Slovenia: Labour Market Integration of the Long-Term Unemployed and those Not in Education, Employment or Training

Statistical profiling tools for effective targeting and tailoring of services to jobseekers in Slovenia – *Workshop Summary*

November 2020

This work was carried out with funding by the European Union via the Structural Reform Support Programme and in cooperation with the European Commission's Directorate-General for Structural Reform Support (Contract number SRSS/S2019/036).

Statistical profiling, segmentation of jobseekers and targeting of employment services

This report summarises the key issues and lessons learned of a workshop on statistical profiling organised by the OECD together with the European Commission's (EC) Directorate-General for Structural Reform Support (DG REFORM) with the support of the Technical Assistance and Information Exchange Instrument of the European Commission (TAIEX)[1]. The workshop was part of the technical support provided by the OECD and DG REFORM to Slovenia's Ministry of Labour, Family, Social Affairs and Equal Opportunities (MoLFSAEO) on improving Slovenia's capacity to address challenges of long-term unemployment. Technical support was funded by European Union's Structural Reform Support Programme (SRSP).[2]

The workshop consisted of two online sessions on 1st and 8th October 2020 focusing on three key topics of high relevance for Slovenia: (i) the potential benefits of statistical profiling; (ii) the practical challenges and options of implementation; and (iii) best practices for internal and external communication throughout the introduction of the new system.

Experts from the OECD (see OECD (2018[1]) for recent OECD work on profiling tools) and four countries – Australia (Drayton, 2020[1]), Austria (Marte-Huainigg, 2020[2]), Croatia (Fleischer, 2020[3]) and France (Buchner, 2020[4]) – presented in the two workshop sessions, followed by comments from Slovenia and discussions among participants[3] to reflect the experiences of experts and derive lessons learned. Following the first workshop session on 1 October, the OECD send a questionnaire to the workshop participants to gather feedback on the topics covered in workshop.[4] The report summarises best practices and recommendations for introducing statistical profiling at the Employment Services of Slovenia (ESS). The report starts with a brief overview of the current practice and ongoing projects regarding profiling and job-matching tools at the ESS. The insights from country experts during the webinar are summarised next. The report then derives key lessons learned for introducing statistical profiling in Slovenia based on these insights and discussions during the workshop sessions.

[1] TAIEX SRSP events are organised by DG NEAR in agreement with DG REFORM for the benefit of Member States who are receiving technical support through the Structural Reform Support Programme.

[2] The Structural Reform Support Programme is managed by the European Commission's Directorate General for Structural Reform Support (DG REFORM).

[3] Participants included representatives from Slovenia's Ministry of Labour, Family, Social Affairs and Equal Opportunities (MoLFSAEO), the Employment Service of Slovenia and researchers involved in the EU Horizon 2020 project HECAT.

[4] Of the around 50 workshop participants 21 responded to the questionnaire.

Background: Current situation and projects in Slovenia

While the Slovenian labour market appears stable despite the COVID-19 pandemic, servicing long-term unemployment remains a challenge for the ESS. Slovenia looks back on a couple of years of stable labour market growth, following the troughs of the global financial and sovereign debt crisis. By end of 2019, employment rates stood above the pre-crisis peak of 2008 and surpassed both the OECD and EU averages. While labour market conditions deteriorated in 2020, the impact of the COVID-19 crisis until June 2020 was less severe than expected (Banka Slovenije, 2020[1]). The ESS nonetheless had to manage a significant inflow of new jobseekers while social distancing measures prohibited in-person counselling. In addition, long-term unemployment remains a significant challenge. Since the caseload per counsellor is relative high (OECD, 2016[2]) and the service delivery heavily relies on personal exchange, the COVID-19 crisis has exacerbated the difficulties for the ESS to provide adequate services to the (long-term) unemployed.

Currently, Slovenia employs caseworker-based profiling and matching of jobseekers to vacancies, but has engaged on several projects to introduce data-driven tools. Under the current system, jobseekers are assigned to one of three client segments at the first counselling interview: i) Directly employable; ii) Employable with additional activities; and iii) Employable with intensive support. However, an increasingly large share of jobseekers are classified in the lower two categories (86% in 2019), with the result that the segmentation provides little guidance for prioritizing clients and possible services these individuals require. To design a fitting individual support plan in the right time, an accurate assessment of the jobseeker's individual labour market situation is crucial. Therefore, the ESS is exploring options to introduce additional tools for supporting counsellors in their decisions through two projects in the areas of statistical profiling and matching:

- The EU-funded HECAT project, which started in February 2020, is piloting a new tool to support labour market decision-making based on algorithmic techniques as well as a new labour market information platform for clients and counsellors of Public Employment Services (PES). The objective of the HECAT project is to develop and pilot an ethical algorithm and platform to assist the ESS counsellors with their decisions using big data and machine learning techniques. While the goal of HECAT goes beyond profiling, the methodological approach may be similar to that of statistical profiling tools in other OECD and EU countries.
- The ESS purchased licences for several modules of the ELISE software. The software provides an algorithm and platform to match jobseekers with vacancies based on skills, competences, education, background, and capabilities.

Experience and lessons learned from selected countries

Austria – Internal and external communication during design and implementation

Background to the introduction of a statistical profiling tool in Austria

In 2019, the Austrian PES (Arbeitsmarktservice, AMS) piloted a new statistical profiling model called "Arbeitsmarktchancen-Assistenzsystem" (AMAS). The goal is to support counsellors in their decision about the service segments and, hence, services jobseekers receive and programmes they are referred to. The development and piloting of the profiling tool came at the same time as a new service model for the long-term unemployed. As part of the design and piloting phase of the new tool, an internal as well as external communication plan was developed. Internally, the AMS established working groups to monitor and steer the development phase. Prior to the pilot rollout, the board of directors informed all employees and established additional, specialised communication channels (e.g. contact persons, online platforms) and caseworkers had the possibility to test the tool. External communication actively started prior to the

pilot in 2018 through interviews and media articles, as well as a detailed technical documentation of the new tool. The nation-wide rollout of the AMAS was planned for mid-2020. The data protection authority has forbidden the implementation of AMAS in August 2020. Following this, the Federal Administrative Court upheld the complaint of AMS on all points and overruled the decision of the data protection authority. The judicial procedure continues, since the data protection authority has appealed against this decision (Marte-Huainigg, 2020[2]).

Experiences and insights

Despite careful and comprehensive external communication, a heated public debate ensued around ethics of "machine decision making" and data protection. The public debate was dominated by four key topics: First, the fear that an (automated) algorithm decides over the services that jobseekers receive, rather than a caseworker after personal prior consultations. Second, that such pure statistical profiling would lead to discrimination, in particular against women and people with disabilities. Third, that the identification of long-term unemployed (or those in risk of becoming so) would be used to provide fewer services to them. A final critique was a lack of transparency in the introduction of the new system and the profiling tool itself. The challenging experience of the AMS highlights the need to get broad support when introducing new tools that affect counsellors and clients.

Australia – Using profiling to channel jobseekers to online only services

Background to Australia's digital servicing and profiling

Australia pioneered the use of statistical profiling for customer segmentation already in the 1990s. At the same time, the institutional setup in Australia is different from many other countries. Since 1998, the delivery of employment services is fully contracted out. Statistical profiling is used to determine service streams for jobseekers as well as payments to external service providers. The Australian statistical profiling model is based on data from a dedicated questionnaire. Typically, the questionnaire is filled through a personal or telephone interview with the jobseeker. More recently, jobseekers can fill the questionnaire online.

In 2019, the Australian Government started developing the "New Employment Services Model". The new model is being trialled in two regions from July 2019, while the full national rollout is planned only for July 2022 (Department of Education Skills and Employment, 2020[7]). The new model focuses on digital-first services to provide the most job-ready clients with faster, more convenient and more effective services. Under the new model, profiling will be used to channel jobseekers in one of three service streams called "Digital Only", "Digital Plus", and "Enhanced Services". Under the first two service streams, jobseekers can agree to rely largely on digital self-servicing when designing their individual job plan and meet job search requirements. Job-ready jobseekers will remain in online employment services for up to 12 months, but are able to opt out of online services at any time. Jobseekers with more complex needs in the "Enhanced Services" stream are provided higher levels of intensive "in person" case management by caseworkers. An important element to enable this classification of jobseekers is a prior assessment of their digital literacy and skills, which is done with the new Digital Literacy Assessment (DLA). The DLA also highlights jobseekers' training needs to support digital upskilling (Drayton, 2020[1]).

Experiences and insights

With trails of the New Employment Services model already going on, Australia was able to stress-test the new model in the difficult circumstances of 2020, caused first by bush fires (already late 2019) and later the COVID-19 pandemic. This resulted in a doubling of the caseload in the trial regions, with fewer vacancies at the same time and little or no face-to-face interaction with clients. With the trials already running at the time, it was easier to accelerated digital updates and employment services could be more easily scaled up for job-ready jobseekers. While this was a necessary consequence of due

to confinement and social distancing measures, it also aligned with the needs of a new cohort of jobseekers who lost their job as a consequence of the COVID-19 pandemic, who are on average more likely to be digitally literate, motivated to return to work as quickly as possible and prepared to self-manage.

The new online services developed in the trails act both as a referral gateway and service offer for job-ready jobseekers. Over the course of the trials, additional safeguards were put in place to ensure jobseekers are referred to the correct service level. Part of this is a "Digital Service Review" at four and eight months of unemployment to ensure that the assigned stream remains the most appropriate service level for jobseekers.

Croatia – Piloting, practical implementation and integration with existing (IT) systems

Background to "statically-assisted profiling" in Croatia

The Croatian PES (Hrvatski zavod za zaposljavanje, HZZ) started to consider the introduction of a statistical profiling tool in 2015. Caseworker-based profiling, as it is currently the practice in Slovenia, already existed before. The design of the statistical model was contracted out to external experts. The Croatian profiling tool is based entirely on administrative data (i.e. from the unemployment and social security registers). The model predicts the individual probability to become employed within the next 12 month (or to leaving register without employment). On this basis, the jobseeker is classified into one of four risk groups. This classification is displayed to the counsellor prior to the first meeting but can be changed by him. The tool (called "Statically-assisted Profiling", StAP) additionally shows the factors that contribute positively or negatively to the jobseeker's score. It thus serves as an (additional) information for the counsellor to determine the further meeting intensity and activation activities.

Prior to national rollout, the tool was piloted across two regional offices from March to September 2017. This pilot was complemented with a qualitative and quantitative evaluation in order to assess the benefits of the statistical profiling and to further adjust the StAP tool prior to full rollout. For the national implementation, the StAP tool was gradually introduced across all offices in early 2018. This gradual rollout was accompanied by intensive training for each office and support of counsellors (including a dedicated online portal). Training was organised in small groups through a "training of trainers" approach in each office.

The pilot and gradual rollout allowed to adapt the tool based on counsellors' perceptions and use of the StAP. Overall, counsellor feedback was very positive: Seeing the probability of employment "in %" was considered valuable in their work with clients. In 27% of cases, counsellors changed the risk group due to the insight gained during the interview. However, counsellors participating in the pilot highlighted three key issues: First, they noted a lack of time to communicate with clients about the StAP tool (i.e. the new process, results and implications). Second, counsellors felt they needed more time to build up confidence in the use of StAP. Third, the new StAP tool was piloted along with other ongoing reforms that affected the counsellors' work. This sometimes caused that counsellor where overwhelmed with the parallel actions.

Experiences and insights

The Croatian PES drew three key lessons for introducing statistical profiling based on their experience:

- **Piloting**: The importance of conducting a well-designed pilot, which is accompanied by an internal and external evaluation. The evaluation and feedback from staff allowed making changes to the StAP application and its integration with HZZ systems, and further improved acceptance among staff prior to rollout.
- **Training**: The need for rigorous planning of the countrywide rollout and providing comprehensive support measures for counsellors. Training a large number of counsellor in a

short time proved challenging. However, these trainings were important to make counsellors confident with the new tool and to support them in adapting their behaviour during the counselling process. Importantly, trainings should include a focus on changing the attitude of counsellors (especially experienced ones) to regard the tool a beneficial addition to their work. To this end, training needs to emphasise a shift in counsellors' mind-set (not all people seek or need all services) and explain them how to adapt their work tasks to the new tool.

- **IT integration**: The HZZ highlighted that the development of a new tool may require significant start-up resources, in particular for training and IT integration.

France – Using advanced statistical tools for profiling and matching jobseekers

Background and French projects explore uses of Artificial Intelligence for PES

In 2018, the French PES (Pôle emploi) received 20 million Euros of government funding to explore uses of Artificial Intelligence (AI) to improve its service delivery. One of the three pillars of the project was to develop new AI-based solutions to accelerate the return of jobseekers into sustainable employment, which included the "Score a job search" project. The tool provides a score of the success chances a jobseeker has for a stated professional project (e.g. finding employment in a specific occupation). A variety of machine-learning algorithms were compared with respect to their accuracy: The chosen "Neural Network" algorithm achieved a prediction accuracy of more than 75%. In addition to predicting chances for the jobseeker's project, the tool also provides a score for current vacancies in related disciplines or other geographic locations.

In 2020, the management of Pôle emploi decided to delay the full introduction of the tool until 2021. This decision came despite the very satisfactory performance of the profiling model and consensus on the usefulness of the displayed score. A key reason was the management's concern that counsellors and jobseekers would misinterpret the occupation-specific scores. In addition, the management was concerned whether counsellors can provide adequate recommendations to jobseekers without comprehensive testing and training. In the meantime, the model may be used indirectly to provide recommendations for jobseekers on how the success of a given project could be improved.

Experiences and insights

A first key insight from the French experience is that counsellors will need in-depth guidance and training on using the displayed score. The more personalised and complex the outcome of a profiling model becomes, the higher the risks for misleading recommendations. Hence, adequate training and explanation of the tool will increase counsellors' confidence in using the tool and their acceptance of the changes. Pôle emploi also realised the importance of additional trialling to evaluate the adequate comprehension, usage and perception of counsellors. This evaluation could inform adaptions of the tool and the design of trainings.

A second insight is that even very powerful statistical profiling tools are only a complement to the experience and qualitative assessment of counsellors. Even though most PES possess large amounts of data to develop powerful statistical profiling models about jobseekers, these cannot reflect all the aspects that determine human behaviour. Many factors that crucially determine re-employment chances are difficult to be observed or reflected in data (e.g. motivation). In other cases, the required data may be available but cannot be used for privacy concerns (e.g. social network data).

A third insight is that a modern profiling tool should aim to provide more than just a classification of jobseeker's employability. To be most helpful for counsellors, the tool could provide (i) the factors that negatively or positively affect a client's score, (ii) proposals for activation measures to improve the score, (iii) suggestions for vacancies in nearby occupations or locations.

Conclusions and recommendations for Slovenia

Embedding statistical profiling within the overarching PES strategy

Profiling should be embedded in a broader, overarching strategy towards more digitalised and relevant services for jobseekers. In the first place, this requires addressing the important question on *when* and *how* to apply statistical profiling. Two different approaches can be distinguished:

- **Profiling applied by counsellors:** In Austria, Croatia and the pilots in France the statistical profiling tool is used by counsellors during the first counselling interview. Results from these profiling tools can be overridden by counsellors who take the final decision on the segment/group jobseekers are placed into.
- **Profiling applied without caseworker interaction:** In other countries, e.g. Australia, Ireland, and the Netherlands, jobseekers are profiled before any meeting with a counsellor and already assigned to a segment/group. While there is no possibility for counsellors to adjust the initial results of these systems, there are other safe-guards in place. E.g. in Australia jobseekers with a lower score are referred to a more in-depth assessment. Jobseekers placed into groups close to the labour market, but who do not find employment soon usually undergo a reassessment. Profiling without caseworker interaction is also integral (and often necessary) part of digital-first strategies and more comprehensive online services (e.g. Australia and the Netherlands).

Integrating statistical profiling into a broader strategy also supports two other elements for success. First, adequate resources need to be made available to design and implement a comprehensive new strategy, especially for i) piloting/evaluation, ii) IT systems and iii) training of counsellors. Secondly, a broader strategic approach needs to address overlaps and synergies with related ongoing (e.g. ELISE) and new (e.g. HECAT) projects.[5] A well-established – and clearly communicated – link between related projects reduces the workload and confusion for counsellors.

In the survey sent to workshop participants following the first workshop, the majority of participants judged the benefits of statistical profiling as "high" (57%) or "very high" (28%).[6] Furthermore, 86% of the respondents agreed that statistical profiling could be used in Slovenia to channel highly employable jobseekers into online-first services. The biggest challenges for the introduction of such a tool were names as "integration into the daily work" (95%), "caseworker acceptance" (65%), and "too many tools and platforms" (55%).

Involving counsellors throughout, communicating the benefits, and providing guidance

Internal communication should continue throughout the whole design, piloting and implementation process. Such working groups have already been set up for the ELISE and HECAT projects. These mechanisms should be maintained throughout the pilot and rollout. In addition, specific (online) support and feedback platforms should accompany the implementation. Adapting the design based on internal feedback is also key to ensure internal support for changes.

A key aspect of the internal communication is to clarify that statistical profiling will support counsellors' work. Counsellors should be assured that statistical profiling is used to *complement* their knowledge, competence and experience. In addition, internal communication should aim to highlight the advantages of improved decision making for the counsellors, the clients and the common good.

[5] From a technical point, this would call to design a comprehensive digital solution that integrates both projects.

[6] Respondents were asked to judge the benefits of statistical profiling on a scale from 1 to 10, with 10 being very high. 57% of respondents clicked "7" or "8" and 28% respondents clicked "9" or "10".

It is important to provide comprehensive training and guidance for counsellors focussing on practical use of a new tool. The goal of training should be to increase their confidence and acceptance for using a new tool. Training needs to show counsellors how to integrate the tool's outcomes in their work and how to communicate the tool with clients. Allocating sufficient time and funds to deliver training and (digital) guidance tools is important. Insights gathered during a pilot phase as well as the full rollout should be used to update training.

External communication should actively address concerns and engage the public

A pro-active and deliberate external communication strategy is an integral part of successful programme development. It is often not enough to document a tool and process publicly. Rather, policymakers and PES should actively engage in public discussion and aim to shape the public perception of the reform. The goal is to focus the debate around the benefits of leveraging digital technology for the individual and the broader public good. Potential public concern should be actively approached, e.g. about discrimination, data protection and degradation of services. In this regard, external communication needs to focus on the ethical, legal and social implications of profiling rather than technical aspects.

As part of external communication, the public should be actively engaged in the design of the new profiling tool and service strategy, ensuring that concerns and ideas raised by the public are reflected in the policy design will increase public acceptance for the reform. One way to engage the public can be to make the (statistical) code and tool openly available online, thus giving jobseekers (and the wider public) the possibility to assess the tool and its outcomes. Following the first workshop session, participants were also asked about their concerns with respect to the public debate. The issues that the participants think would be most important to address in the context of Slovenia are "data and privacy concerns" (80%), "algorithm makes a decision" (75%), and "potential discrimination" (65%).

Involve all stakeholder and adapt programme design to insights from piloting

The design and pilot of the model should be complemented with extensive and continuous involvement of all potential stakeholders (e.g. social partners, employer/business associations, providers of employment services). Importantly, political and legal bodies need to be involved early in the process to avoid a project shut down at later stages. One approach, as in Austria, is to establish a broad expert advisory panel that guides the development of such a tool.

Ideally, the final design and rollout should be informed by a pilot that includes continued evaluation and stakeholder feedback. All country experts mentioned that the adaptations to the programme design based on the pilot evaluation was a key success factor. Ideally, evaluation combines qualitative elements (e.g. counsellor interviews) with quantitative methods and an impact evaluation. An external, open and well-documented evaluation of the pilot can also increase public support for the new model.

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