

**WP 3: Quasi-
experimental
research design,
data collection
and analysis**

Report 2

e-services in IAG counselling



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The GeGS Project

GEGS (Good E-Guidance Stories) was an ERASMUS+ funded policy innovation project that took place from March 2021 to June 2024. It aimed at testing innovative approaches to modernise European information, advice & guidance (IAG) service provision with regard to vocational and educational training (VET). GEGS followed the hypothesis that an IAG digitalisation process is not only about new technology but needs to be flanked by systemic and participatory training opportunities on digital and IAG competences to ensure that effective IAG e-services will be designed client-centred, holistic and empowering.¹

The specific objectives of the project were to improve IAG services by

- a) enhancing the culture shift in IAG for VET modernisation by co-creation of a comprehensive training measure for IAG practitioners leading to effective e-services;
- b) embedment of digital services: plan, test, adapt and introduce an AI based, digital IAG technology evaluate in the regions of Thessaly, Sardinia and Berlin.

The project thus supported the transition from in-person IAG counselling to blended or hybrid forms of counselling which combine e-services and in-person formats. The project design was based on the assumption that four prerequisites need to be fulfilled for this transition to happen:

1. The organisational structures and work processes support hybrid counselling and the use of e-services.
2. IAG practitioners are capable to use the tools (i.e., they are technically adept).
3. IAG practitioners are willing to use the tools (i.e., they have a digital mindset).
4. There exist digital tools which fit the specific tasks in IAG counselling they are meant to support.

In order to realise these requirements for digital shift and hybrid counselling in IAG, GeGS tested two components: (i) a training framework improving counselling as well as digital competences of e-services for IAG practitioners and managers, and (ii) an AI-based, digital IAG technology adapted to the region-specific circumstances and needs. Testing took place in six European countries or regions: France, Germany (region of Berlin), Greece (region of Thessaly), Ireland, Italy (region of Sardinia), and UK. In the three regions (Berlin, Thessaly, Sardinia), the implementation of GEGS obtained support from high-level authorities. The reasoning was that the culture shift intended in the project could be enhanced through a top-down sponsorship.

This report presents the results of the quasi-experimental research activities with respect to the **second component** of the GeGS project, the integration of an AI based, digital IAG technology into the counselling process of IAG practitioners.²

¹ Cf. project proposal p. 72.

² A detailed description of the evaluation methodology can be found in the document *Methodology and Protocol description*. The European Commission support for the production of this document does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Design of the Experimentation

The digital tool for IAG counselling tested in GeGS was based on Jobiri³, an innovative AI-driven online career counselling tool developed by an Italian company which provides information and support for the three main stakeholders in the matching process on the labour market: job-seekers, companies, and IAG practitioners. For job-seekers, the platform compiles job offers from different sources, provides support on writing a CV or a cover letter, and offers video lessons on employability skills, training and feedback for job interviews. Companies can post job offers as well as search and select potential candidates from the talent database. For IAG practitioners, the platform offers tools to collect and manage information and training material and to manage the matching process between job-seekers and companies. Moreover, Jobiri analyses information on the labour market and derives insights regarding required skills and competences, thus providing useful information for IAG in order to become more responsive to current and future demands.

The tool was adapted for use in each of the three regions involved in its testing, i.e. Berlin, Thessaly, and Sardinia. This process involved the three high-level authorities as well as IAG organisations and practitioners, following the recommendation from the study on lifelong guidance for DG Employment to have “the guidance community [...] engaged in how [ICT and AI] is developed and used”⁴ as well as the assumption that successful integration of ICT into guidance practice depends on three key drivers: (i) the policy support, (ii) workforce development, and (iii) an ICT system design that fits the specific purpose.⁵

Jobiri was then offered for use to IAG practitioners and – though these – to clients seeking information, advice, and guidance. The major target group were young people in or in transition to VET, NEET, and jobseekers in the age range of 16-29 years. The digitally enhanced counselling process was to be individualized according to the client’s needs, plans and objectives. However, all processes were supposed to involve the following elements:

- Competence and CV assessment;
- Co-design of Personal Development Plans;
- Targeted IAG services delivered to young clients through the tool.

Over the course of the field trials, practitioners’ workshops took place on a regular basis in order to exchange about progress, get feedback, and answer questions. This again follows a recommendation from the study on lifelong guidance for DG Employment stating that “a learning community could address the relevant problems to be solved, aligned with the willingness to use technology most effectively”.⁶

The design of component 2 was based on the following hypotheses:⁷

1. Implementation of digital tools within IAG counselling need to be adapted to country- or region-specific needs, circumstances, legal frameworks and governance models, but also contain some features which are common in all settings, i.e. common challenges for cultural resistances, lack of digital competences, limitations imposed

³ <https://www.jobiri.com>

⁴ European Commission, Directorate-General for Employment, Social Affairs and Inclusion, Barnes, S., Bimrose, J., Brown, A. et al., Lifelong guidance policy and practice in the EU – Trends, challenges and opportunities – Final report, Publications Office of the European Union, 2020, <https://data.europa.eu/doi/10.2767/91185>.

⁵ Cf. Bimrose, J., Kettunen, J., & Goddard, T. (2015) 'ICT - the new frontier? Pushing the boundaries of careers practice', British Journal of Guidance and Counselling, 43 (1) 8-23. DOI 10.1080/03069885.2014.975677.

⁶ European Commission, Directorate-General for Employment, Social Affairs and Inclusion, Barnes, S., Bimrose, J., Brown, A. et al., Lifelong guidance policy and practice in the EU – Trends, challenges and opportunities – Final report, Publications Office of the European Union, 2020, <https://data.europa.eu/doi/10.2767/91185>.

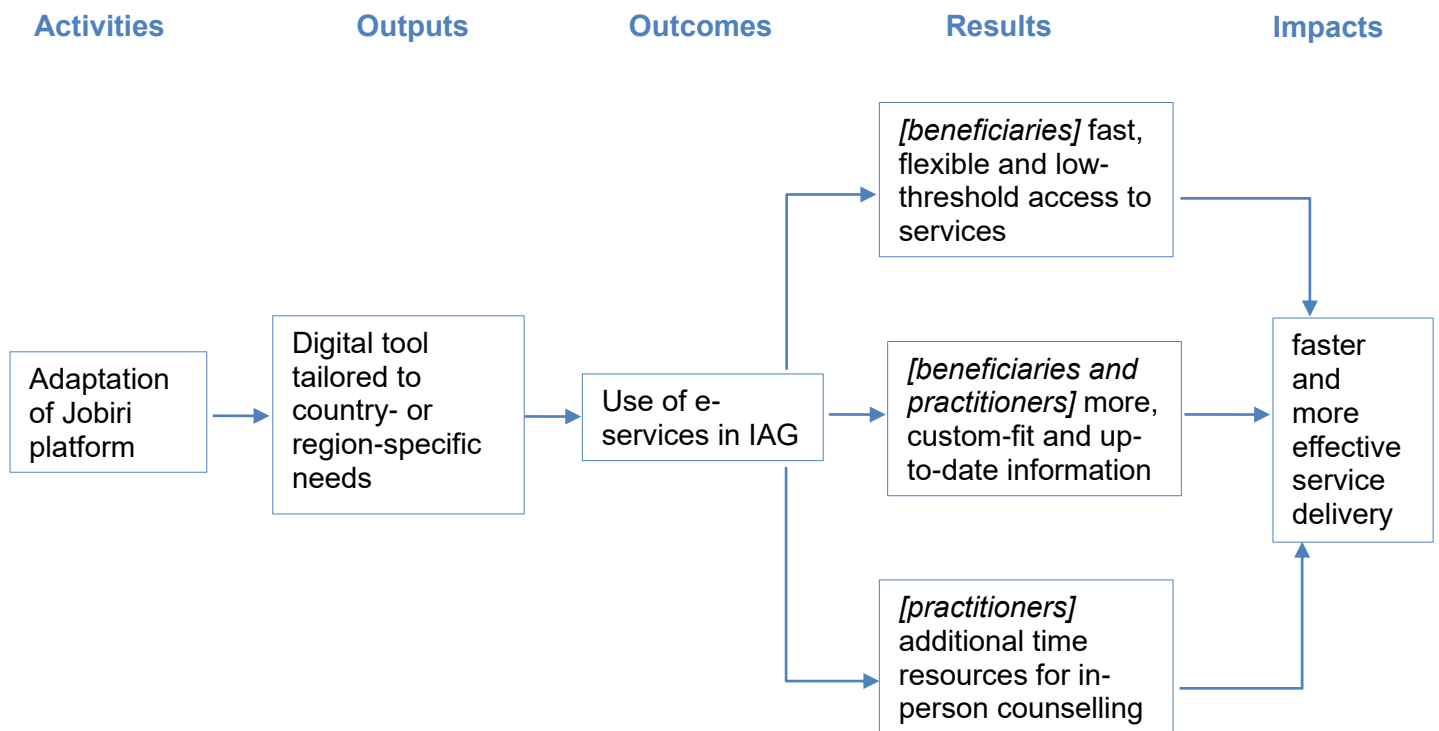
⁷ Cf. project proposal p. 77.

by legal and security regulations.

2. The IAG function in VET needs to be modernised, to be more relevant to the needs of users, companies, labour markets. Its provisions, "language" and regulations, despite the efforts done so far at the EU level, often fail to be well connected to companies and labour market evolutions. The AI-based services developed within GeGS are an excellent occasion to test innovative and internationally recognised ICT tools and to test concretely the consequences of their introduction within the involved official VET systems.
3. An effective shift towards digitalisation needs to be accompanied by interpersonal exchange.

The implementation of the digital tool was expected to help clients obtain better, i.e. faster and/or more effective IAG services. The underlying logic chain is depicted in Figure 1.

Figure 1: logic chain



The success criteria for this aspect of GeGS is the number of IAG practitioners who have used the AI-based platform and who consider that their counselling has improved; the number of young people who have used the platform and who consider it useful; the number of young people who have used the platform and who have improved their employability and/or had improved outcomes in their VET paths, e. g., have enrolled in VET/education after IAG provision, have had access to employment etc. The project aimed at involving 90 practitioners (30 per region) and reaching a total of 1.080 to 1.350 clients (12 to 15 per practitioner). Participation was voluntary.

Implementation of the Experimentation

The technical preparation and adaptation of the Jobiri tool started in April 2021. First playtesting took place in September 2022, the final release of the platform was in June 2023.⁸ The adaptation consisted of the following steps:

- Platform translation and adaptation to the specific legal and operational contexts:
 - Translate platform in German and Greek
 - Adapt platform terms of use and privacy policy to specific legal context
- Platform functions customization:
 - Co-develop AI tools and adapt for German, Greek and Italian labour markets
 - Job opportunities source selection and web scraping
 - Deduplicate data in case of duplicate job offers
 - Develop UI to allow local partners to map job offers to appropriate ESCO codes
 - Training of the dataset
 - Develop data visualization to provide enhanced job market analysis

The adaptation process strongly involved the regional project coordinators as well as representatives from the authorities and IAG practitioners: They helped with translations, made sure texts and tools fitted the regional specificities, compiled keyword lists, and provided general feedback on the tool. This involvement of various partners was particularly relevant as the tailoring work engaged them from an early stage. For example, this process initiated a discussion among the practitioners on how to integrate the tool into their counselling processes already before the start of the testing itself.

The adaptation process turned out to be very complex, thus taking more time than initially planned (18 months according to work plan). Steps that took significantly longer than expected were:

- Adapting platform terms of use and privacy policy to specific legal context: Although provisions on information privacy and data protection are regulated on EU level⁹, most countries and/or regions have developed individual regulations on data protection which had to be accounted for.
- Co-developing tools and adapting them for German, Greek and Italian labour markets: Jobiri uses keywords in order to map vacancies in categories such as contract type, seniority, degree and working hours. Since both German and Greek are languages that rely heavily of inflection, i.e. modification of a word in order to express different grammatical categories, defining these keywords was complex and time-consuming.
- Job opportunities source selection and web scraping: The regional partners proposed online job sites to use for vacancy sourcing. In Berlin and Sardinia, only about half of the sites proposed could be used. Key reasons for not using sites were technical issues (captchas to protect page, scraping firewall, XSRF tokens) or qualitative flaws (jobs lacking some relevant information, promotion of unethical jobs). Since having a critical number of

⁸ This was the release of a full version that could be used for testing with clients. Over the course of the trials, the platform was continuously updated and improved.

⁹ European Commission: Regulation on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (COM/2012/010 final).

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vacancies in the database was necessary to ensure a representative picture of the regional job markets, several rounds of searching for sources were carried out.

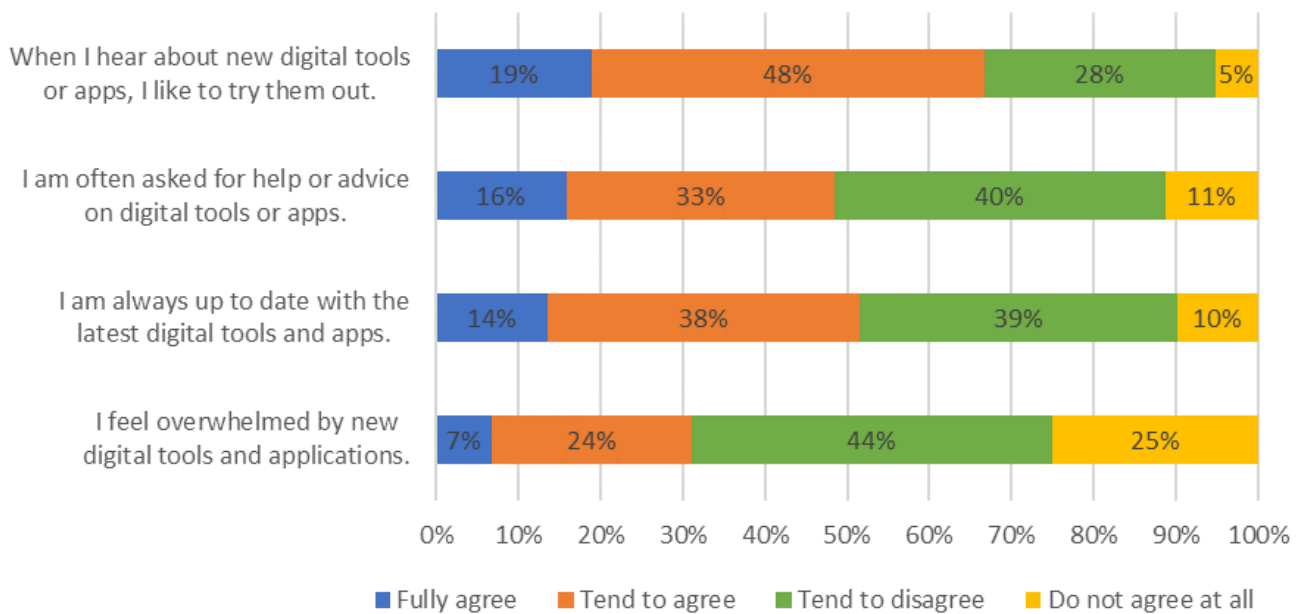
Early in the field phase it became apparent that recruiting both practitioners and beneficiaries for the testing of the digital platform posed a major challenge. The main reasons for this were time constraints, both on the side of the practitioners and the clients, combined with the individual value added of the tool remaining unclear: Practitioners as well as clients were reluctant to put time and effort into familiarizing with a rather complex tool which offered an uncertain pay-off for their individual objectives (more effective counselling and fast vocational orientation respectively). For recruiting clients, the trial showed that about 1 in 3 clients the practitioners offered Jobiri to actually agreed into testing the tool. The field trials showed that in general, younger clients tended to be more open to using the tool, while older clients were more sceptical. Among those who decided not to get involved in the testing, many stated that they did not want to invest the time of registering with the platform and getting to know it. Further reasons clients stated for not participating were

- preference for carrying out the counselling process exclusively in personal contact;
- lack of digital competences, especially with respect to using a PC or laptop rather than a smartphone or tablet;
- lack of adequate hardware (PC or laptop).

Ultimately, a total of about 40 IAG practitioners tested the digital tool in their counselling processes with about 500 clients over a period of 12 months (June 2023 to June 2024). Over the entire testing period, meetings were held regularly on the regional level in order to support implementation and to foster exchange among the practitioners regarding their experiences and challenges.

Among the clients, there was a focus on young adults entering the job market for the first time after compulsory schooling or initial VET or university training. Almost two thirds of the clients who tested Jobiri had this background. Another relevant group were unemployed people, mostly participating in training at the time of the IAG counselling. The clients involved in the field trial tended to be digitally savvy, with half of them agreeing that they are always up to date with the latest digital tools and apps, and almost two thirds stating that they are curious regarding new digital tools or apps (cf. **Figure 2**). Given this background, most of the clients found it easy to understand and handle Jobiri. Still, more than half of the clients needed at least some help from their practitioner in order to be able to use the tool.

Figure 2: beneficiaries' views on digital tools



Feedback survey beneficiaries, number of cases: n=132

The experimentation, i.e. implementation with clients, started in **Berlin** in April 2023, involving practitioners and thus clients from different types of IAG service providers: The Job Points are low-threshold contact points focussing on matching and supporting the application process. The Educational Counselling and Career Guidance provides information and guidance on all matters pertaining to education and the world of work for all age groups and personal needs. Similar services, but for specific target groups such as (migrant) women or refugees are provided by several smaller advice centres from which practitioners were involved in the field trials, as well. While initially, more than 30 practitioners were interested in testing the digital tool, ultimately there were around 15 active users, supporting around 200 clients with the help of Jobiri. The practitioners of the JobPoint left the GeGS project in the course of the trials due to time constraints and lack of usability of the digital tool for their counselling practice.

In **Sardinia**, the field trials started in mid-2023 and involved a total of 35 IAG practitioners, half of which were very actively using the tool with around 170 clients. Positive results were achieved with public employment agencies and the University of Cagliari's placement service, whereas private employment agencies experienced delays in experimentation due to a shortage of users assigned by the GOL programme.

Thessaly faced numerous challenges while trying to get the field trials underway. In addition to reservations on the part of counsellors and beneficiaries, seasonal departures of clients and climatic disasters made it even more difficult to find participants for the experimentation. Ultimately, six practitioners tested the tool with about 120 clients.

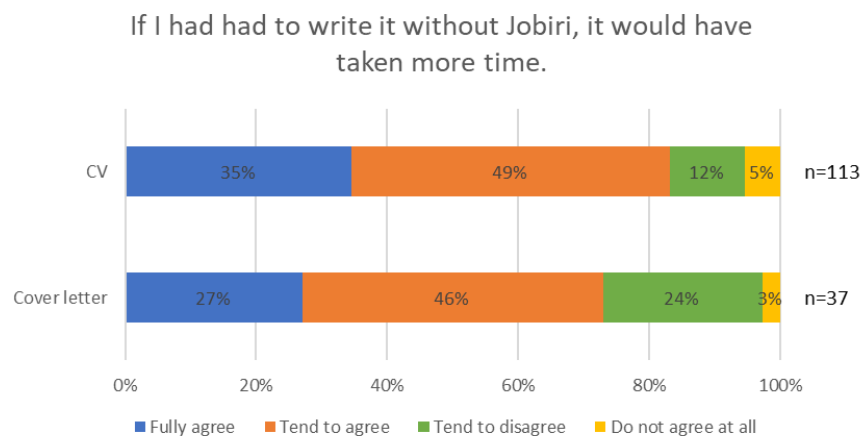
Given the differences in institutions and target groups involved, the testing of the digital tool varied across the three field trial regions, both in terms of objectives and settings: In Berlin, the tool was used a lot during with pupils looking for an apprenticeship; in Sardinia and Thessaly, there was a focus on job-placement. This also led to differences in the individual options of Jobiri being used in the regions: While the CV builder was the tool used most intensively across all regions, the other tools were less used in the Berlin trials than in the other regions. According to practitioners, this was mainly due to the specific needs of the clients the testing was carried out with.

Outcomes and Results

As explained above, the implementation of the digital tool was expected to help clients obtain better, i.e. faster and/or more effective IAG services. The underlying logic chain was the following: The digital tool was to offer a fast, flexible and low-threshold access to services, thus speeding up the search process for clients. Since it had been adapted to the specific regional needs and contexts, the tool was to provide more custom-fit and up-to-date information than other sources. Moreover, the digital tool was to enable clients to independently carry out certain activities which are part of a counselling process (e.g. scanning job offers, writing a CV or a cover letter, learning basic skills for job interviews). This way, it was supposed to offer additional time resources for in-person counselling on topics that cannot be covered by the digital tool. The focal aspect these outcomes refer to is the counselling process which was to be adjusted and improved by employing the digital tool.

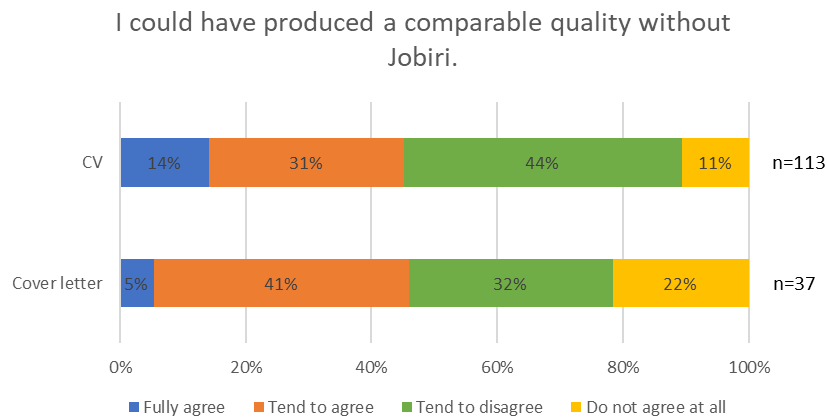
The clients gave positive overall feedback on Jobiri: 76 % of them stated that Jobiri had provided them with useful information for their job search and/or career planning, and 70 % assessed that using the tool had accelerated their job search and/or career planning. Regarding the specific tools that were tested most (CV builder and cover letter builder), most clients stated that the results they obtained from these tools were achieved faster than without the technical support (cf. Figure 3). Also, more than half of the clients were positive that they would not have been able to obtain results in a comparable quality without the tool (cf. Figure 4).

Figure 3: time-saving due to using Jobiri (beneficiaries' perspective)



Feedback survey beneficiaries

Figure 4: quality without Jobiri (beneficiaries' perspective)

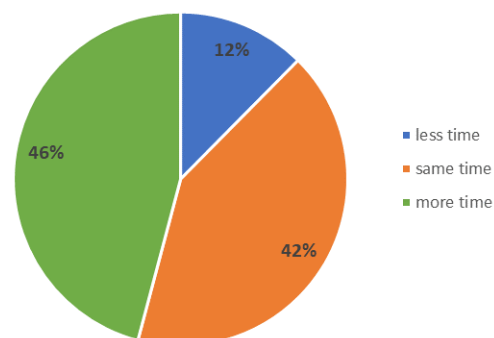


Feedback survey beneficiaries

Users with different education levels exhibited varying platform usage, with higher-educated individuals showing greater adoption. Young users were easier to persuade to test the tool in the first place, but had a high abandonment rate. In order for the tool to reach its full potential in facilitating and speeding up the counselling process, clients had to work with it independently in between counselling appointments. It became apparent that not all clients were willing to do so. Some exhibited a high level of service mentality, expecting the IAG practitioners to select suitable job offers for them or even to compile their applications documents. Using a digital tool in IAG counselling can thus support a process of empowerment and increased personal responsibility. However, this process needs to be guided and supported by the IAG practitioner, adding another task to their list.

This is why practitioners' feedback regarding the integration of the new tool into the counselling process was mixed: While about half of them indeed found Jobiri to support their counselling process, for example by combining much of the information needed for the counselling process in one place, or by enabling clients to do more work on their own, the other half saw little value added and rather pointed out that they had to assist their clients in using the tool. As a result, only a minority of practitioners stated that counselling involving Jobiri took less time than a process without the tool (cf. Figure 5). Here, it has to be taken into account that the testing period was rather short and probably ended at the moment or even before the practitioners had fully familiarized themselves with the tool and integrated it into their counselling process. They had to work out how, i.e. at what point of time and in connection with which activities, the tool could fit into their personal, tried-and-tested advisory process, and then implement, test, and potentially readjust this new counselling process. The practitioners' assessment of the tool might have turned out differently if they had had more time to actually use it in a well-established counselling process.

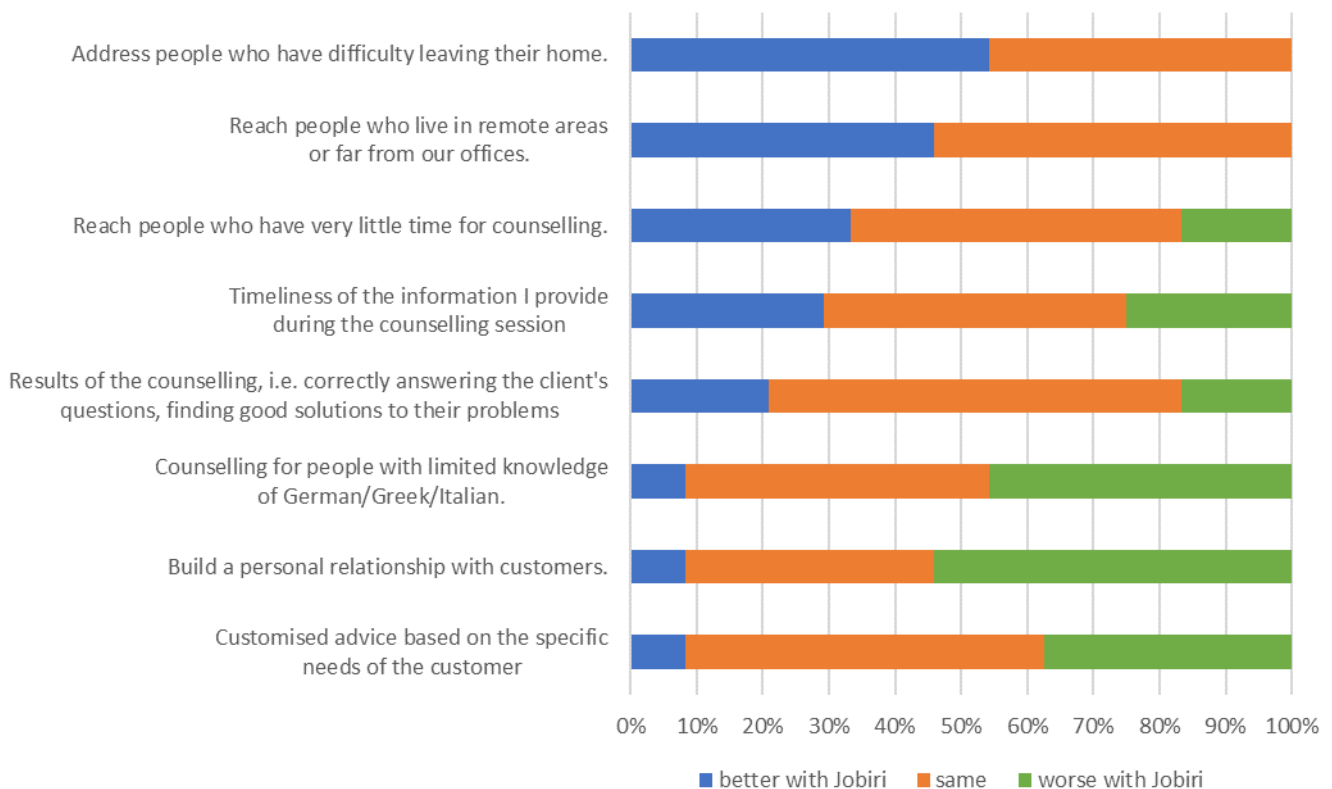
Figure 5: amount of time practitioners invested in counselling process with vs. without Jobiri



Feedback survey practitioners, number of cases: n=24

Despite the fact that Jobiri did not save counselling time (yet), more than half of the practitioners involved in the testing concluded that using the tool has been beneficial for their counselling practice. Notably the fraction of practitioners with a positive overall assessment varied significantly across regions: While in Berlin, a mere 14% of practitioners stated that the integration of Jobiri had been beneficial, it was 64% in Sardegna and 100% in Thessaly. This result is strongly correlated with the practitioners' assessment on how suitable a tool like Jobiri is for working with their clients: In Thessaly, 83 % of the practitioners considered the tool to be well or very well suited, in Sardegna, it was 50%. In Berlin, however, it was only 14 %. Taking into account the different target groups in the different regions, these results imply that Jobiri is better suited for certain types of clients and IAG needs (such as pure job placement) than others (such as solving further problems like language acquisition, housing, health). This is supported by the practitioners' assessment on the advantages and disadvantages of Jobiri compared to in-person counselling (cf. **Figure 6**): They deemed it a helpful tool in certain counselling contexts and settings, especially for reaching people who have difficulties to reach the counselling office, be it due to a long commute, little time resources or other reasons. In other aspects, such as building a personal relationship with clients, or providing counselling for clients with reduced language skills, most practitioners considered the tool to be less effective compared to in-person counselling.

Figure 6: advantages and disadvantages of counselling with Jobiri (practitioners' perspective)



Feedback survey practitioners, number of cases: n=24

Conclusions

The experiment of testing Jobiri, an innovative and internationally recognised ICT tool, in IAG counselling in the three regions of Thessaly, Sardinia and Berlin turned out to be a complex endeavour. Besides the task to adapt the tool, developed and tested for the Italian market, to the specific needs and circumstances in the three regions (including translation), the major challenge was to integrate the tool into the well-established and tested counselling processes of the practitioners involved. The project did offer opportunities for reflection on these processes e.g., in regional meetings taking place on a regular basis. However, practitioners lacked the time to turn these reflections into a proper, well-

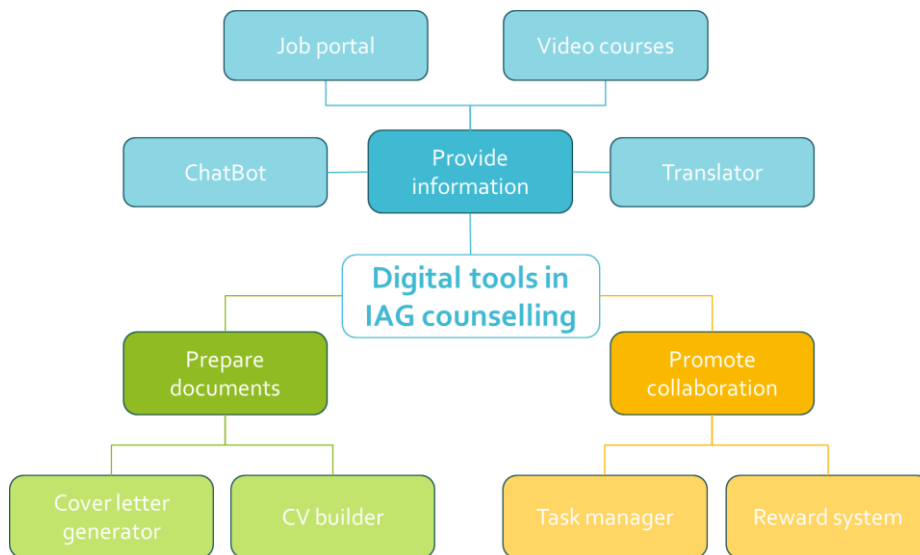
structured process of adjusting their counselling process. For this, initiating an explicit and focused change process within the IAG organisations involved would have been highly beneficial.

The testing of Jobiri also showed that there is no one-size-fits-all tool in IAG: While the tool offered a lot of support for VET or university graduates at the verge of entering the labour market, it was less useful for clients with multiple counselling needs or little digital skills. This experience emphasises the fact that tools need to be chosen or designed with a clearly defined target group in mind. Relevant criteria for selecting the appropriate tool or features could be:

- Which hardware does the target group use? If it is mostly smartphones rather than desktop or laptop computers, a tool should be app-based.
- Which tools or apps does the target group use already? In some cases, it might be possible to use existing tools, even if they are not specifically designed for a certain task, rather than introducing new tools. This holds especially true for target groups with little digital skills and / or openness toward new digital tools. Also, if a new tool is to be designed, closely mirroring the tools clients are already familiar with can facilitate its adaptation and use.
- What are the specific needs of the target group? Trying to develop a tool that covers all potential counselling needs would lead to an over-complex design that is hard to understand and to handle. There have to be clearly defined limits regarding the scope and limits of a tool.

Given these considerations and the experiences from the field trials, IAG practitioners came up with possible features of digital tools that could be of use in a counselling process. Some of their ideas are compiled in the following mind map:

Figure 7: possible features of digital tools in IAG



The practitioners see a high potential for digital tools when it comes to providing information to clients, be it specific information on job openings or more general information on the application process. In the latter case, both a chat bot and video courses can be useful. When combined with a translation software, such videos can be very helpful for clients with limited language skills – not only for informational purposes, but also as a means to further train and improve their language skills.

Digital tools can support clients in preparing documents they need in the application process, such as the CV and the cover letter. However, the rapid progress in text-generating AI and the wide availability of corresponding applications might prove a tool which focusses specifically on the application process obsolete, unless practical ways for a meaningful integration of AI technology can be developed.

Furthermore, digital tools can promote collaboration between the IAG practitioner and the client, e.g. through a task management tool which both, practitioner and client, can access. Giving the client access to the process management, thus putting the process in their hands, can also empower the client. Moreover, implementing a reward system, similar to health apps, can provide an incentive for the client to actively pursue the counselling process.

In conclusion, the field trial of Jobiri offered an opportunity for practitioners and IAG organisations to consider and evaluate the status of digitalisation in IAG, identifying opportunities and potential paths of development, thus confirming the conclusions DG for Employment, Social Affairs and Inclusion drew in their 2020 report on lifelong guidance policy and practice in the EU: “If ICT and artificial intelligence (AI) are to be used effectively in guidance, the guidance community should be engaged in how it is developed and used. A learning community could address the relevant problems to be solved, aligned with the willingness to use technology most effectively. Additionally, an emphasis should be placed on securing funding for the development.”¹⁰

¹⁰ European Commission, Directorate-General for Employment, Social Affairs and Inclusion, Barnes, S., Bimrose, J., Brown, A. et al., Lifelong guidance policy and practice in the EU – Trends, challenges and opportunities – Final report, Publications Office of the European Union, 2020, <https://data.europa.eu/doi/10.2767/91185>.

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