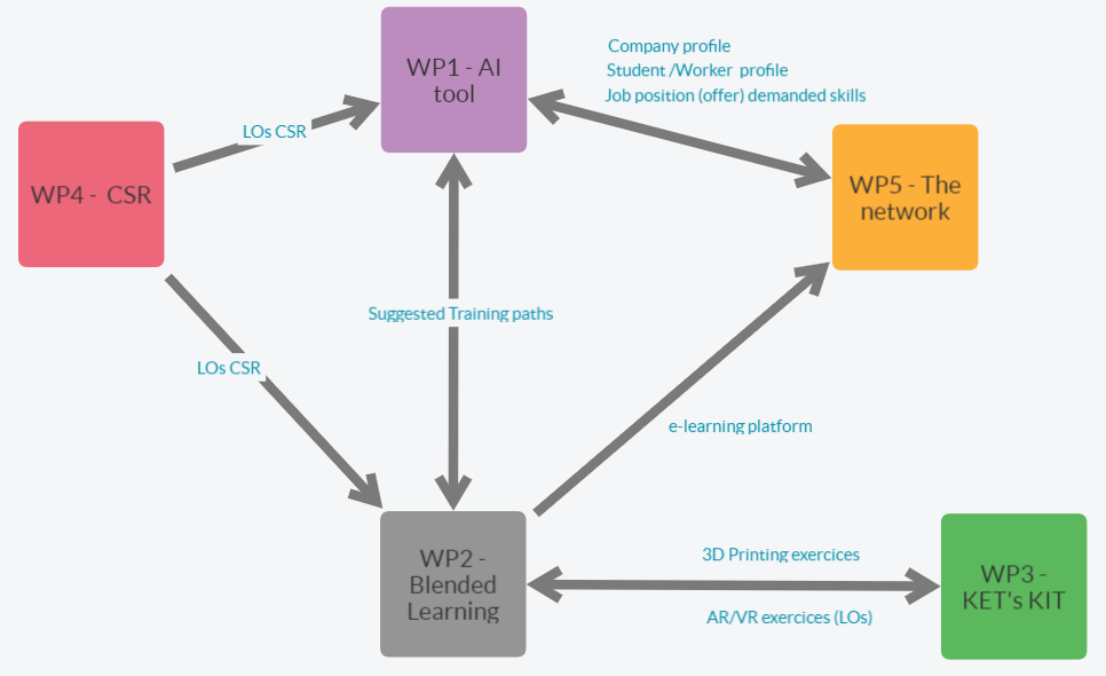

Figure 21. WPs synergies.

Once the ALLVIEW platform is implemented, ALLVIEW project partners will contribute to exploitation plan disseminating the ALLVIEW software platform to their professional network. The main steps on this task are:

1) to identify stakeholders, final users, target groups and beneficiaries on wood and furniture sector. For this task, the **representative partners per cluster** that will be defined on D1.2 will be key, being the **cluster**s the followings: HE providers, VET provider/educational activities/professional training, sector representative and business associations, and VET authorities'/employee services/representative.
2) to disseminate the WP1 results, it means, the website to access to ALLVIEW software platform.
3) to track the previous actions to solve issues happened.

The ALLVIEW open source platform will be developed considering that the different type of users are the main actors of the platform. It means that the platform will be alive while the mentioned actors use it. As example, and taking into account the three type of users defined for the ALLVIEW platform (users People, Company and Training Provider), users People will be able to use the platform while users Company offer their job position offers and users Training Provider offer their training courses. In general conditions, ALLVIEW platform will not require an administrator person to allow users to use the tool. The tool could be used and it will be prepared to operate without additional resources and it will be kept publicly accessible under the same URL. However, the functionalities of the platform and the options offered to users will not be longer updated once the project ends.

Allview

6

Design of methodology, tool for gathering data and plan for disseminating surveys

6. Design of methodology, tool for gathering data and plan for disseminating surveys

As it was mentioned at Introduction section, a set of surveys are prepared to complement the study of state of art performed. Three surveys are designed, one for each type of user: workers/job-demanders, training providers and companies.

Partners involved in WP1 have decided to follow the recommendations of the report "developing and running an establishment skills survey"[20], by the European Centre for the Development of Vocational Training (CEDEFOP)[21], where the methodology selected to do these surveys is described in detail. The report guides in the task of developing and implementing an establishment skills survey focused on employers. It has two main goals:

- To provide a general framework under which an establishment skills survey can be understood. The guide does not intend to be a 'scholarly' document, but it is important to consider that skills (and skill needs) reflect a series of decisions taken by employers on how they set their strategies in terms of products and processes.
- To provide practical guidance with examples for all the different steps involved in carrying out an ESS (Employer/establishment Skill Survey). Strictly speaking, the guide is not a user manual, but a discussion of the different decisions that must be made and the potential alternatives available, which may fit well in some situations and not in others.

To create the surveys a general process should be followed. The first step is to detect the problem. The second step is to generate data. Next, to analyse data and finally, provide solution. Figure 22 shows the specific steps to be followed to develop and implement an establishment skills survey.

Figure 22. Steps in the development and implementation of an establishment skills survey.

20 Mane, F & Corbella, T. (2017). Developing and running an establishment skills survey: Guide to anticipating and matching skills and jobs, Volume 5, The European Union Publication. ISBN 978-92-9157-665-4 doi: 10.2816/614489 TA-02-17-207-EN-N

21 https://www.cedefop.europa.eu/es

Additionally, following the CEDEFOP recommnedations, there are some key concepts (see Figure 23) which have been followed to design the surveys.

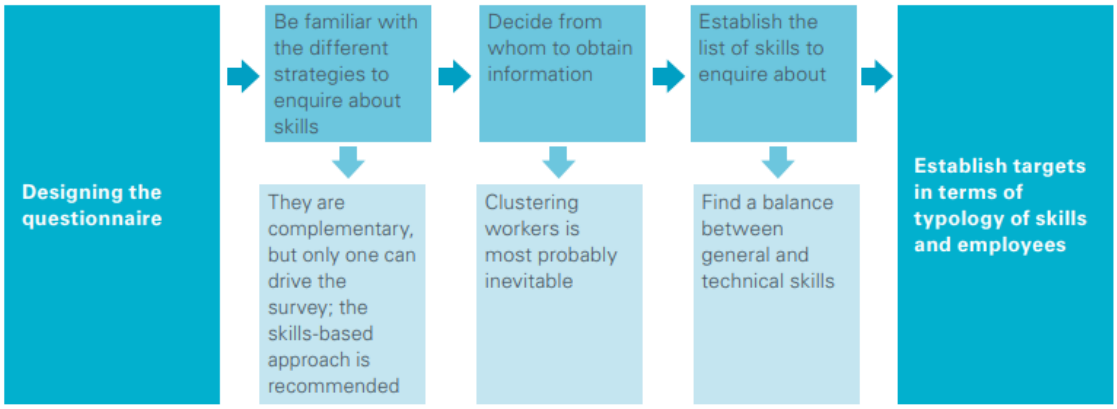

Figure 23. Key concepts in the design of questionnaires.

Once surveys have been defined, next step was to select a tool for setting surveys and gathering responses. As it was described in the memory of the Project, the opinions could be collected through workshops, questionnaires or face-to-face interviews.

During WP1 period, some free and online survey platforms available on the Internet have been analysed with the aim of deciding the best option for this task. In this analysis, 11 online tools were evaluated, focused on the following indicators[22]:

- Number of surveys: maximum number of surveys that can be launched simultaneously.
- Number of questions: maximum number of questions per survey.
- Number of responses gathered: maximum number of responses that can be gathered in each survey.
- Custom design options: level of customization in surveys: colour, format, type of questions, images, synchronization, etc.
- Data export: set of export options available.

The results of this evaluation are summarized in Table 2. As it can be seen, Google form is the most suitable for the goals of the type of questionnaires to be launched. Hence, Google form was selected as the free online survey platform for launching the questionnaires and gathering responses. Google Forms tool lets easily accomplish the tasks of developing surveys and collecting online survey responses. It is free without restrictions about the number of surveys to be created, number of questions per survey or number of responses to collect. Moreover, Google Forms tool offers the possibility to automatically export the results to .xls files or to Google Sheets for online access and sharing. Google Forms tool also permits to add collaborators and disseminate surveys with a simple URL link.

22 https://www.webfx.com/blog/internet/11-free-online-survey-tools-compared/

Table 2. Comparison of free and online survey platforms.

Tool name	Number surveys	Number questions	Number responses	Custom design	Data export
Google forms	Unlimited	Unlimited	Unlimited	Yes	Yes
Survey Monkey	Unlimited	10	100	No	No
Typeform	Unlimited	Unlimited	100/month	Yes	Yes
SurveyLegend	3 per account	Unlimited	Unlimited	Yes	No
Polldaddy	Unlimited	Unlimited	Unlimited	No	No
Survey Planet	Unlimited	Unlimited	Unlimited	No	No
SurveyNuts	Unlimited	10	Unlimited	No	No
Zoho Survey	Unlimited	15	150	No	No
Free Online Surveys	Unlimited	20	100	No	No
Survs	Unlimited	10	200	Yes	No
SurveyGizmo	Unlimited	Unlimited	0	No	No

Finally, a plan for disseminating surveys was defined and surveys were shared by all partners. The main objective at this stage was to select the most appropriate survey respondent because the prepared surveys were designed for specific profiles: workers/job-demanders, training providers and companies on wood and furniture sector. Therefore, partners shared survey with selected candidates, not were distributed by social networks for everybody because we had to control the profile of each survey respondent.

Allview

7

Design of surveys

7. Design of surveys

To design the 3 surveys (for workers/job-demanders, for training providers and for companies), we have applied the steps shown in Figure 24 to define the structure of mentioned surveys.

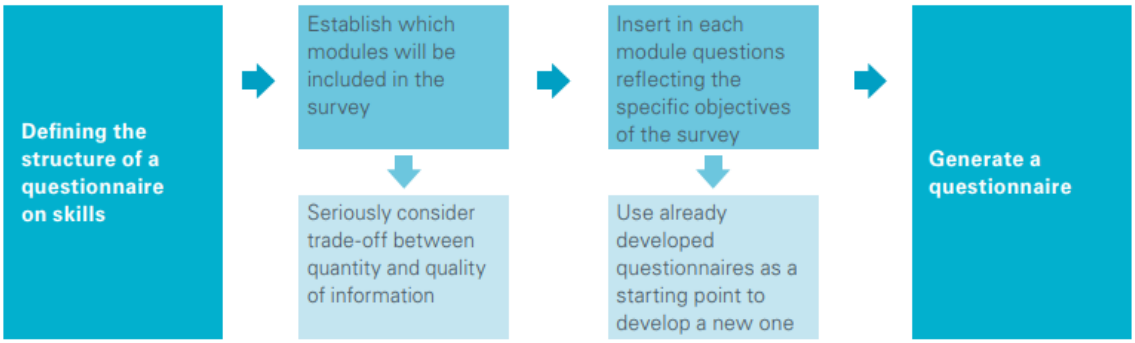

Figure 24. Key concepts about the design of survey structure, modules and content.

The survey for workers/job-demanders has been designed with the aim of capture two key indicators:

- To evaluate if the proposed software tool covers gaps between people and companies on wood and furniture sector.
- To identify the key factors to include on the proposed software tool.

The prepared survey for workers/job-demanders has mainly 3 parts:

- Questions about general information of the company where employers work or where unemployed people would like to work.
- Questions about what they would like to find on ALLVIEW software platform.
- Questions about which type of information the platform should contain on user profile.

The survey for training providers has been designed with the aim of capture two key indicators:

- To evaluate needs of training providers on wood and furniture sector.
- To identify the key factors to include on the proposed software tool.

The prepared survey for training providers has mainly 4 parts:

- Questions about general information of the Organization.
- Questions about what they would like to find on ALLVIEW software platform as training provider.
- Questions about which type of information the platform should contain to register new courses.
- Questions about which actions they would like to perform through ALLVIEW software platform.

The survey for companies has been designed with the aim of capture two key indicators:

- To evaluate gaps that companies find between workers and job-demanders on wood and furniture sector.
- To identify the key factors to include on the proposed software tool.

The prepared survey for companies has mainly 4 parts:

- Questions about general information of the company.
- Questions about what they would like to find in ALLVIEW software platform.
- Questions about which type of information the platform should contain to register new job offers.
- Questions about which actions they would like to perform through ALLVIEW software platform.

Once drafts of surveys were prepared and approved by UPCT, KIT and ULUB partners, surveys were shared with the rest of partners to be disseminated with stakeholders and final users on 15th February 2021. Surveys are available in English, in Spanish and in Slovenian. English version is shown in Annex II. Surveys are available online clinking on these links:

Links – English

User 'PEOPLE': ***https://forms.gle/gGdmZmJ1dBGzQ4UQA***
User 'COMPANY': ***https://forms.gle/HD6Bo8nfH7eq8Hkz7***
User 'TRAINING PROVIDERS': ***https://forms.gle/i4EcizKoefKtV2UE6***

Links – Spanish

User 'PEOPLE': ***https://forms.gle/cjFujYMd8HM97oev7***
User 'COMPANY': ***https://forms.gle/cn7TkdpMJ9gEuxJr8***
User 'TRAINING PROVIDERS': ***https://forms.gle/sJ5Wm1eez2RY7fYK8***

Links – Slovenian

User 'PEOPLE': ***https://forms.gle/5BWXtD7RTy5cj1SD8***
User 'COMPANY': ***https://forms.gle/p6HSXZ7Xb1btG9t27***
User 'TRAINING PROVIDERS': ***https://forms.gle/2d3z8gMwUGZN1oES6***

Allview

8

Analysis of responses from stakeholders and final users

8. Analysis of responses from stakeholders and final users

A total of 139 responses were collected from users People, Company and Training Provider. In particular, 94 responses from users People, 21 responses from users Company and 24 responses from users Training Provider from European countries. To get better conclusions, the data has been presented graphically below.

Analysis of responses from Users People

94 responses were collected from users People. Every survey included a few questions related to the company in which the user works, or whether the user is student or unemployed. As Figure 25 shows, 57% of the respondents are workers, 42% of the respondents are students and only 1% of the respondents are unemployed. Figure 26 shows that 34% of worker respondents belong to private companies and 22% of worker respondents belong to public companies. Additionally, Figure 27 shows the main company sector of the responses. So, this information allows us to have a general idea about the respondent profile and to know that in this case, the gathered opinions are quite well-balanced.

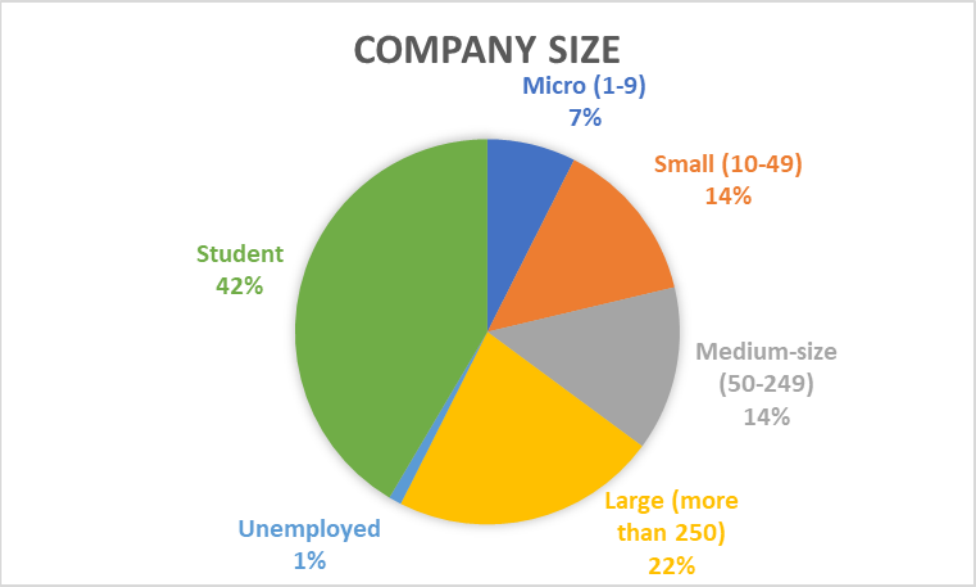

Figure 25. Analysis of responses – user People. Company size.

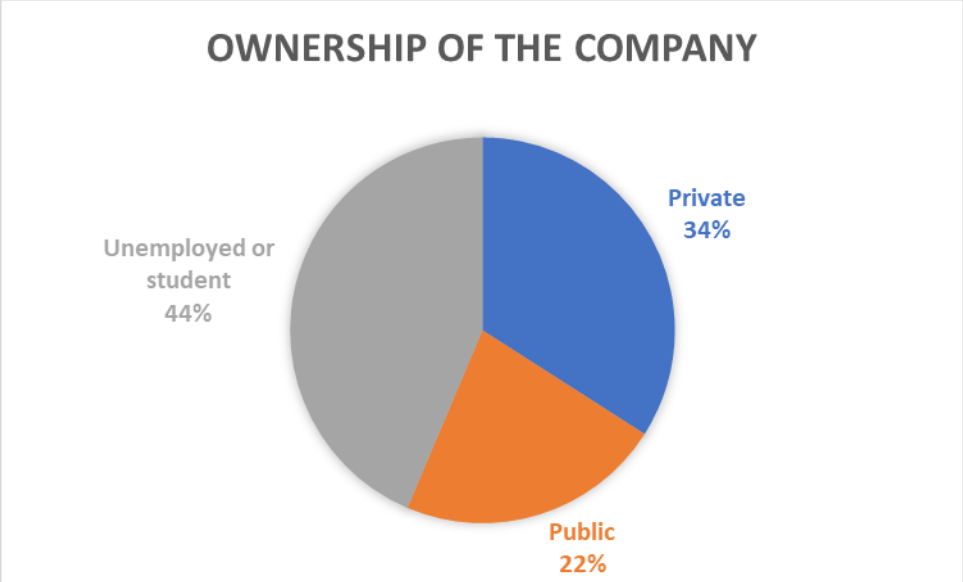

Figure 26. Analysis of responses – user People. Ownership of the company.

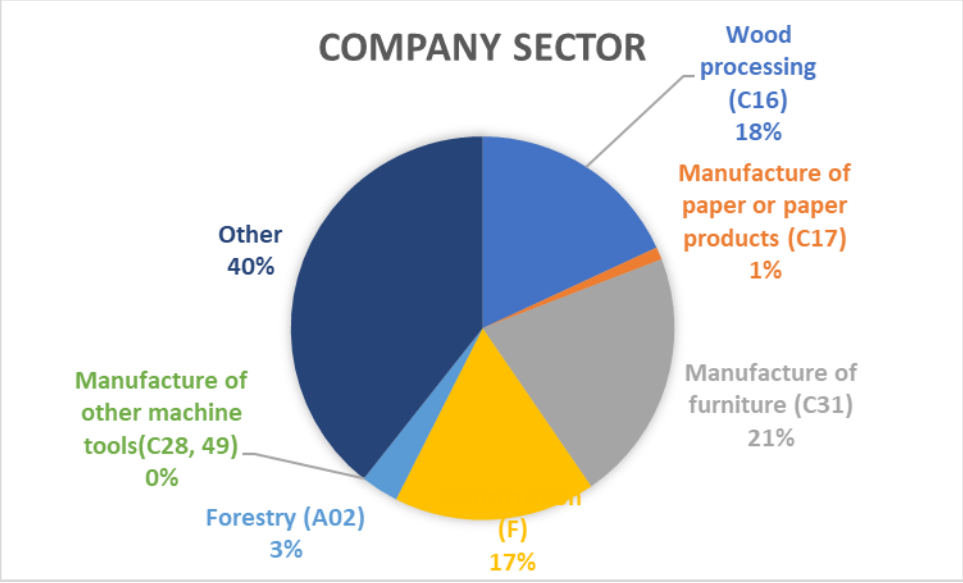

Figure 27. Analysis of responses – user People. Company sector.

Users People were asked about the most appropriate options to include in the user profile (see Figure 28) and, although name, email, professional experience and current skill fields are the most selected options, others like formal education, competences, phone number, fields of interest or residence have been selected widely.

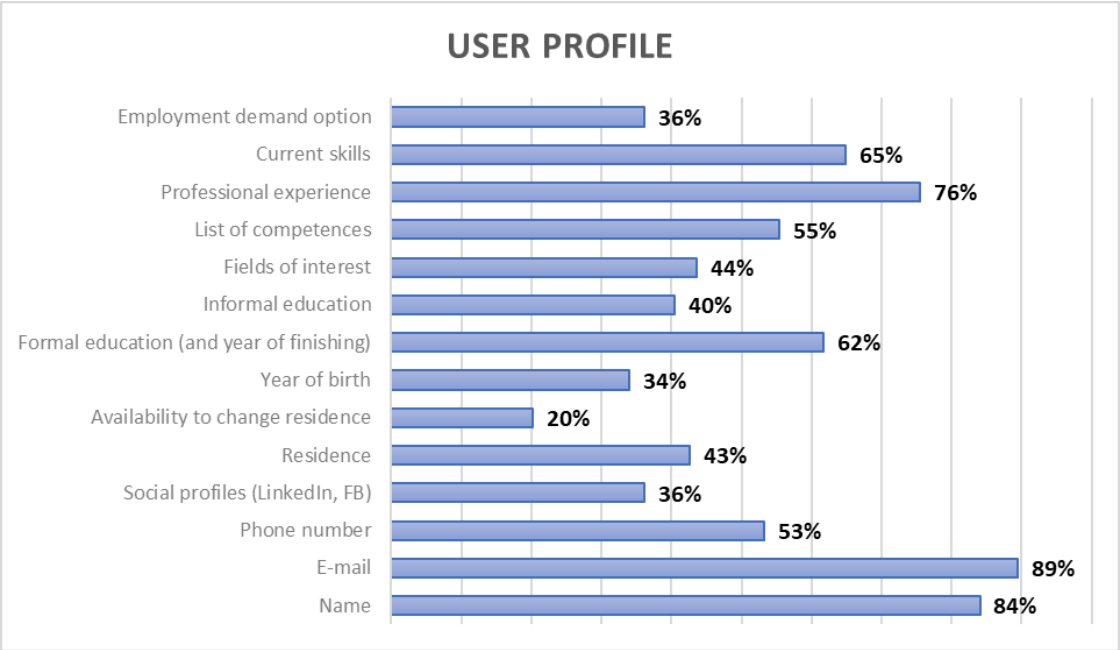

Figure 28. Analysis of responses – user People. User profile.

Respondents were asked if they would like to receive job offers that match their profile and professional experience. Results (see Figure 29) show that 94% of the respondents are interested in this option, being a 36% of them only when 'Employment demand option' is selected on user profile.

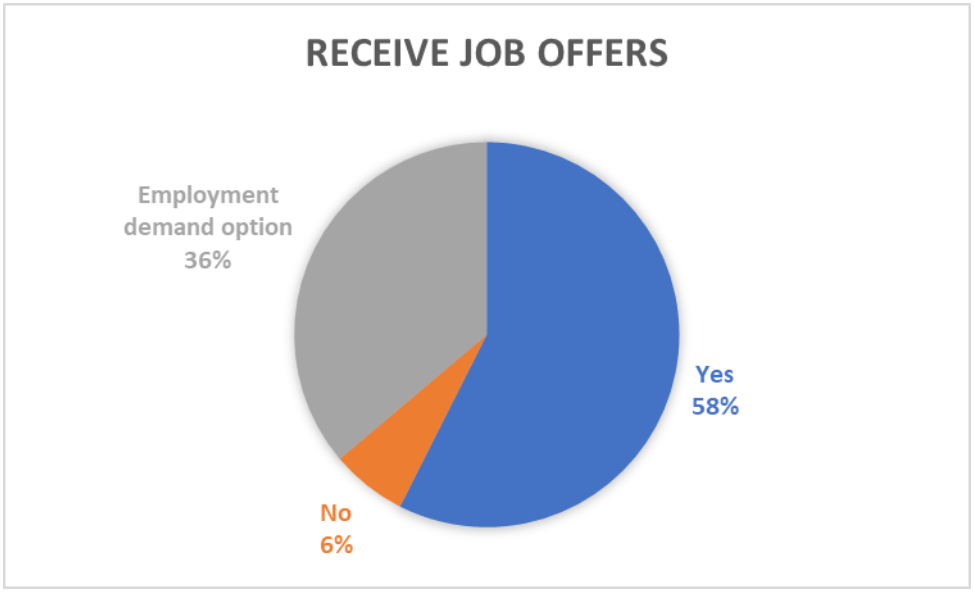

Figure 29. Analysis of responses – user People. Receive job offers.

Regarding training recommendations, several options were presented to respondents about what criteria should be considered in order to receive training recommendations, and the three preferred options are recommendations based on their skills of interest, user profile and specific training courses demanded by company (see Figure 30). However, previously performed training and other user experiences are the least selected.

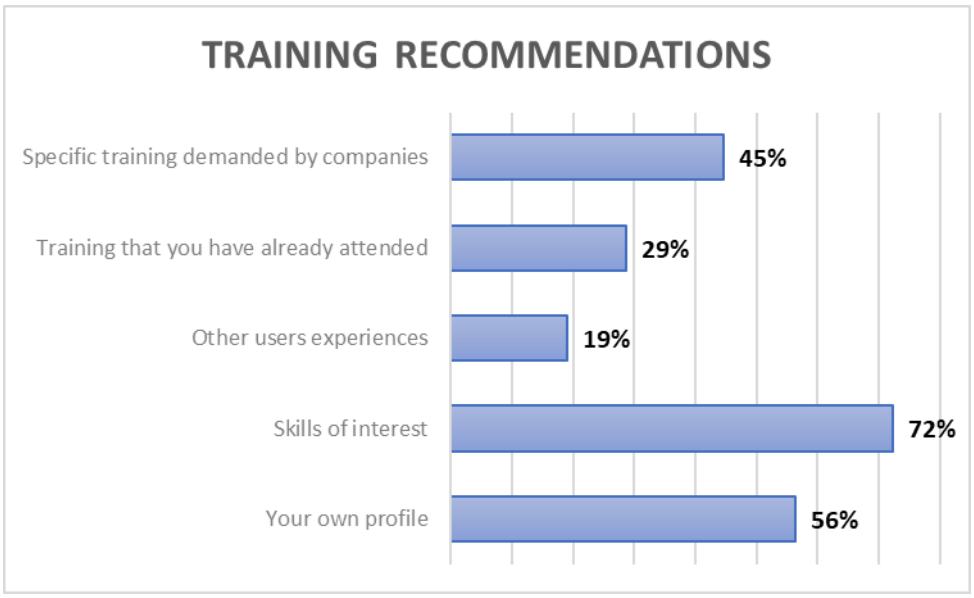

Figure 30. Analysis of responses – user People. Training recommendations.

Additional options were asked to know user preferences, and these have been very well considered. As we can see on Figure 31, 91% of the respondents prefer to see a ranking based on other users training experiences before taking a training course. 86% of the respondents prefer to receive a learning path that helps them achieve challenges (see Figure 32). And 88% of the respondents consider necessary to have an option to manage account privacy.

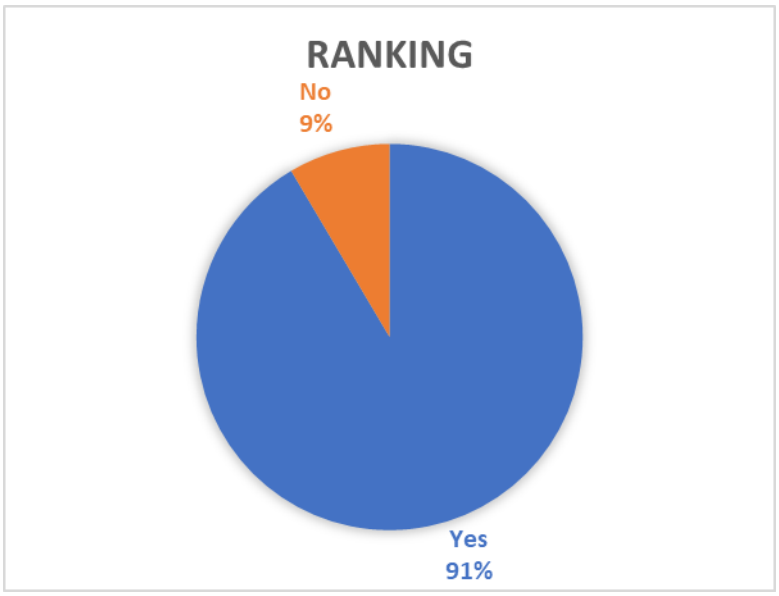

Figure 31. Analysis of responses – user People. Ranking.

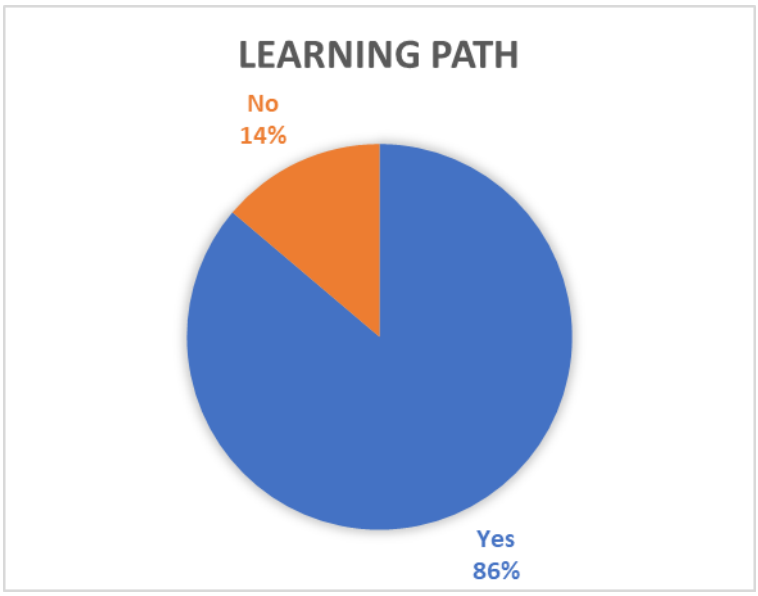

Figure 32. Analysis of responses – user People. Learning path.

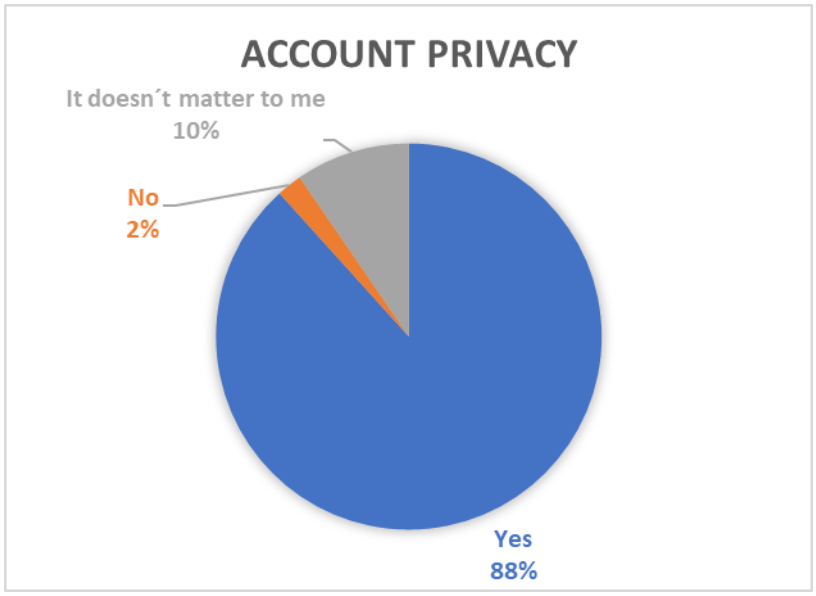

Figure 33. Analysis of responses – user People. Account privacy.

Several options were included to find out the interest in the mentioned options and the results were very satisfactory. Figure 34 shows that 77% of the respondents would like to search for jobs and companies, 70% of the respondents would like to search for training courses, and 46% and 45% of the respondents would like to comment a training course once performed and review a raking of training courses, respectively.

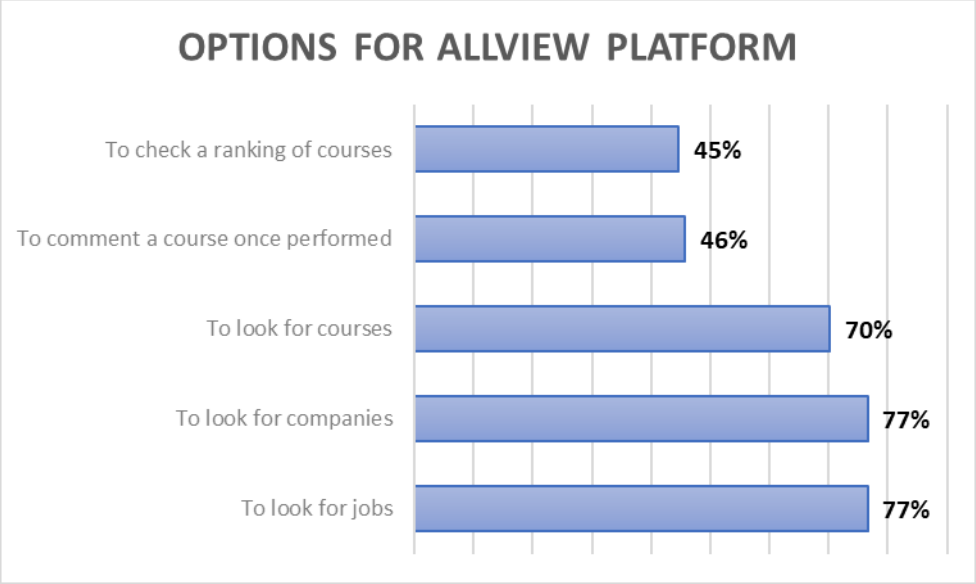

Figure 34. Analysis of responses – user People. Options for ALLVIEW platform.

Analysis of responses from Users Company

21 responses were collected from users Company, 38% from micro companies, 33% from small companies and 29% from medium-sized companies (Figure 35), with 90% of the responses coming from private companies and 10% from public companies (Figure 36). As in the previous section, the main company sector of the responses has been consulted (Figure 37). This information allows us to have a general idea about the respondent profile and to know that, in this case the gathered opinions are quite well-balanced.

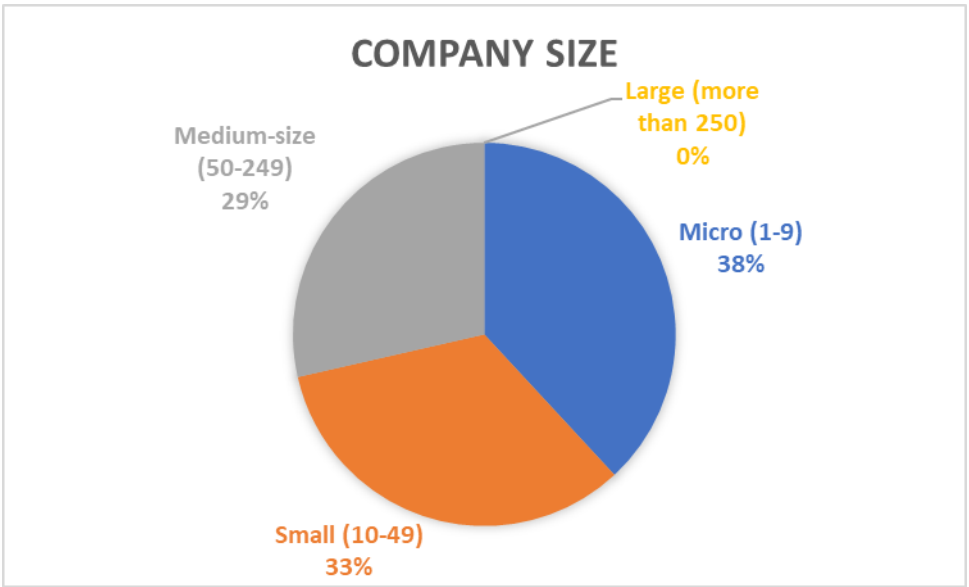

Figure 35. Analysis of responses – user Company. Company size.

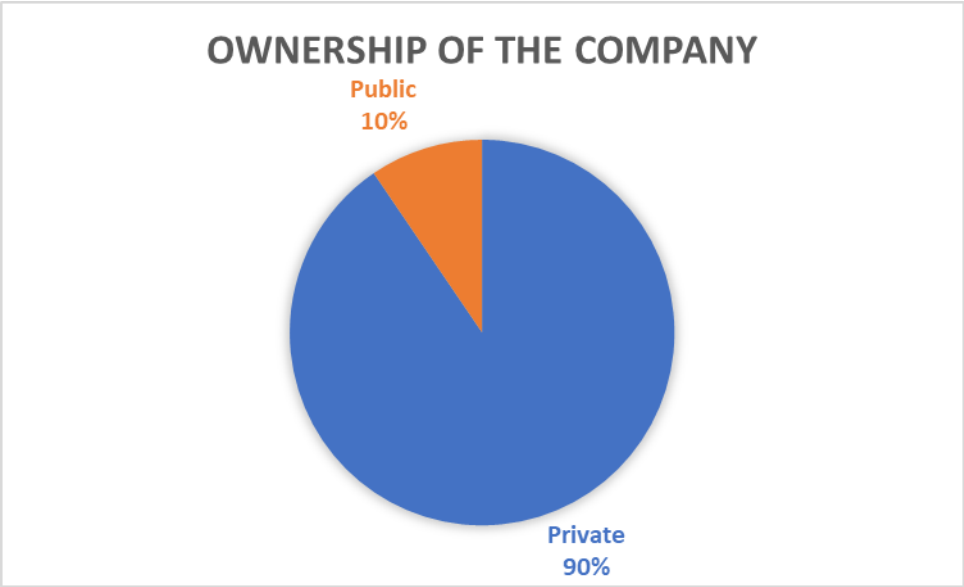

Figure 36. Analysis of responses – user Company. Ownership of the company.

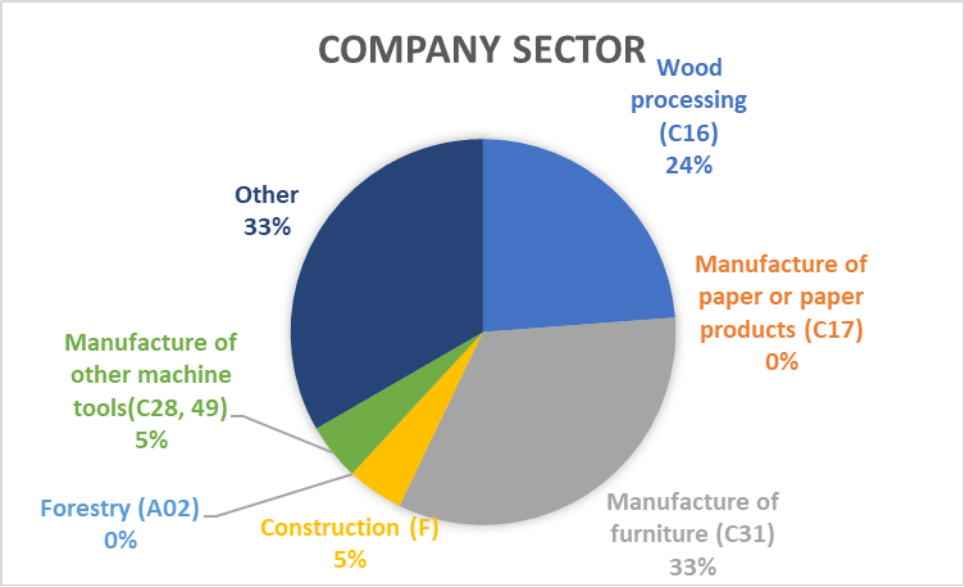

Figure 37. Analysis of responses – user Company. Company sector.

Users Company were asked about the most appropriate fields to include in the user profile when a company is registered. As Figure 38 shows, all options were widely selected, except the Company identification that only 43% of the respondents would include.

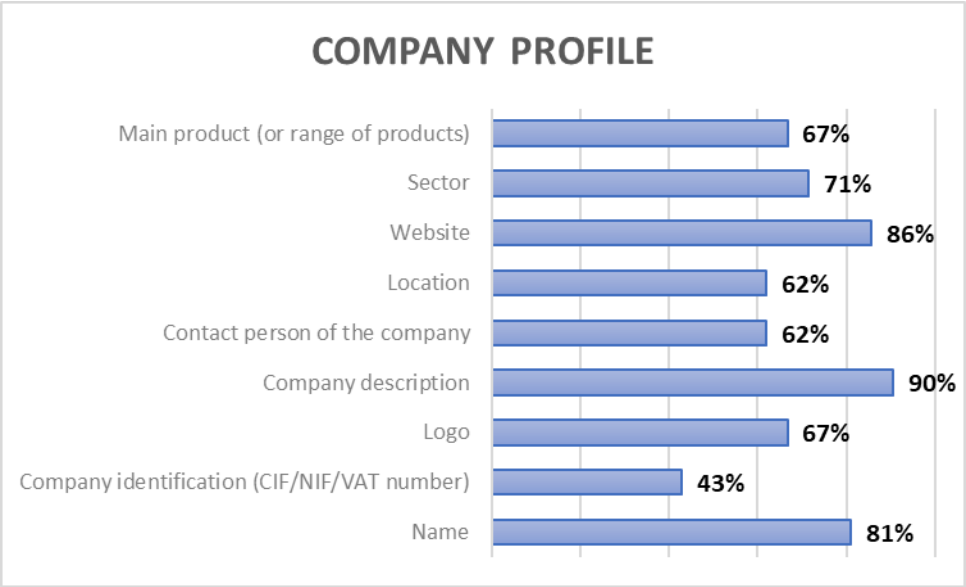

Figure 38. Analysis of responses – user Company. Company profile.

Several options were included to find out the interest of the users to include it on the platform (see Figure 39). The results show that the most preferred options are to search for appropriate candidates for job position offers and also to include job position offers. Other options were selected by more than 40% of the respondents, so it is also considered a very good result.

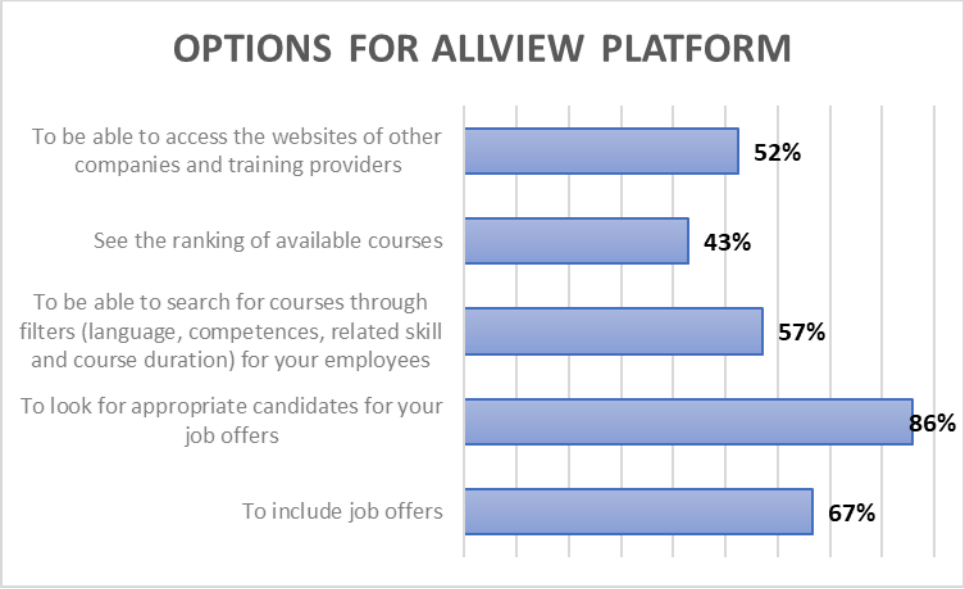

Figure 39. Analysis of responses – user Company. Options for ALLVIEW platform.

For users who want to look for appropriate candidates for their job position offers, the most important filters are the search for candidate skills, competences and training (see Figure 41).

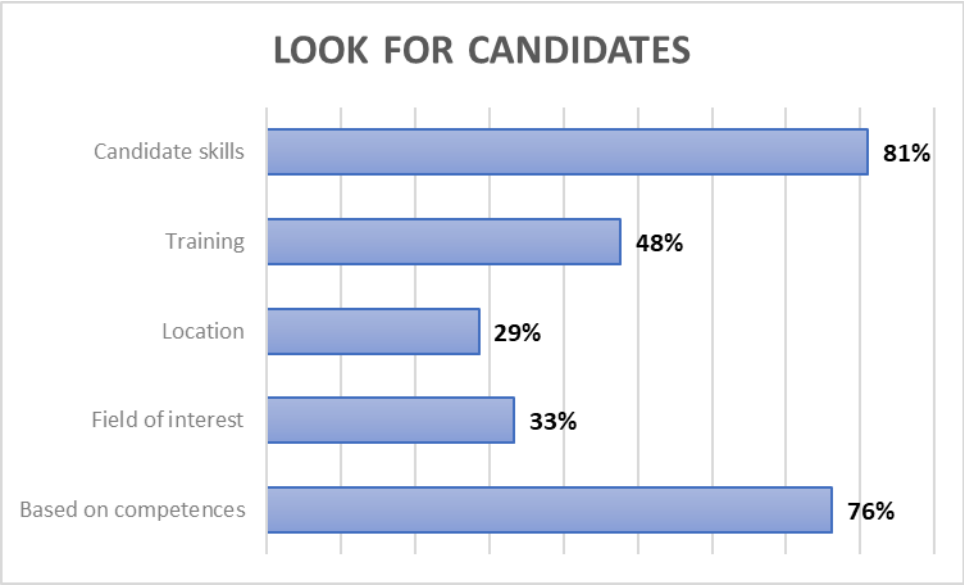

Figure 40. Analysis of responses – user Company. Look for candidates.

For users who want to include job position offers, Figure 41 shows fields which users Company consider important to include on their job position offers. Almost all proposed fields were selected by more than 40% of the respondents. However, only 24% of the respondents would include salary.

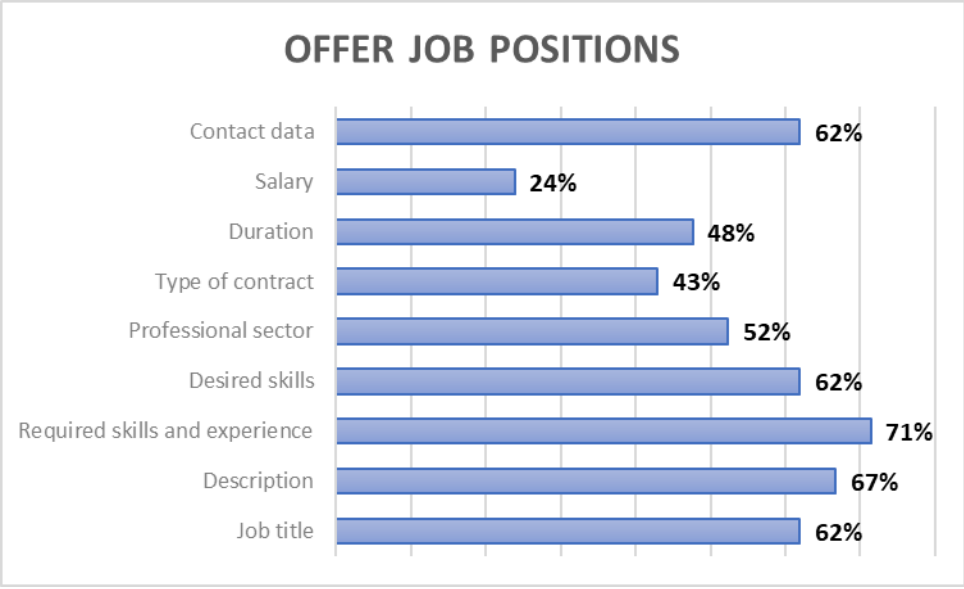

Figure 41. Analysis of responses – user Company. Offer job positions.

For users who want to include job position offers, users Company were asked if they would like the platform to recommend their job position offers to people who have the required skills and are looking for work, and 93% of the respondents said yes (see Figure 42).

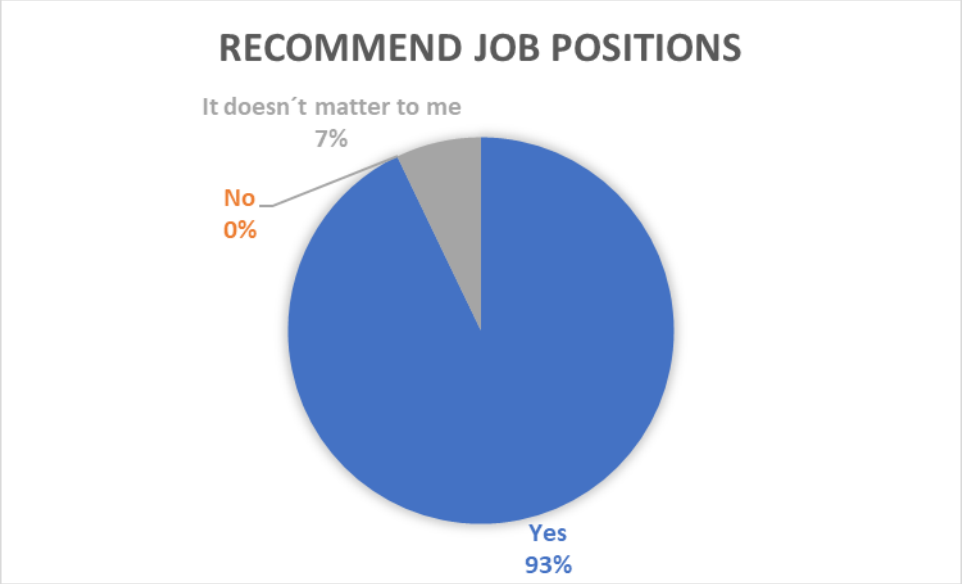

Figure 42. Analysis of responses – user Company. Recommend job positions.

Finally, about ESCO Classification, the results are unexpected because only 28% of the respondents prefer a platform that uses the ESCO Classification, and 67% of the respondents selected "It doesn't matter to me". This could be because ESCO Classification is not widely known, and people do not know the advantages.

Figure 43. Analysis of responses – user Company. ESCO Classification.

Analysis of responses from Users Training Provider

24 responses were collected from users Training Provider, 62% from large organizations, 21% from small organizations and 17% form medium-sized organizations (see Figure 44), being 67% of the responses coming from public organizations, 25% from private organizations and 8% from public-private organizations.

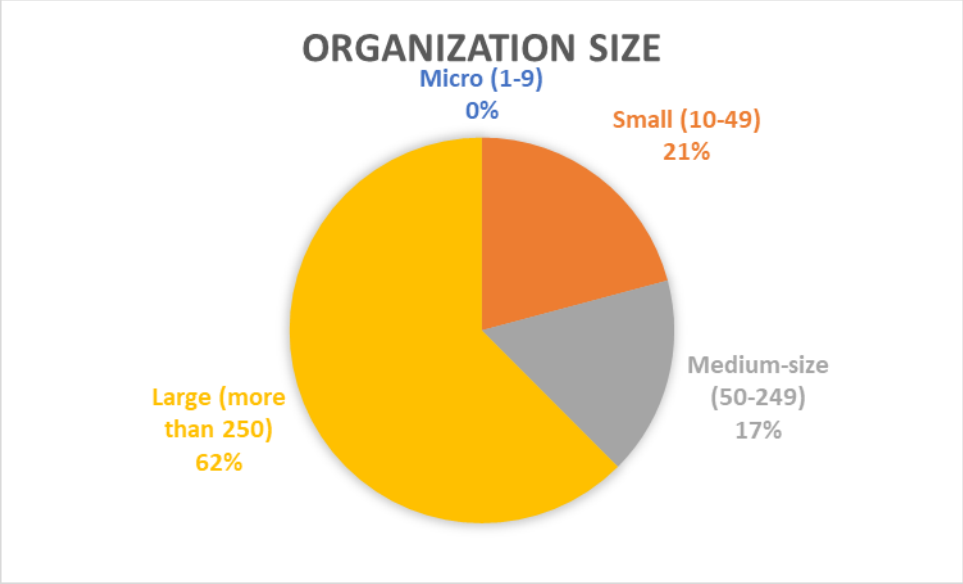

Figure 44. Analysis of responses – user Training Provider. Organization size.

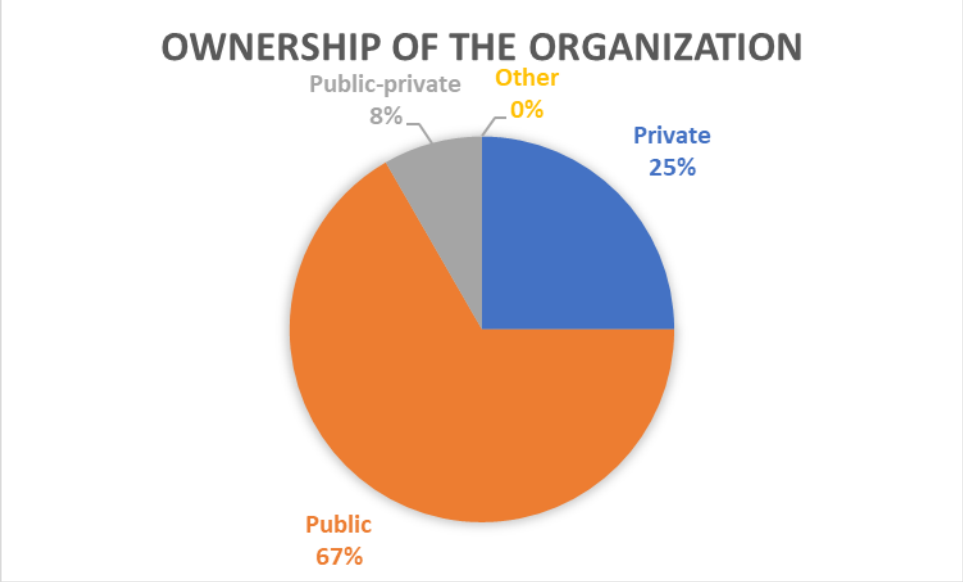

Figure 45. Analysis of responses – user Training Provider. Ownership of the Organization.

Users Training Providers were asked about the most appropriate fields to include in the user profile during their registration. As Figure 46 shows, all options have been selected widely, except the organization identification that only 46% of the respondents would include.

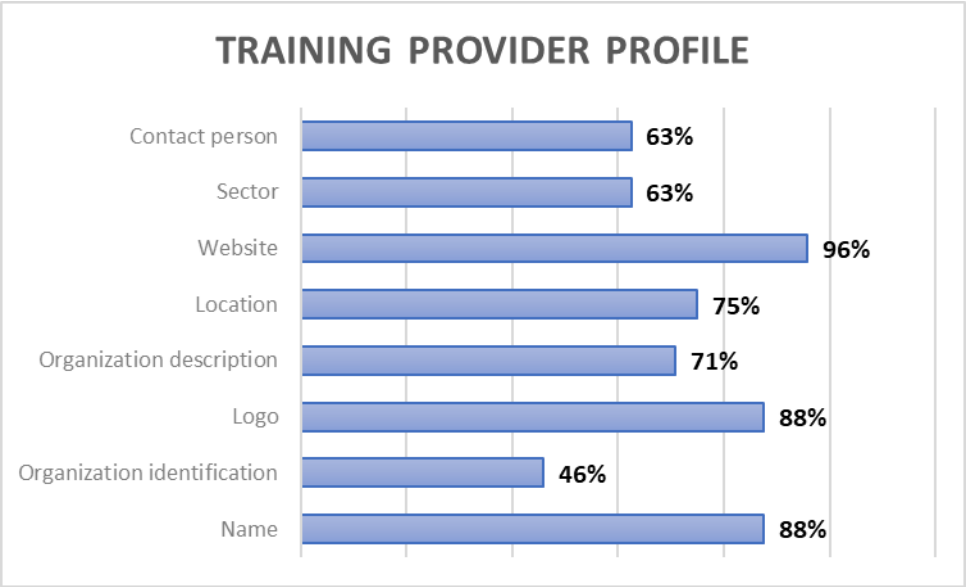

Figure 46. Analysis of responses – user Training Provider. Training provider profile.

Users Training Provider were asked if they would like to receive recommendations for offered training based on the skills demanded by the companies, suggestions for new training/skills that should be developed in the future and training courses offered by other similar training providers, and the first two are the most preferred (see Figure 47).

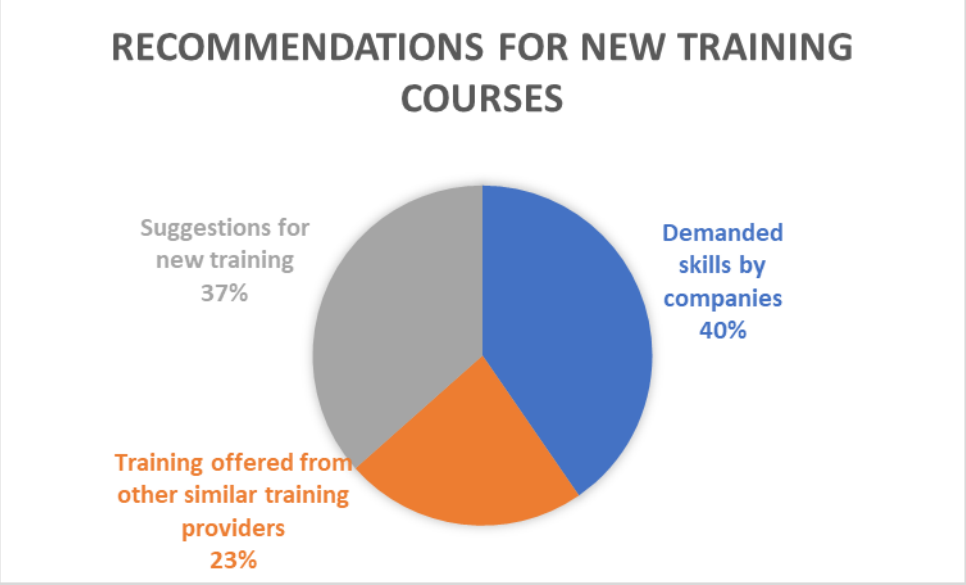

Figure 47. Analysis of responses – user Training Provider. Recommendations for new training courses.

As in the People and Company sections, users of Training Provider were also asked about the options they consider important for this type of platform. All options were selected by more than 40% of the respondents, with the option "to include new training", being the most preferred with 88% of the respondents selecting it (see Figure 48).

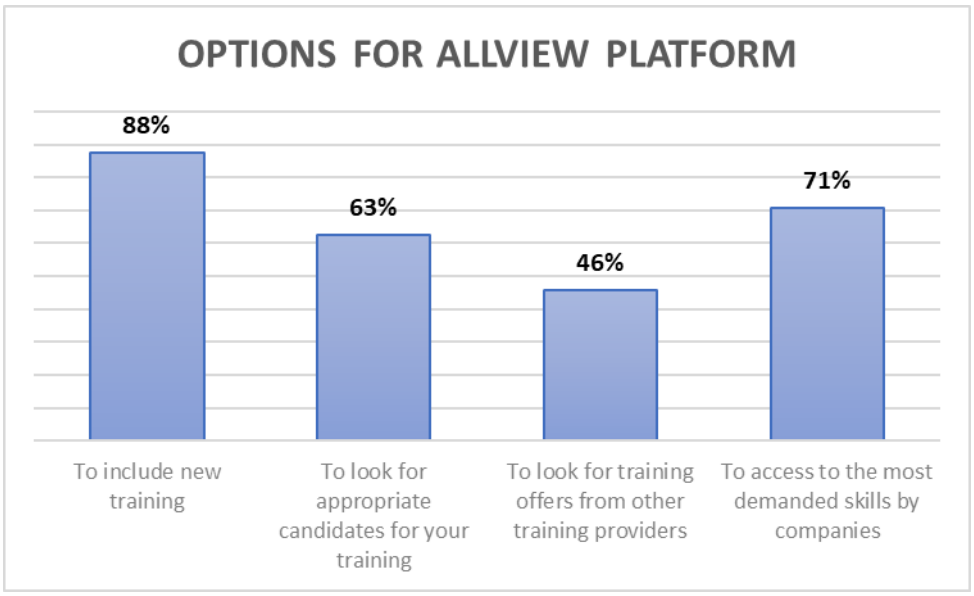

Figure 48. Analysis of responses – user Training Provider. Options for ALLVIEW platform.

Users Training Provider, who selected to include new training course, were asked what information the platform should contain when they include a new training course. As we can see on Figure 49, all proposed options were selected by more than 45% of the respondents.

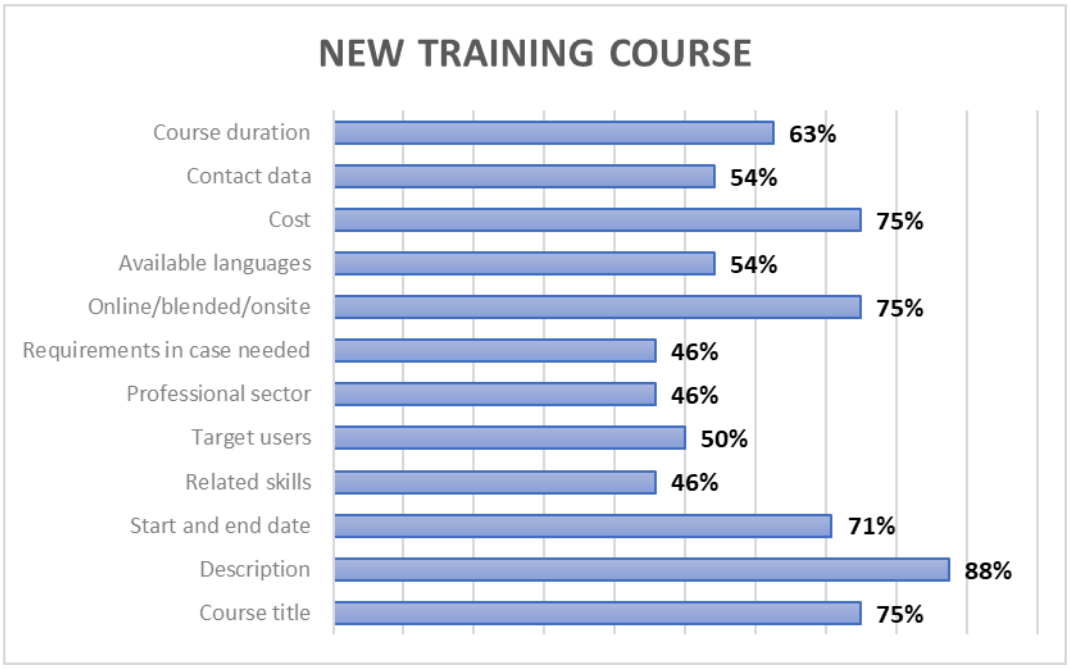

Figure 49. Analysis of responses – user Training Provider. New training course.

For users Training Providers, who selected to look for appropriate candidates for their training courses, were asked about which fields they would like to search. The results (see Figure 50) show that users would like to search by skills, competences and field of interest, with the location field being selected less.

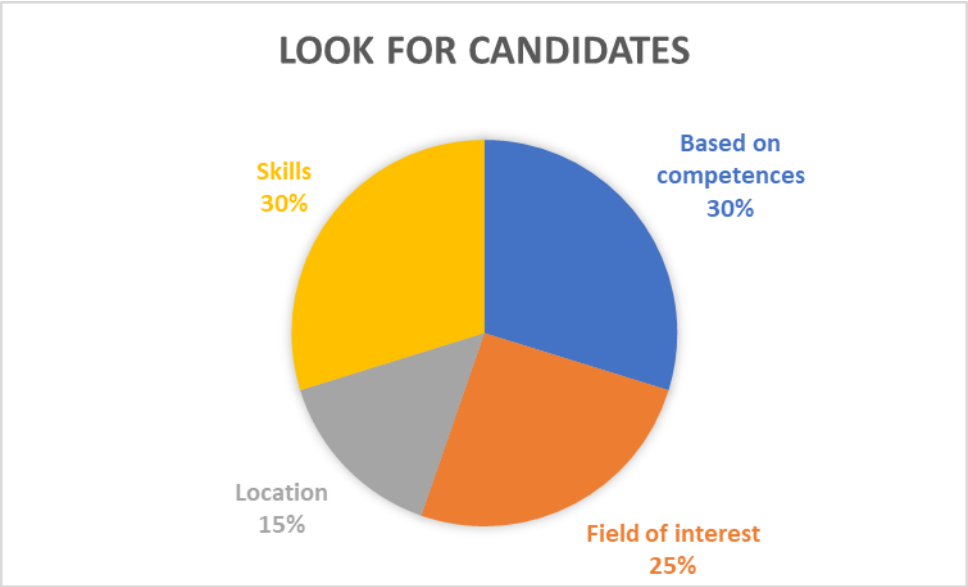

Figure 50. Analysis of responses – user Training Provider. Look for candidates.

Finally, as mentioned in the previous section, the results about ESCO Classification are unexpected because only 25% of the respondents prefer a platform that use ESCO Classification, and 75% of the respondents selected "It doesn't matter to me". This could be because ESCO Classification is not widely known, and people do not know the advantages.

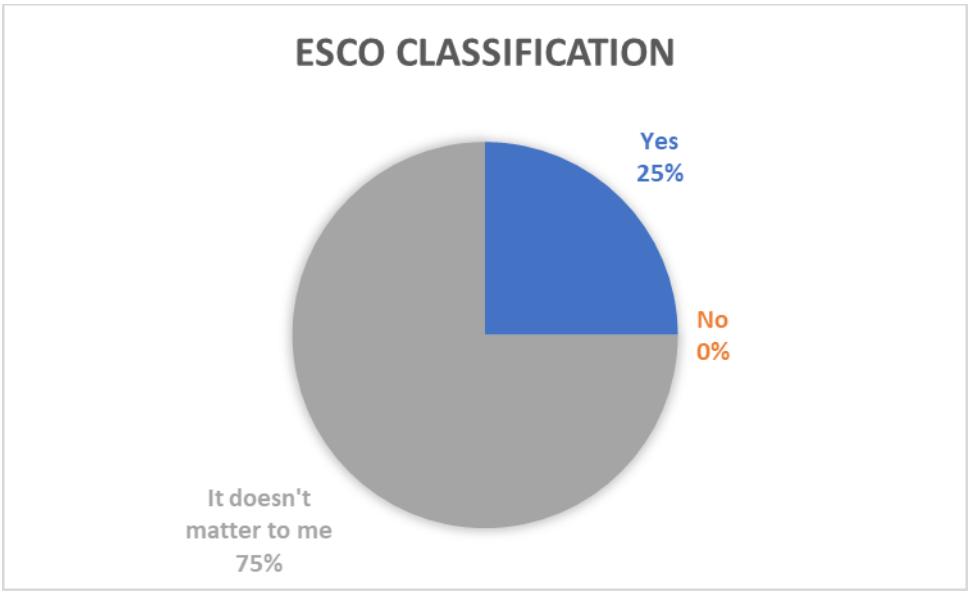

Figure 51. Analysis of responses – user Training Provider. ESCO classification.

Allview

9

Conclusions

9. Conclusions

In summary, during this research, 12 open-source tools for skill assessment have been analyzed, taking into account some minimum criteria defined previously. A comparison has been stablished between all tools and several gaps and needs have been identified. Mentioned gaps that will be considered in task 1.2 are:

1. The development of open-source software platform.
2. A platform that includes both training and employment parts involving three types of users (people, training providers and companies).
3. A platform that includes artificial Intelligence (AI)/ Machine Learning (ML) techniques in the platform core to offer personalized recommendations to users.
4. Options to stablish ranking by users.
5. Learning paths.
6. A platform based on a European standard like ESCO classification.

Additionally, to complement the comparative study of open-source tools, three types of surveys have been launched to gather stakeholders and users' opinions, one for each type of user. Results shows the importance of including specific fields to help users.

For users People, required options should be:

- ✓ The user profile should have at least the following fields: name, email, professional experience, current skills, formal education, competences, phone number, fields of interest and residence.
- ✓ Recommendations for job position offers should be included but allowing users to select it when they are demanding employment.
- ✓ The platform should provide recommendations for training courses based on the user's skill of interest, user profile and specific training courses demanded by companies.
- ✓ Options for managing the privacy of the account.

For users Companies, required options should be:

- ✓ The user profile should include the following fields: name, logo, company description, contact person of the company, location, website, sector and main product (or range of products).
- ✓ Options for users Company should include to publish job position offers (with these fields: job title, description, required skills and experience, desired skills, professional sector, duration, contact data), to look for appropriate candidates (filtering by candidate skills, competences and training courses), be able to search for courses for employees and to see the raking of available courses.
- ✓ Recommend job position offers to people who have the required skills.

For users Training Providers, required options should be:

- ✓ The user profile should include the following fields: name, logo, Organization description, location, website, sector and contact person of the organization.

- ✓ Recommendations about training to be offered based on demanded skills by companies, suggestions for new training/skills and training courses offered by other similar training providers.
- ✓ Options to include new training, to look for appropriate candidates (filtering by skills, competences and field of interest) and access to the most demanded skills by companies.

To sum up, the results and gaps described in this document will be included in the software design that will be performed in next task. The analyzed tools also give us a general view about how the software design should be in terms of how the information is presented to users. ALLVIEW platform should include separated sections for job and training options, a user profile should allow users to include personal and professional data, and news and ranking sections should be easily accessible to users, among others. Additional options will be included and uses cases will be defined in next task 1.2 to explain all software functionalities.

About the engine of the ALLVIEW platform, the core will be mainly composed of two blocks. The frontend and backend parts will be implemented separately with the appropriate technology in each case. The frontend is the graphical interface where users interact with the platform and it will be developed as a single-page application. The backend will include several software modules to interact with the frontend and the data base. In short, in next Task 1.2, technical specifications and user requirements of the ALLVIEW software platform will be defined considering this study.

Allview

10

Annex I – ESCO occupations for wood and furniture sector

10. Annex I – ESCO occupations for wood and furniture sector

In this annex, the ESCO occupations identified for wood and furniture sector are listed in the table below.

Table 3. ESCO occupations for wood and furniture sector.

Name	Occupation related
0.1 Commissioned armed forces officers	No
0.2 Non-commissioned armed forces officers	No
0.3 Armed forces occupations, other ranks	No
1.1 Chief executives, senior officials and legislators	Yes
1.2 Administrative and commercial managers	Yes
1.3 Production and specialised services managers	Yes
1.4 Hospitality, retail and other services managers	No
2.1 Science and engineering professionals	Yes
2.2 Health professionals	No
2.3 Teaching professionals	Yes
2.4 Business and administration professionals	Yes
2.5 Information and communications technology professionals	Yes
2.6 Legal, social and cultural professionals	Yes
3.1 Science and engineering associate professionals	Yes
3.2 Health associate professionals	No
3.3 Business and administration associate professionals	Yes
3.4 Legal, social, cultural and related associate professionals	Yes
3.5 Information and communications technicians	Yes
4.1 General and keyboard clerks	Yes
4.2 Customer services clerks	Yes

4.3 Numerical and material recording clerks	Yes
4.4 Other clerical support workers	No
5.1 Personal service workers	Yes
5.2 Sales workers	Yes
5.3 Personal care workers	Yes
5.4 Protective services workers	Yes
6.1 Market-oriented skilled agricultural workers	No
6.2 Market-oriented skilled forestry, fishery and hunting workers	Yes
6.3 Subsistence farmers, fishers, hunters and gatherers	No
7.1 Building and related trades workers, excluding electricians	Yes
7.2 Metal, machinery and related trades workers	No
7.3 Handicraft and printing workers	Yes
7.4 Electrical and electronic trades workers	No
7.5 Food processing, wood working, garment and other craft and related trades workers	Yes
8.1 Stationary plant and machine operators	Yes
8.2 Assemblers	Yes
8.3 Drivers and mobile plant operators	Yes
9.1 Cleaners and helpers	Yes
9.2 Agricultural, forestry and fishery labourers	Yes
9.3 Labourers in mining, construction, manufacturing and transport	Yes
9.4 Food preparation assistants	No
9.5 Street and related sales and service workers	No
9.6 Refuse workers and other elementary workers	No

Allview

11

Annex II - Surveys

11. Annex II – Surveys

In this annex, the surveys launched for collecting the opinion of users, companies and training providers are plotted. They are also available in the links included in Section 7.

Survey for users People

1. Select the size (number of employees) of the company that you are currently working for: *

- ◯ Micro (1-9)
- ◯ Small (10-49)
- ◯ Medium-size (50-249)
- ◯ Large (more than 250)
- ◯ Unemployed
- ◯ Student

2. Select the ownership of the company that you are currently working for: *

- ◯ Private
- ◯ Public
- ◯ Unemployed or student

3. Select the Sector of the company that you are currently working for or where you would like to work (if you are unemployed or student): *

- ◯ Wood processing (C16)
- ◯ Manufacture of paper or paper products (C17)
- ◯ Manufacture of furniture (C31)
- ◯ Construction (F)
- ◯ Forestry (A02)
- ◯ Manufacture of other machine tools (C28, 49)
- ◯ Other

4. If "Other" is selected in question 3, write the sector here:

Tu respuesta

5. What information should the platform contain about a user profile? (Multiple choice) *

- [ ] Name
- [ ] E-mail
- [ ] Phone number
- [ ] Social profiles (LinkedIn, FB)
- [ ] Residence
- [ ] Availability to change residence
- [ ] Year of birth
- [ ] Formal education (and year of finishing)
- [ ] Informal education/ training
- [ ] Fields of interest (required for recommendations)
- [ ] List of competences (required for recommendations)
- [ ] Professional experience
- [ ] Current skills
- [ ] Employment demand option

6. Would you like to receive job offers that match your profile and professional experience? *

- ( ) Yes
- ( ) No
- ( ) Only when having the 'Employment demand option' activated.

7. Would you like to receive training recommendations based on? (Multiple choice) *

- [ ] Your own profile
- [ ] Skills of interest
- [ ] Other user's experiences (in region and EU)
- [ ] Training that you have already attended
- [ ] Specific training demanded by companies

8. Would you like to see a ranking based on other users training experiences before you run a course? *

- ( ) Yes
- ( ) No

9. Would like to receive which your learning path should be to achieve your challenge? *

- ( ) Yes
- ( ) No

10. Do you think it is necessary to have an option to manage the privacy of your account? *

- ( ) Yes
- ( ) No
- ( ) It doesn´t matter to me

11. Which of the following options do you consider important for this type of platform? (Multiple choice) *

- [ ] To look for jobs
- [ ] To look for companies using filters by type, sector, location and job offers
- [ ] To look for courses using filters by language, competences, related skill and course duration
- [ ] To comment a course once performed
- [ ] To check a ranking of courses

12. Do you think this platform could manage any other type of information or data to offer the user a better experience? (Writing response)

Tu respuesta

Enviar

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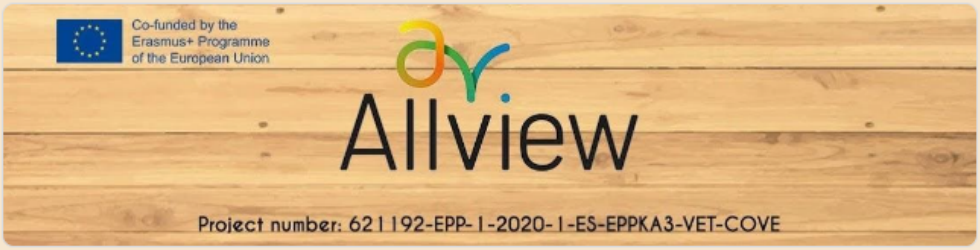
Survey for users Training provider



Survey for User 'TRAINING PROVIDERS'

ALLVIEW platform will be an open-source platform for broad skills assessment, identifying specific areas in need of development, and offering/jobs targeted training to address gaps. There will be three user profiles in a single system (see below picture), but this survey is focused on training provider profile. The idea is that the platform can connect companies, training providers and people on wood and furniture sector. The platform will help training providers to find candidates for their courses offers and to know the skills demanded by companies.
Note: Information collected by this survey only will be used on ALLVIEW project.

*Obligatorio

1. Select the number of students at the Organization per year: *

- ◯ Micro (1-9)
- ◯ Small (10-49)
- ◯ Medium-size (50-249)
- ◯ Large (more than 250)

2. Select the ownership of the Organization: *

- ◯ Private
- ◯ Public
- ◯ Public-private/ State-subsidised/ Grant-aided training provider
- ◯ Other

3. If you selected "Other" in question 2, write the type of the Organization here:

Tu respuesta

4. What information should the platform contain about a training provider profile? (Multiple choice) *

- ☐ Name
- ☐ Organization identification (CIF/NIF/VAT number)
- ☐ Logo
- ☐ Organization description
- ☐ Location
- ☐ Website
- ☐ Sector
- ☐ Contact person of the Organization

5. Would you like to receive recommendations for offered training based on? (Multiple choice) *

- [ ] Demanded skills by companies
- [ ] Training offered from other similar training providers
- [ ] Suggestions for new training/skills that should be developed in the future

6. Which of the following options do you consider important for this type of platform? (Multiple choice) *

- [ ] To include new training
- [ ] To look for appropriate candidates for your training
- [ ] To look for training offers from other training providers
- [ ] To access to the most demanded skills by companies

7. If you selected "To include new training" in question 6, what information should the platform contain about a new training? (Multiple choice)

- [ ] Course title
- [ ] Description
- [ ] Start and end date
- [ ] Related skills
- [ ] Target users
- [ ] Professional sector
- [ ] Requirements in case needed
- [ ] Online/blended/onsite
- [ ] Available languages
- [ ] Cost
- [ ] Contact data
- [ ] Course duration

8. If you selected "To look for appropriate candidates (people/companies) for your training" in question 5, which fields would you like to search? (Multiple choice)

- [ ] Based on competences
- [ ] Field of interest
- [ ] Location
- [ ] Skills

9. Do you prefer a platform that use ESCO classification (What is ESCO? https://audiovisual.ec.europa.eu/en/video/I-144718?lg=EN)? *

- ( ) Yes
- ( ) No
- ( ) It doesn´t matter to me

10. Do you think this platform could manage any other type of information or data to offer the user a better experience? (Writing response)

Tu respuesta

Enviar

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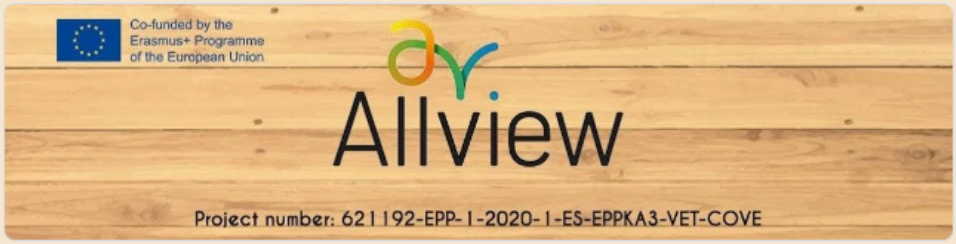
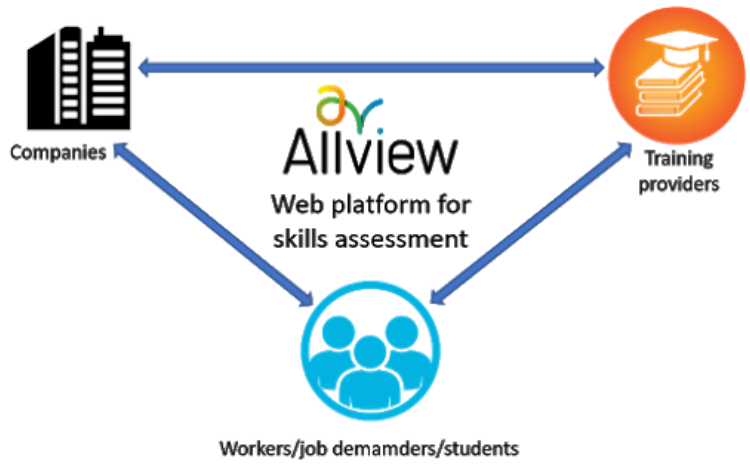
Survey for users Company



Survey for User 'COMPANY'

ALLVIEW platform will be an open-source platform for broad skills assessment, identifying specific areas in need of development, and offering/jobs targeted training to address gaps. There will be three user profiles in a single system (see below picture), but this survey is focused on company profile. The idea is that the platform can connect companies, training providers and people on wood and furniture sector. The platform will help companies to find candidates for their job offers, training for their employees and the most demanded skills by other companies.
Note: Information collected by this survey only will be used on ALLVIEW project.

*Obligatorio



1. Select the size (number of employees) of the company: *

- ◯ Micro (<9)
- ◯ Small (10-49)
- ◯ Large (50-249)
- ◯ Larger (more than 250)

2. Select the ownership of the company: *

- ◯ Private
- ◯ Public

3. Select the Sector of the company: *

- ◯ Wood processing (C16)
- ◯ Manufacture of paper or paper products (C17)
- ◯ Manufacture of furniture (C31)
- ◯ Construction (F)
- ◯ Forestry (A02)
- ◯ Manufacture of other machine tools (C28, 49)
- ◯ Other

4. If "Other" is selected in question 3, write here the sector:

Tu respuesta

5. What information should the platform contain about a company profile? (Multiple choice) *

- [ ] Name
- [ ] Company identification (CIF/NIF/VAT number)
- [ ] Logo
- [ ] Company description
- [ ] Contact person of the company
- [ ] Location
- [ ] Website
- [ ] Sector
- [ ] Main product (or range of products)

6. Which of the following options do you consider important for this type of platform? (Multiple choice) *

- [ ] To include job offers
- [ ] To look for appropriate candidates for your job offers
- [ ] To be able to search for courses through filters (language, competences, related skill and course duration) for your employees
- [ ] See the raking of available courses
- [ ] To be able to access the websites of other companies and training providers

7. If you selected "To include job offers" in question 6, what information should the platform contain for a job offer? (Multiple choice)

- [ ] Job title
- [ ] Description
- [ ] Required skills and experience
- [ ] Desired skills
- [ ] Professional sector
- [ ] Type of contract
- [ ] Duration
- [ ] Salary
- [ ] Contact data

8. If you selected "to include job offers" in question 6, would you like the platform recommends those job offers to people who have the required skills and they are looking for work?

- ◯ Yes
- ◯ No
- ◯ It doesn´t matter to me

9. If you selected "to look for appropriate candidates for your job offers" in question 6, which fields would you like to search? (Multiple choice)

- ☐ Based on competences
- ☐ Field of interest
- ☐ Location
- ☐ Training
- ☐ Candidate skills

10. Do you prefer a platform that use ESCO classification (What is ESCO? https://audiovisual.ec.europa.eu/en/video/I-144718?lg=EN)? *

- ◯ Yes
- ◯ No
- ◯ It doesn´t matter to me

11. Do you think this platform could manage any other type of information or data to offer the user a better experience? (Writing response)

Tu respuesta

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