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REVIEW OF PROFILING SYSTEMS, CATEGORIZATION OF JOBSEEKERS AND CALCULATION OF UNIT SERVICE COSTS IN EMPLOYMENT SERVICES - IMPLICATIONS AND APPLICATIONS FOR SLOVAKIA

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Review of Profiling Systems, Categorization of Jobseekers and Calculation of Unit Service in Employment Services - Implications and Applications for Slovakia

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EPIC (www.epic.org.au) is one of the largest and most respected non-profit employment services providers in Australia working in the field of employment services and training for the unemployed but with a focus on the disadvantaged such as youth, persons with disability and culturally disadvantaged groups. EPIC is a registered NGO in 5 countries including Australia, Scotland, Czech Republic, New Zealand and Slovakia. It is able to bring this vast international knowledge along with its 24 years of experience delivering quality programs to over 15000 clients annually through its 400+ employees and 55 service centers in 5 countries to ensure this project succeeds.
EPIC in 2012 opened its first branch in Europe, which is registered as Nezisková organizácia EPIC based in Bratislava. EPIC Slovakia is active in the fields of:

- transformation of public employment services
- support of local employment initiatives and social entrepreneurship
- awareness raising about disability employment and marginalized groups employment
- influencing the public debate on the fields of employment and social services and inclusion of marginalized groups

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Abstract

Profiling and jobseeker categorization has been introduced in many OECD countries as a tool for public employment services counselors to map individual barriers of hard-to-serve clients in view of providing them with more targeted services. In recent years, especially statistical quantitative profiling has grown in importance, of which the key advantage lies in more systematic, rigorous and accurate identification of those with high risk of unemployment or labour market exclusion, and in much higher precision of targeting and effectiveness. This study reviews approaches to client profiling in selected countries with the aim to develop categorization of jobseekers by the level of disadvantage and to prepare basis for calculating unit service costs of employment services provision in the Slovak Republic. The report also reviews existing soft profiling system in Slovakia and highlights its limitations. The review helps to see the variability of approaches and a range of possibilities when thinking about most effective ways to developing statistical profiling and jobseeker categorizations. Profiling systems in most countries are not directly connected to the calculation of unit service costs for different categories; these are typically set-up as estimates and then recalibrated in the process of implementation.

Keywords: jobseekers categorization, public employment services, client profiling, Slovakia, unemployment risk, unit service costs

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I. Introduction

Profiling and jobseeker categorization has been introduced in many OECD countries as a tool for public employment services counselors to map individual barriers of hard-to-serve clients in view of providing them with more targeted services. An individualized approach, based on profiling, assessment and preparation of individual action plans, is increasingly considered to be essential to determine which integration approach is most suitable for a jobseeker (Tubb et al. 2013). Profiling has also become integral part of employment services systems which have more extensively relied on subcontracting employment services provision to private providers and are therefore essential in estimating unit service costs per jobseeker treated.

This report is prepared as a background study for the Working Group organized by EPIC neziskova organizacia with the aim to develop categorization of jobseekers by the level of disadvantage and prepare basis for calculating unit service costs for the defined categories.

The objectives of the study are the following:

- *Review approaches to profiling and jobseeker categorizations in selected OECD countries in order to provide examples of approaches to categorizations*
- *Investigate the link between profiling and categorization systems and calculation of unit service costs*
- *Describe current profiling and categorization approach in Slovakia*
- *Review key elements of past profiling exercises conducted in Slovakia*

The review focuses in particular on methodological and data aspects of profiling, jobseeker categorization and unit service cost calculation in other countries. It highlights multiplicity of approaches and options to each task and is focused in a way to generate input for further expert discussion about improving jobseeker profiling and categorization system in Slovakia.

The report is structured as follows. Section II defines profiling and discusses key approaches to profiling and modeling methods of statistical profiling in particular. Section III briefly summarizes profiling approaches across selected range of OECD countries. Section IV outlines benefits and limitations of statistical profiling. Section V investigates the link between jobseeker profiling and calculation of unit service costs of employment services. Section VI reviews existing soft profiling system in Slovakia, while Section VII summarizes past statistically based profiling pilot projects. Last section concludes and proposes avenues for further expert discussion.

II. What Is Profiling?

Profiling can be defined as a customized expert system and a diagnostic tool to identify clients' risk levels. It can be based on quantitative statistical approaches or qualitative methods (structured interviews, capability tests), or their combination. Profiling can be

defined as a systematic (and regular) process based on client characteristics used to identify jobseekers' chances of finding a job in order to design corresponding intervention strategies (Konle-Seidl, 2011). International evidence (e.g. France and Germany) shows that profiling is used to determine the nature, timing and level of intervention.

The aim of profiling is better targeting of employment policy measures, and human and financial resources. Profiling is usually used to identify early who is in need of intensified help and "expert" services, while ready-to-work jobseekers are provided much less assistance, in order to use the limited resources in a most efficient way. An alternative way to allocate individual to services and interventions consists of tracking the outcomes of the services and to match them with the jobseekers characteristics in order to figure out which services are likely to be the most efficient for jobseekers with specific characteristics (Duell and Kurekova 2013).

Soft approaches to profiling are also widely used. These include ***eligibility rules*** (individuals re channeled to intervention tools based on certain legally defined eligibility criteria), ***caseworker discretion*** (subjective assessment by employment advisers), and ***screening*** (approach when caseworker attempts to score jobseekers employability based on psychology techniques) (O'Connell et al. 2012).

Statistical quantitative profiling has grown in importance in recent years. A key advantage of customized statistical profiling approach is more systematic, rigorous and accurate identification of those with high risk while it also allows for ranking of individuals by probability of long-term unemployment. Compared to soft methods, statistical profiling leads to a more objective assignment of clients to different measures and has been found to have much higher precision of targeting and effectiveness.

Statistical profiling is based on a regression model which measures probability of remaining unemployed, becoming long-term unemployed, exhausting benefit or probability of finding employment within the next three, six, etc. months. Two general estimation strategies are being used in statistical client profiling: logit/probit models and models analyzing duration of an event (e.g. unemployment). Majority of countries tend to favor the first approach, including USA and Australia which have pioneered it (O'Connell et al 2012).

In an estimation model, target variable (dependent variable), such as risk of LTU, probability of job entry, is regressed on a set of client individual characteristics (gender, age, education, occupation, work experience, program participation, country of birth, place of residence, etc.). In addition to supply side, a model should include demand side factors, such as regional or municipal unemployment rate. Ideally, soft factors, such as motivational aspects, health condition, social networks also should be included, as they can form crucial barriers to labor market inclusion of disadvantaged groups in particular (Konle-Seidl, 2011).

Survivor functions and plots of probability scores can be used to determine cut-off points and establish categorizations of jobseekers (O'Connell et al 2012: 144; Dahlen, 2013). It is

crucial for the quality of the model that longitudinal administrative data are available (Konle-Seidl, 2011).

III. Profiling Practice: International Overview

The method of using statistical prediction as input for decision-making on employment services was developed during 1990s in the US and Australia. Hard-data statistical profiling is compulsory tool for caseworkers in the US. While this is not the case in most European Public Employment Services (PES), a form of profiling has become mainstream practice in several countries. Among countries which are currently using or have in the past used a statistically-based profiling approach are: Australia, Denmark, Germany, Finland, France, Ireland, the Netherlands, Sweden, and the USA, among others.

Profiling aims and approaches have taken different forms across the countries which rely on complex statistical methods to determine risk of becoming long-term unemployed and to distinguish different groups of clients in order to better target appropriate intervention. Importantly, across Europe statistical profiling is usually not the only tool for profiling jobseekers, but to a varying extent also structured interviews and checklists are used by the caseworker (see Table 1).

Below are provided selected examples of how profiling is used and what data sources and analytical approaches it has been built on. The review helps to see the variability of approaches and a range of possibilities when thinking about most effective ways to developing statistical profiling, categorization and calculation of unit service costs in Slovakia. The review includes established and functioning profiling systems (Australia, Germany, Finland), more recently developed systems (Ireland), as well as reports which have conducted feasibility studies for countries which might be implementing statistical profiling methods (UK, Czech Republic).

Australia. In Australia, Job Seeker Classification Instrument (JSCI) has been applied since 1998 and was reviewed and refined in 2009. This profiling tool is mandatory and has gained a fundamental role in employment services system. It is used for assess jobseeker's risk of becoming or remaining long-term unemployed at the registration phase. A logistic regression model estimates the relative weight of points of 18 risk factors: age, gender, education, language, disability, work experience, English proficiency, indigenous status, country of birth, access to transport, contactability, living circumstances, etc. along with a range of personal characteristics which are gathered and evaluated by caseworker at the interview phase. The estimation is based on administrative data and produces a relative and not an absolute level of disadvantage, taking into account statistically significant factors on risk of unemployment. This then allows referral to the most appropriate level of intervention, within the budget parameters determined by the Australian government. All jobseekers must have active JSCI in order to be directed to a given stream, with the exception of Stream 1 Limited participants (Australian Government, 2012b). Based on JSCI,

jobseekers are categorized into four streams whereby Stream 4 contains jobseekers with the highest level of disadvantage. All following activities and participation requirements are detailed in an Employment Pathways Plan (EPP). This is an individual agreement negotiated between a customer and his or her job services provider or Centrelink (Australian PES). Unit service costs/payments are determined based on a Stream and a set of additional criteria, such as remoteness and length of intervention/work with the client (See Table 2).

Czech Republic. The Czech Republic does not use statistical profiling tools, but studies exists which have done a thorough overview of international practice and have used administrative data as a source of calculation of risk of unemployment. These studies could be useful for our discussion about the Slovak system, as data features and systemic opportunities and barriers are likely to be similar.[1] Calculations were done on data from Ostrava labor office from 2006. Model estimated probability of finding employment within 12 months and reached fairly high level of accuracy (78.5%) with administrative data alone (Soukup, Michalicka, Kotikova 2009:18). Inclusion of other factors gained through targeted questionnaire was found to further increase model prediction; these factors included: subjective assessment of one's own chances of finding a new job; promise of a new job; and willingness to change one's area of work. Recommendations included development of series of local models, rather than one general model (Soukup 2011).

Denmark. "Job Barometer" as a standardized profiling tool was introduced in Denmark in 2004. The profiling model serves as an initial screening device for identifying potentially long-term unemployed workers. It is combined with in-depth interviews by caseworkers with those asserted to have a high risk of LTU of six months. The statistical component of the profiling system consists of a duration model for the time spent in unemployment, and was built according to a model which had been implemented (but since then repealed) in New Zealand. The model was estimated on 120 subgroups, stratified according to age, gender, benefit eligibility, and region of residence. The data used for estimation were administrative data of the entire inflow into unemployment in Denmark from January 1999 to June 2003 (for full model specification and variables used see Rosholm et al. 2004).

The Job Barometer calculates the probability of finding employment within the next six months based on the customer account information which provides the placement officer with an overview of the labour market opportunities. The results are translated into a traffic light colour code for good, average and poor chances. The Job Barometer is meant to standardize the assessments made by different staff members and organizations and in this way to facilitate communication and an exchange between the partners (Rudolph and Konle-Seidl, 2005).

[1] Relevant links: Soukup 2006: http://praha.vupsv.cz/Fulltext/vz_202.pdf ; Soukup, Michalicka, Kotikova 2009: http://praha.vupsv.cz/Fulltext/vz_287.pdf ; Soukup 2011: http://www.cejpp.eu/index.php/ojs/article/view/61/0

Finland. The Finish statistical risk profiling was introduced in 2007. It uses administrative data about each unemployed person and includes variables such as unemployment history, age, place of residence, previous occupation, citizenship, education, reason for termination of previous employment and data about possible disability. The tool uses coefficients produced by econometric specification which estimates the risk of prolonged unemployment (not the exact duration of long-term unemployment). Profiling results can be used by caseworkers in their interaction with clients, but caseworkers have been generally reluctant to take-up this tool and traditionally use their own assessment to determine appropriate intervention. This is in spite of the fact that the model has been very effective (90%) at estimating the likelihood of long-term unemployment (over 12 months). Generally, clients have responded positively when told their risk of long-term unemployment as it provided them with more realistic perspective and incentive to be pro-active (Weber 2011).

Germany. In Germany, the Four-Phases Model (4PM) includes a software-guided assessment on client's potentials underpinned by databases on personnel and social skills. The German PES currently applies 6 jobseekers categories, with a differentiation of long-term unemployed into three groups: "complex profiles" include development profile, stabilization profile and support profile (Figure 1).

A specific software tool (VerBIS) is used as a tool to help the case workers to structure time and reminding them of the steps they need to take. It so helps them to standardize, monitor and implicitly steer service delivery. Further, the VerBIS also allows to link information on regional labor market opportunities to client profiles based on competences and enables two-way matching of jobseekers to vacancies (Konle-Seidl, 2011; Weber, 2011).

Figure 1: Jobseeker profiles in Germany

Client profiles	Market profile	Activation profile	Promotion profile	Develop-ment profile	Stabilisation profile	Support profile
Exit into	regular LM ≤ 6 months	regular LM ≤ 6 months	regular LM ≤ 12 months	regular LM >12 months	improve employability >12 months	improve employability >12 months
Prognosis	Close to the labour market			Complex profiles		

Source: BA

Source: Konle-Seidl, 2011, p. 10

Ireland. Ireland belongs to countries which have developed profiling model relatively recently. The model is based on a unique data collection conducted in 2006 with a specific intention to develop the model. All individuals registering into unemployment registry during a period of 13 weeks were included in the questionnaire and then followed for additional period of time to determine factors conditions leaving or staying in the registry/benefit take-up until 65 weeks since the registration. In the actual model, logit model measuring risk of remaining unemployed for longer than 52 weeks (1 year) is tested. When considering modeling strategy in Ireland, logit/probit models versus models concentrating on duration were considered. Given the policy focus on dealing with the rising problem of long-term unemployment, probit model was selected. An important benefit of such model is that it provides marginal effects or probability scores easily interpreted by PES staff (O'Connell et al 2012). The score produced by profiling model is used to identify job seekers requiring immediate intervention.

Among variables collected and tested are: educational attainment; literacy/numeracy levels; health; access to transport, and un/employment history, participation in public-sector job scheme (CES scheme), willingness to move for a job, benefit claims, spousal earnings, availability of own transport, geographic location (for full list of variables, model specification, and analytical tools used see O'Connell et al. 2012, p. 146). The results of the model found that factors *increasing probability of remaining on Live Register (unemployment register) or on welfare dependence are*: Age, Children, Made Claim in Last 5 Years AND had been Signing On for 12+ Months, On CES for 12+ Months, Number of Claims (females only), Job Seekers Assistance (females only), Literacy/Numeric Problems, Casually Employed and Bad Health. *Factors increasing probability of exiting to the labour market are:* education, recently employed, would move for a job, own transport (males only), Job Seekers Benefit, married and spousal Income (males only - opposite for females).

Sweden. Assessment Support Tool (AST) has been recently implemented in Sweden. Binary logistic regression is used (probit model) to estimate probability of becoming long-term unemployed (6 months) relying on PES administrative data. Variables used include: age, country of birth, functional impairment, education, months of registration, last unemployment spell duration, work experience in occupation, skills in occupation as well as local unemployment rate. The AST groups clients into four groups distinguished by easiness of quickly finding a job (Group 1 most likely, Group 4 least likely to easily find job and hence in need of early intervention). For Groups 1 and 4, caseworkers are advised to follow the recommendation of the assessment tool, while for groups 2 and 3, the assessment is less decisive and the employment officer assessment becomes more important (Dahlen, 2013).

UK. United Kingdom does not currently use statistical profiling, but detailed analysis and pilot study has been conducted by Department for Work and Pensions on development of UK jobseekers' classification instrument (Matty, 2013). The pilot study tested different models based on combination of varied data sources, and followed to a large extent Australian experience in jobseekers' classification. Pilot included customized collection of

data by means of telephone survey of new claimants in 2010 (outsourced to external contractor), which were merged with available administrative data.[2] The best model combined "attribute variables" (individual level factors including demographic variable as well as previous earnings, access to commuting or drivers license), "attitudinal variables" (questions included: getting a job is more down to luck than to effort you put in; I am confident I can get a job within 3 months; having almost any job is better than being unemployed) and "administrative variables" (type of claim, number of days on benefits, share of public sector employment in the given area, average house price). A number of predictive models were built and tested, but binary logistic regression was determined as the most useful and precise estimation approach. Other methods considered were: artificial neural networks, survival analysis (Cox proportional hazard rate regression) and decision trees (Matty, 2013:26). Simple categorization of two categories only based on profiling results was suggested: high-risk and low-risk clients, making a fairly efficient cut-off point at 30%.

IV. Benefits and Limitations of Profiling

In Australia and USA where statistical profiling has been implemented for close to two decades, evaluation studies are available. These show that profiling is able to create gains in terms of employment outcomes and to save resources. Evaluations of profiling effects in selected US states found that the usage of profiling reduced the duration of receipt of unemployment insurance benefits among the claimants, leading to real cost savings. A significant impact on early earnings of beneficiaries was also measured (Konle-Seidl, 2011: 14). Rigorous evaluation of the effects of profiling in the EU countries is so far not available. It is important to stress that profiling will not be effective unless accompanied by a range of meaningful ALMPs (O'Connell, 2012).

In spite of its positive effects in countries which have pioneered profiling systems, introduction of statistical profiling to every-day caseworker practice has been more problematic in the remaining countries. The key reason is that PES staff tends to oppose reforms introducing statistical profiling tools and tends to use such tools only to a limited extent. A key issue to tackle in the case such tool is to be introduced is its acceptance by PES personnel, which can be partly tackled by involvement of PES staff into development of the model to give them a sense of ownership (Konle-Seidl, 2011; Weber, 2011). Important criteria for setting up the model is accuracy and simplicity – many models developed in the past were complex and required substantial documentation leading to further administrative burden and workload of PES staff, which in turn hampered acceptance and successful implementation of the models into everyday practice (Weber 2011). In the other hand, when evaluating overall costs of statistical profiling versus other methods (face-to-face intensive interviews), Soukup et al. 2009 conducting feasibility study for the Czech

[2] Questionnaire available in Matty 2013: Annex

Republic profiling exercise found that total costs of statistical profiling are likely to be much lower (p.17).

Profiling has some limitation anchored in the methodology as such. First, low degree of accuracy of estimation can be a problem and collection of additional data to calibrate the model might be too costly. However, many models using administrative data alone found high levels of accuracy, including Czech model (Soukup et al. 2009). Second, profiling categorizations are affected by business and economic cycle. It is therefore important to update the model with up-to-date data and to calibrate the model to changing external conditions in local labor markets. This further highlights the importance of inclusion of demand factors into to model.[3] Additional challenges to statistical profiling are policy changes, such as benefit eligibility criteria. These changes might be affecting results based on administrative data where policy effect is already shaping employment outcomes of program participants. This needs to be considered when building analytical and predictive model. These issues can be dealt with and can be incorporated into statistical model (O'Connell et al. 2009, 2012; Soukup 2011).

V. Profiling and Calculation of Unit Costs of Employment Services

Direct link between profiling and valuation of unit service costs is rarely present. Actually, only a few countries directly use profiling and categorizations as a tool to estimate unit service costs (Table 1). Profiling directly feeds into estimation of unit service costs in Australia (Table 2). USA is another country where profiling is used as automatic determinant of service allocation (Weber 2011). Among European countries, in Germany, France, and Sweden, outcomes of profiling determine how services are set-up and affect, for example, frequency of client contracts, interviews or access to re-employment services. In these countries is the link between needs assessment and resource allocation most direct, but the final word over resources and interventions is granted to caseworkers.

[3] The Irish modeling team has suggested recalibration of the model every 3 years. See **O'Connell et al 2009**

Table 1: Use and purpose of profiling in selected countries

Country	Type	Purpose	Timing/ regular revision	Linked to action planning	Linked to resource allocation
AUS	• JSCI (= Jobseeker Classification Instrument) Statistical model based on client survey + professional judgment	• Diagnosis "Prediction of LTU risk" • Risk scores Sorting into 4 streams	• Registration for benefits • Repeated at certain intervals	• Referral of jobseeker to stream services	• Basis for funding levels for private providers
DE	• IT-based questionnaire /potential analysis • First phase within "Four-Phase Integration Model" (4PM)	• Diagnosis "LM distance" • Customer streaming; 6 client profiles • Use of profiles for automatic matching • Common framework for insured and non-insured jobseekers	• Initial face-to-face interview • Regular follow-up • Revision of integration agreements every 6 months	• Service strategies according to client needs	• Frequency of client contacts for UB II clients
DK	• Caseworker judgement	• Diagnosis "Job search capacity" • Segmentation: 3 match groups • Common framework for insured and non-insured jobseekers	• Initial face-to-face interview • Follow up every 3rd month/ every 4th week for sickness benefit clients	• No direct link • Statutory activation according to length of UE and age	• No relation
FR	• Use of statistical profiling + caseworker expertise	• Diagnosis "Distance to LM/ LTU risk" • Segmentation: 3 client groups • PPAE for UI and RSA clients	• Initial interview Regular follow up • Interview frequency: every month (target)	• Caseworker chooses services according to the diagnostic	N° and frequency of interview according to client group

NL	• Use of different qualitative tools (e.g. chance-explorer or competencies test) for insured UI and disability clients (UWV)	• Diagnosis: "Job search capacity"	• Intake interview • Qualified intake after 3 months • Regular review of integration agreement	• No direct link • Service provision intensifies according to length of UE	• No
SE	• Pilot project for insured jobseekers • Statistical profiling based on longitudinal administrative data + caseworker judgment	• Diagnosis "Prediction of LTU risk (LTU = 6 months)" • Customer segmentation: 4 risk groups • Better targeting of services • Equal treatment	• Initial face-to- face interview	• Linking services to client (risk) groups is intended	• Planned to be used for resource allocation process in 2012 and as basis for funding of private providers
USA	• Statistical profiling for UI claimants based on administrative data	• Diagnosis "Benefit exhaustion" • Risk scores	• Registration for benefits	• No	• Results determine access to any form of re-employment services

Source: Konle-Seidl, 2011: 7-8.

A key reason for a lack of direct link between streaming based on profiling and unit service costs is differential development of outsourcing of employment services to private providers, which is perhaps the key motivation for measuring costs of labor market inclusion of a given jobseeker 'type'. Another possible reason is an end purpose for which statistical models are used. In Germany, for example, an important focus of profiling is that it is used as an input into computer assisted matching of jobseekers to job vacancies.

Information about how unit service costs were determined is rather limited and it is difficult to establish how the given sums were formulated. Unit service costs are conditional on the overall institutional design and national conditions (labor market performance, network of providers, type of measures, overall budget, objectives, etc.), and might reflect also the degree to which public body shares services with private providers. Credit transfers/pricing of services is often determined on the basis of experience of public service providers with treatments of clients. It is then inevitably recalibrated in order to incentivize appropriate behavior of stakeholders (service providers) and to ensure better overall efficiency and effectiveness of employment services delivery (Finn, 2011).

Employment services contracts may be designed in different ways to procure the services required by different groups. For detailed and comprehensive discussion on design choices

in market competition for employment services for the long-term unemployed see Struyven (2004). We can generalize three contract types (Finn, 2011; Struyven, 2004):

- *Cost-Reimbursement Contracts: P*roviders receive payments for the expenses they incur. The overall costs generally must stay within a budget approved during the procurement process. Some cost-reimbursement contracts specify performance standards, but payment is not dependent on meeting them.
- *Fixed-Price Contracts:* Fixed-price agreements establish a set fee for subcontractors, regardless of performance or the actual cost of providing services. As with cost-reimbursement contracts, the contracts may include performance measures, but a contract's performance does not directly affect payments. Advantage of this type of contracts is predictability of income.
- *Outcome or Performance Based Contracts:* Under these contracts, providers are paid by results with outcome based contracts making some or all of the payment dependent on successful job placement. Performance contracts specify a wider range of measures which may include job outcomes but also other factors, such as assessments made, action plans agreed, and so on.

Australia

The available documents about Australian system do not disclose methodological guidelines for establishing credit amounts for stream categories. However, it can be seen that significant differences exist between Stream 1 and the next three Streams. Initial credit allocation for Stream 3 and Stream 4 is the same, but the latter can be further increased in time. Credit amounts are typically provided at commencement of the intervention (??) and represent total sum paid per jobseeker. It is unclear whether given credit is transferred to a service provider for each client formally taken-on or only for clients which are treated by the service provider.

Table 2: Employment Pathway Fund (EPF) credit amounts and timing for Stream Services

Service	Participant Details	Credit amount Non-Remote ESA $	Credit amount Remote ESA $	Credit trigger
Stream 1	All Fully Eligible Participants	11	19	At payment of second 13 Weeks Service Fee
Stream 2	All Fully Eligible Participants	550	935	On Commencement
Stream 3	All Fully Eligible Participants	1,100	1,870	On Commencement
Stream 4	All Fully Eligible Participants	1,100	1,870	On Commencement
	If a Stream Services Review states that a further 26 weeks of Stream 4 assistance is required following the first 52 weeks	550	935	After the recommendation has been made

Service	Participant Details	Credit amount Non-Remote ESA $	Credit amount Remote ESA $	Credit trigger
All Streams	Additional amount credited for where Centrelink has indicated the participant requires interpreter assistance	1,000	1,700	On Centrelink notification
Work Experience Phase	All Fully Eligible Participants	500	850	On Work Experience Commencement
	Additional amount credited for the participation in a Full-Time Work for the Dole activity, payable once only during a Work Experience Phase	350	595	As advised by DEEWR

Source: Australian Government (2012a). (Annexure C Table 4, DEEWR (2011) Employment Services Deed 2009-2012)

Table 3 shows actual credit amounts paid per streams and number of transactions and show that average debit used for Stream 1 clients are far higher than intitial credit estimation. Stream 2, 2 and 4 largely fall within the credit band provided for non-remote and remote USA.

Table 3: Average credit paid from EPF and number of transactions per stream, December 2012

Stream	Average debit per job seeker $	Average transactions per job seeker Number
Stream 1	245	2.0
Stream 2	778	4.3
Stream 3	1,150	6.2
Stream 4	1,398	7.2

Source: DEEWR administrative systems

Source: Australian Government (2012a).

Ireland

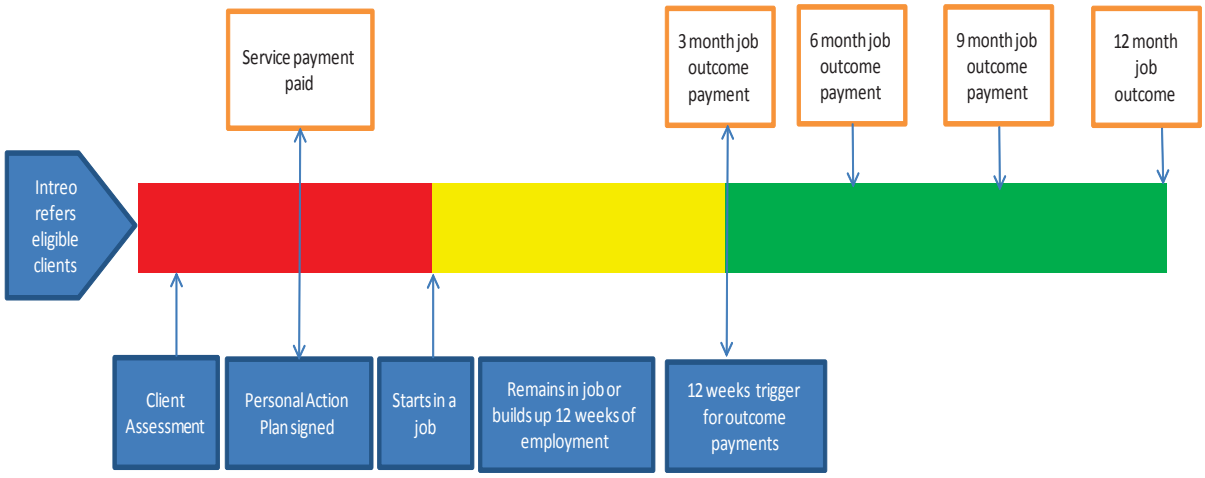
Contracting model called JobPath has been recently proposed in Ireland **(**Kennedy, n.d.) and is in its initial phases of onset.[4] It is specifically aimed at long-term unemployed and those most distant from the labor market and will be delivered by third party providers of

[4] See also: http://www.welfare.ie/en/Pages/JobPath.aspx

employment services. It will complement (not supplement) Intreo (similar to Central Labor Office) and local employment services (LES), in order to increase employment services capacities which have grown excessive at the outcome of crisis impact on Irish labor market and surge in long-term unemployment in particular.

The key design features include that the country will be segmented into a number of contract areas (3-5) and providers will be contracted within these areas for defined period of time. Payments are to be outcome based (Figure 2) and delivered gradually: 10% after production of an individual action plan and 90% following sustained job placement. Target group will be long-term unemployed jobseekers composed of mix group referred to providers based on outcomes of statistical profiling system. Individual client will be working with the provider for 12 months, after which he should turn back (if necessary) to public employment structure.

Figure 2: Provider payment approach



Source: Kennedy (n.d).

The JobPath Service Guarantee will apply "Grey Box" service delivery approach (Kennedy, n.d.). In essence, Department of Work and Pension will specify minimum basic requirements (e.g. personal action plan, regular face-to-face meetings, minimum level of in-work follow-up). Fulfillment of minimum service guarantee is essential qualifying criterion for inclusion of provider into tendering process. During the tender phase, providers can specify additional services which will be evaluated against price offers.

Netherlands

Brief overview of the Dutch subcontracting system provided by Finn (2011) suggest that key criterion of determining service delivery costs for private contractors is the length of unemployment (Table 4). Interestingly, average price for interventions of clients unemployed less than 3 months is fairly high (€ 1750), which reflects priorities on early

intervention and prevention of long-term unemployment. The contract price for long-term unemployed is varied and it appears that it is determined on the basis of public procurement outcomes.

Table 4: Average service delivery price in the Netherlands

People on jobseekers allowance/at risk of becoming unemployed All service delivery must be combined with a serious job intention, where possible a job guarantee. Purchase possible until 1 October 2011	**Service delivery and average price**
Clients either at risk of becoming unemployed or already unemployed up to 3 months	Service delivery with a run time of less than 3 months (Competence Test Centre, International Diploma Evaluation, Accreditation of Informal Learning, short term guidance courses or vocational training courses shorter than 3 months Average price: € 1,750.-
Clients unemployed between 3 to 12 months: exclusively for clients WIA <35% (Law on Work and Income provision according to the Capacity to work) and clients in poignant circumstances. Matching fee:	In addition to the above, service delivery with a maximum run time of one year) (IRO, vocational training courses, innovative service delivery). Average price: € 2,500 - Work based training: € 1.610 - and a maximum of one period of after-care ad € 1,000-
Clients unemployed 12 months and longer	In addition to the above, PAWA (Befitting Job Offer Programme, no cure / no pay) Varying prices (Contract through national tender)

Source: Finn, 2011.

VI. Status Quo in Slovakia: Soft Profiling and General Categorization of Clients

Soft profiling tools and rather general jobseeker classification is currently used by Public Employment Services in Slovakia. Following Austrian example, Three-zone system was introduced in 2009 based on categorizing clients into three types based on the level of disadvantage and by adjusting the character and intensity of intervention offered by PES based on the assigned level of disadvantage. Changes to the system and the categorization process and criteria were introduced in 2013, in parallel to a major reform of the Act on Employment Services no. 5/2004 (see Duell and Kurekova 2013 for details of the reform). The overview of the current system is therefore divided into two time periods.

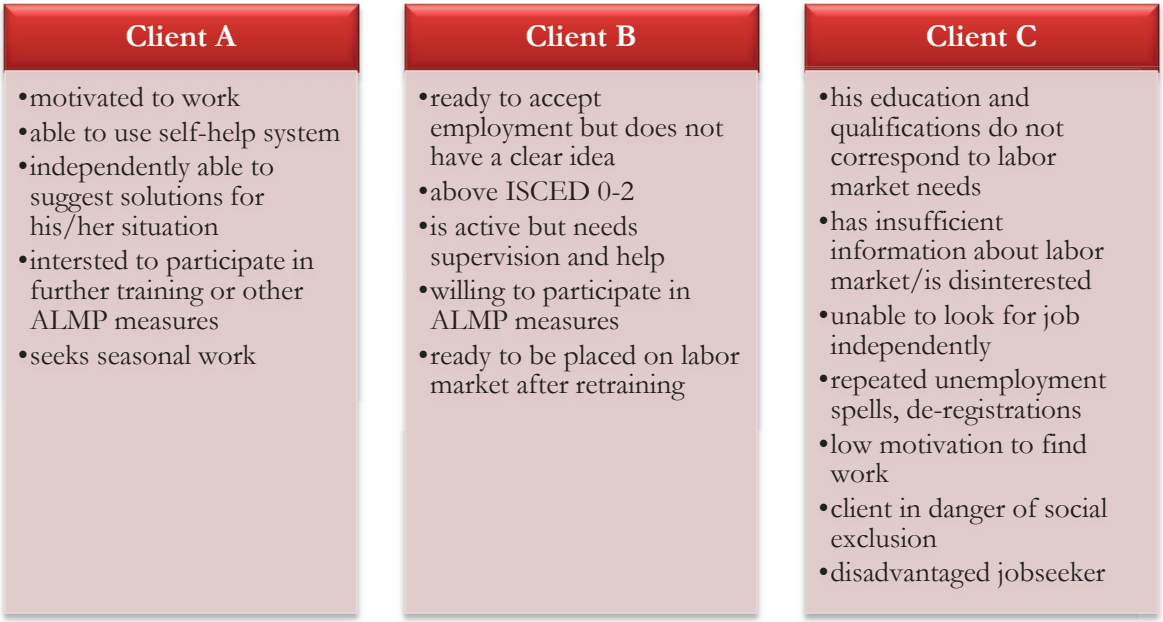
2009-2013 profiling and categorization

In 2009 a new approach to activation was introduced with the aim to better target the PES resources to disadvantaged clients: Three-zone system.[5] It is based on the division of PES services into three types (I-III) and profiling of jobseekers into three categories (A-C). The profiling of all clients is done by the first-contact officers who work in Zone I (formerly information-consulting units). They collect application to jobseekers registry and this data is then used for client profiling into categories. In Zone I clients have free access to internet, and facilities are at their disposal where they can prepare and print CVs or job applications. Zone II offers complex mediation and counseling services with cooperation of agents for employment, i.e. staff that collects vacancies but also actively communicate and interact with local employers, including visits to companies. A system was established where teams consisting of consultants and agent are composed to enable a closer interaction between jobseekers and labor market opportunities. Zone III offers specialized counseling services and works closely with clients to place them on the available measures of active labor market policy, as requested by the client or suggested in the preparation of Individual Activation Plans (IAPs) (for more see: Duell and Kurekova, 2013).

Complex client profiling takes place in Zone I where caseworkers should carry out the process as soon as possible. Clients are placed into three categories (A, B and C) which mark an expected difficulty of client's placement on the labor market and take into account also the degree of personal motivation to work (Chart 3). Profiling is discontinued after 7 months since the start of registration of unemployment status. Clients A are typically served in Zone I while clients B and C are referred to Zone II and III. According to the profiling system, disadvantaged jobseekers (as defined in Act on Employment Services in effect during 2009-2013 period) are placed in the hardest-to-place category of jobseekers (client C type) and are offered specialized counseling.

[5] Slovak Three-zone system was inspired by Austrian example. The *Austrian* PES applies a three zone concept: info-zone just for information, service zone to register and get basic services and the counseling zone for more intensive support where clients who are still unemployed after 3 months are referred to receive more intensive case-management services.

Figure 3: Main criteria for client profiling (selected)



Source: Duell and Kurekova, based on materials from CoLSAF[6].

Certain subcategories of disadvantaged jobseekers have to be offered an individual action plan (IAP) by the labor office within four months since the jobseeker was registered. These groups include jobseekers below 25 years, above 50 years, out of the labor market for family care reasons and long-term unemployed for over 24 months. It is mandatory for these categories of disadvantaged jobseekers to accept the offer to prepare the IAP and it becomes a binding document for the labor office and the jobseeker. IAP is built on the basis of the assessment of achieved level of education, qualifications, personal predispositions and abilities, and experience of jobseeker (so called 'anamnesis'). It outlines process and time line of measures that should be taken in order to improve individual's chances in the labor market. The counselor monitors the progress on the mutually agreed plan and adjustments can take place during previously agreed meeting schedule. However, the approach to the IAP preparation is currently rather formal. In the parts of the country where a large share of unemployed are disadvantaged jobseekers and labor market performs poorly, IAPs are often considered an administrative burden by the staff rather than a tool for labor market integration. The practice of IAP preparation lags behind in more specific efforts to link it to improvement of client's skills, which is the core principle of the IAP approach for example in the UK.

Profiling and categorization since 2013[7]

Reform of the public employment services carried out in the 2013 amendment of Act on Employment Services has been also reflected in the changes in the zoning system and

[6] Internal Norm no. IN – 051/2011, Ustredie prace, socialnych veci a rodiny, Bratislava.
[7] Based on: Internal Norm no. IN – 042/2013, Ustredie prace, socialnych veci a rodiny, Bratislava.

profiling. Introduction of an unified IT system for collection and processing of administrative data and development of elements of e-services further shape the way how client counseling is carried out and how profiling and categorization are used.

Three-zone system has been in principle kept and characterizes a set of services and types of information gained and organized in these zones. Zone I is the first-contact zone where registration of persons entering unemployment registry is processed and where basic information and counseling is done for new clients (as defined in section 42 of Act on Employment Services). In this zone, clients are encouraged to develop their profile online in the custom-made web portal (www.istp.sk), but the creation of online profile is not mandatory. In principle, the online profile is to be used for matching of client's skills to available vacancies. Zone II is used to profile client further to those with and without disadvantage based on a defined set of criteria, and to offer further counseling services. In Zone III, active labor market policies are offered and specialized counseling services provided.

Client profiling under the new system is organized in two stages. In Zone I or II, two categories of clients are defined: **without barriers to labor market** and **with barrier to labor market**. Clients with barriers to labor market are explicitly defined and include these categories: *youth below 18 y.o.; people above 18 years without finished lower-secondary education; young below 29 years irrespective of the type of their first paid employment; and people above 45 years with at least higher secondary education*. This clearly is a shift away from the previous system where a more comprehensive set of factors were considered to assess disadvantage and to propose appropriate treatment and intervention. These factors included soft factors, motivational elements, social exclusion aspect, or capabilities to act independently. Moreover, disadvantage on labor market as defined in the Act on Employment Services was directly considered in the assessment of barriers and soft profiling. The 2013 amendment of Act of Employment Services redefined the categories of disadvantages jobseekers to include the following: youth below 26 y.o., persons above 50 y.o., long-term unemployed for over 12 months, low-educated (below ISCED 2), people with unstable employment in past 12 months, asylum seekers, single parents, and people with disability. In any case, it appears that the 'disadvantaged' categories defined in the Act are not directly reflected in the profiling approach, which has been narrowed down to four specific categories defined ex ante and without consideration of other factors, their severity or combined effect of various disadvantages (for example, gender). Disadvantage aspect is considered only for the administrative and data collection purposes. Data collection organized with the unified IT system now automatically notices disadvantage of most types, but it is unclear how this shapes targeting of clients or services they are being offered, should they fall out of the four defined categories of "clients with barriers to labor market".

In Zone II, one month after the registration, second stage of profiling is conducted, based on assessing client's activity in job search. Based on the activity level, measured by the

frequency of attempts of communication with employers, applications sent via web portal where profile was created, or visits of local labor office, clients are then profiled to “active” and “non-active”. Such “activity profiling” then sets grounds for establishing frequency of mandatory contact with the local PES.

The link between the type of disadvantage and the speed and form of intervention is defined. Clients defined as “barrier clients” (i.e. falling into one of the four categories) become eligible to an ALMP after 3 months in the registry, and types of interventions are explicitly defined by the length of unemployment and type of category. Interventions are defined as “voluntary” and “mandatory” with mandatory participation rising with the duration in unemployment registry. Generally, however, for the first 3-6 months, activity is expected from the jobseeker without much interactive and complex counseling and advice. This goes against the principle of early intervention promoted as best practice and as a key tool for preventing long-term unemployment.

Assessment of the soft profiling system

Duell and Kurekova (2013) note with respect to system in place between 2009 and 2013 that while the applied profiling system was clearly a positive shift to a more targeted treatment of jobseekers, it was difficult to evaluate whether its introduction improved the work of PES. Profiling was rather basic (neither is a sophisticated statistical profiling method used, nor is much time spent on interviews), and the classification into three groups of jobseekers seems not to be sufficiently differentiated to grasp the different employment barriers. Longitudinal data are not systematically exploited, the treatment of the jobseekers cannot be done in the most efficient way, and profiling seems to be focused on the individual alone and disregards external factors, such as labor market conditions in the given locality. Compared to profiling approaches in other countries, individual risk level is not accessed and the approach is not based on robust analytical methods, allowing for discretion and stereotyping. Information on past take-up of ALMP measures or social assistance, typically included as a factor in other systems, is not included. Overall, client classification is very general and puts together very diverse profiles of jobseekers.

Changes to profiling and categorization introduced in late 2013 bring little improvement; on the contrary, they further shift the approach implemented in Slovakia away from the international practice. Profiling has become even more simplified and rigid in terms of defining the four categories which determine clients’ assessment as being with or without barriers in accessing labor market. The approach overlooks a range of other factors known to influence chances on the labor market, while it fails to consider labor market conditions or past labor market trajectory. Moreover, defined categories are overlapping and perhaps overwhelmingly focused on the youth, while neglecting other types of clients (e.g. disabled, women with children, etc.). While profiling should consider motivation to work as a soft factor, “activity profiling” employed in Slovakia appears to put the blame of unemployment on the jobseekers without considering a range of barriers, often psychological or socio-

economic which pre-determine motivation to seek work and cause discouragement. Contrary to what one would expect, policy intervention mapping prescribed for each category of disadvantage is more limited for clients with barriers than those without barriers. Targeting of measures to clients by disadvantage continues to be weak as the recommended measures are nearly identical across the four categories of barrier clients.

VII. Past Profiling Studies in Slovakia

Statistical profiling approaches have been tried in Slovakia in the past, but these have never been launched as a systemic tool by PES. Their approach, findings and lessons can serve as an input into discussion about the most feasible approach to profiling and job seeker categorization in the country.

World Bank profiling exercise

World Bank team conducted macro-level profiling analysis based on 2009 EU SILC data, which represents a rather different approach relative to existing international practice (for details on estimation approach see Annex I). Due to better availability of representative data, it is worth discussing advantages and disadvantages of such approach.

Macro-level profiling analysis has several advantages. Individual level profiling is unable to generate more systemic overview of the pool of unemployed, and by design does not cover inactive who are not seeking work, but might be employable. This is an important consideration in the Slovak context, where in 2009 as much as one fifth of Slovak working-age population was unemployed or inactive. The key limitation might be the fact that launch of this tool at the regional or labor office level would not be possible as data at such level of disaggregation is not available. The tool is therefore more suitable for governments to get mapping of unemployed and inactive and their relative reliance on a range of social policies, to better understand areas of focus and identify policy inefficiencies at the macro-level.

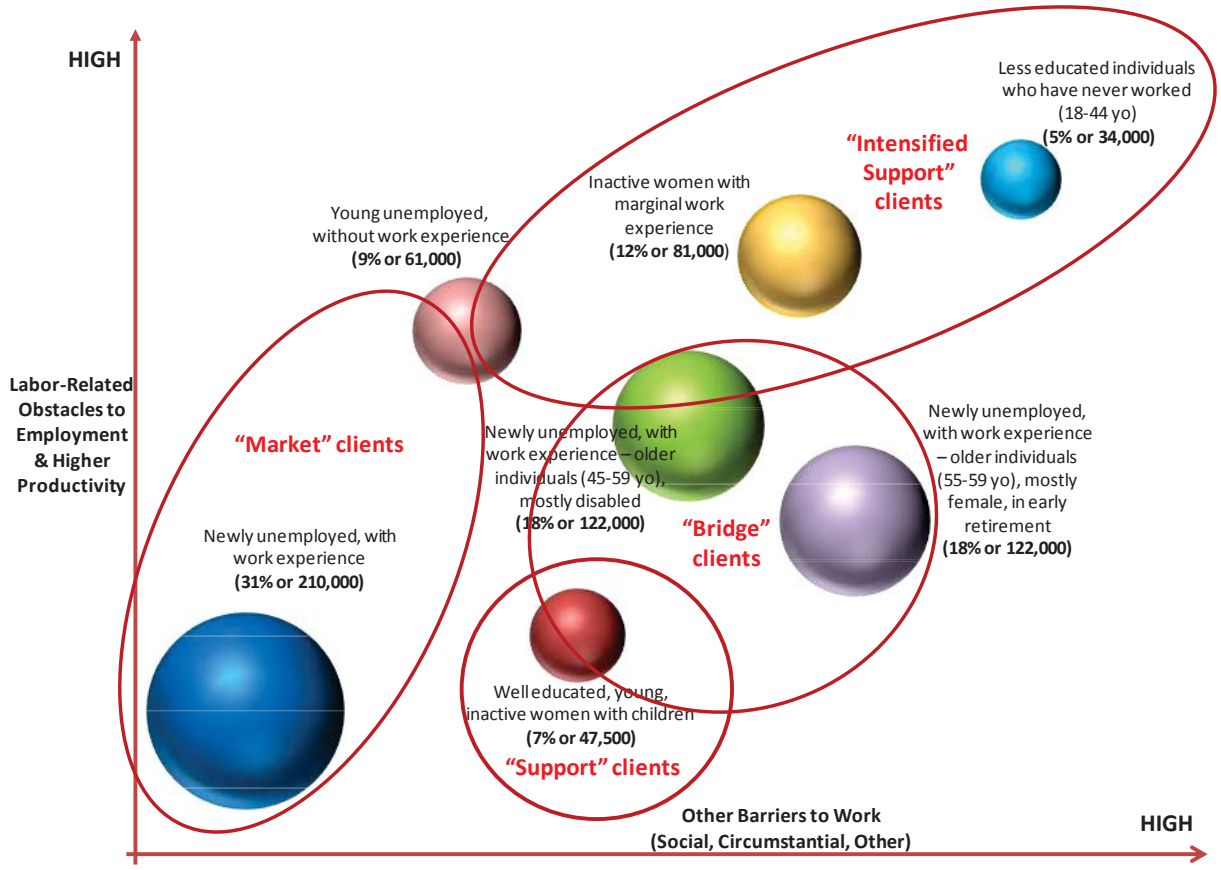
Based on the results of the World Bank profiling exercise using Latent Class analysis method, activation clients can be divided into seven distinct groups or clusters.[8] These groups can be broken into categories of: "market clients," "support clients," "bridge clients," and "intensified support clients" (Figure 4, Table 5). The clusters and groups are based on the

[8] Latent Class Analysis (LCA) enables a characterization of categorical *latent* (unobserved) variables from an analysis of the structure of the relationships among several categorical *observed* variables. The method was originally conceived of as an analytic method for survey data. As an exploratory technique, LCA can be used to reduce a set of several categorically scored variables into a single latent variable with a set of underlying types or "classes". As a confirmatory method, the latent class model can be used to test hypotheses regarding the researcher's a priori assertions about the structure of the relationship among the observed variables. In the World Bank study, LCA was used as an exploratory technique to create the optimal number of groups of non-working individuals with the most similar characteristics.

degree of obstacles and distance from labor market of economic/productivity type and social/circumstantial character. In addition to the youth (Category 5) and the low-educated workers with no previous experience (Category 7), which have been present in policy discourse, macro-profiling exercise identified other distinct categories, which have to date escaped policy focus. These include, for example, relatively sizeable groups of inactive women, some of which are well educated and with work experience (Category 6). Another sizeable and distinct category are the newly unemployed older individual with previous work experience who are mostly disabled or on early retirement schemes (Category 2 and 3).

Macro-profiling exercise is a useful tool to better understand the complementarities and tradeoffs between various activation policies. It signals how each policy could potentially affect specific groups of the unemployed or inactive (Table 5). For example, the analysis of Slovak data shows that the majority of the unemployed and inactive are not recipients of the benefit in material need (BMN). Overall, only 15 percent of all unemployed and inactive live in households that receive the BMN, while another 7 percent receive unemployment benefits. Almost 80% of newly unemployed mostly older workers with previous work experience (Category 2) receive disability benefits. While provided segmentation is indicative, it points out that the potential target groups for activation are much broader than simply those who receive minimum-income support, which has been heavily promoted by political discourse.

Figure 4. Indicative segmentation of target groups among the unemployed and inactive in the Slovak Republic



Source: Staff calculations based on EU-SILC 2009 data.

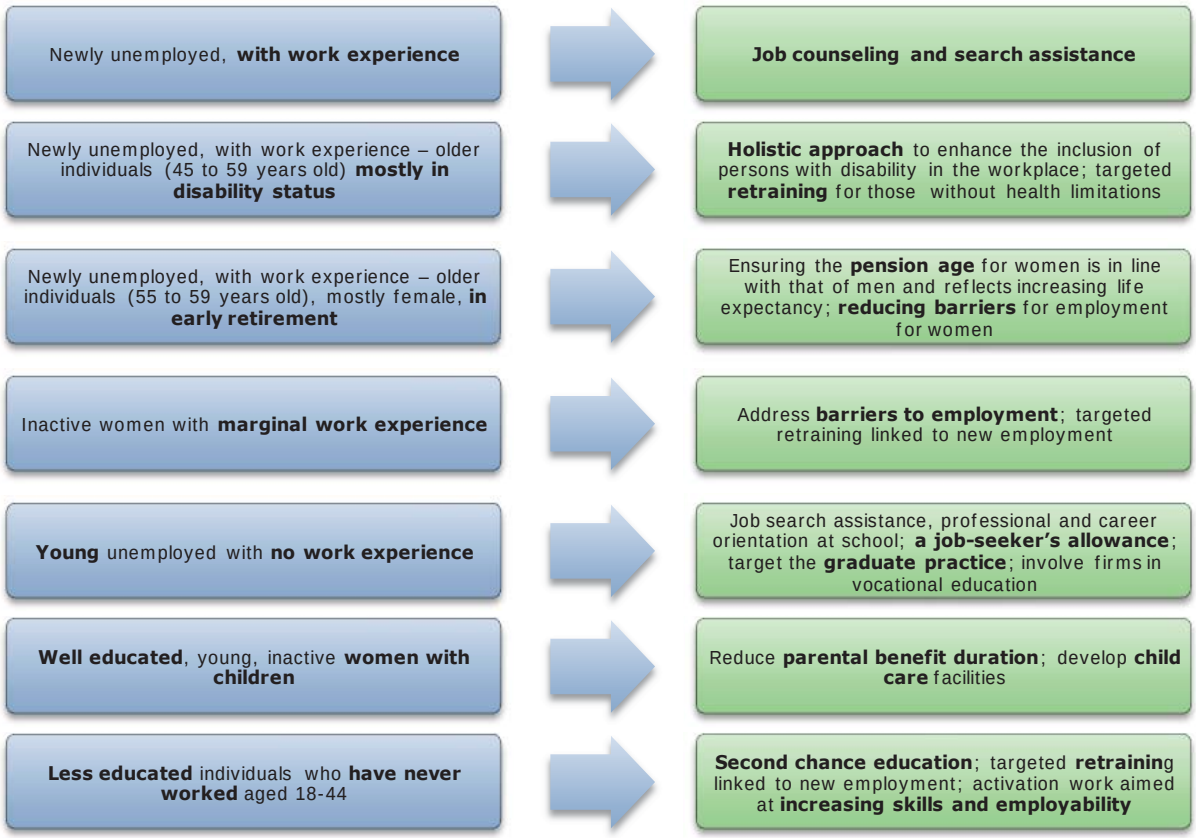
Table 5: Groups among the inactive and unemployed and reliance on different social protection programs: case of Slovakia (2009)

	Size of each group	Description	Percent who receive BMN	Percent who receive unemployment benefit	Percent who receive parental benefit	Percent who receive disability benefit
Market clients						
Category 1	**31 percent** (210,000)	Newly unemployed, with work experience	26 percent	18 percent	11 percent	3 percent
Bridge clients						
Category 2	**18 percent** (122,000)	Newly unemployed, with work experience – older individuals (45-59 yo), mostly disabled	7 percent	2 percent	4 percent	79 percent
Category 3	**18 percent** (122,000)	Newly unemployed, with work experience – older individuals (55-59 yo), mostly female, in early retirement	4 percent	1 percent	4 percent	8 percent
Intensive support clients						
Category 4	**12 percent** (81,000)	Inactive women with marginal work experience	11 percent	2 percent	53 percent	20 percent
Category 5	**9 percent** (61,000)	Young unemployed, without work experience	21 percent	9 percent	17 percent	2 percent
Support clients						
Category 6	**7 percent** (47,000)	Well educated, young, inactive women with children	1 percent	0 percent	72 percent	3 percent
Intensive support clients						
Category 7	**5 percent** (34,000)	Less educated individuals who have never worked (18-44 yo)	27 percent	4 percent	24 percent	51 percent

Note: Based on Latent Class Analysis of the 2009 SILC data in the Slovak Republic.
Source: World Bank (2012).

Furthermore, the profiling of the unemployed and inactive indicates that a variety of activation measures are necessary to move the various groups closer to employability. Figure 5 illustrates the range of activation measures geared toward specific groups to better facilitate their (re)entry into the labor force. Each group possesses characteristics that require specific considerations when designing programs to ensure (re)integration into the workforce. Proposed interventions are examples of interventions, not exhaustive. Such "rough" mapping of client category on intervention type could be a useful exercise in estimating unit service costs.

Figure 5. Recommended Activation Measures for Target Groups in Slovakia



Source: World Bank (2012).

Nove Zamky profiling pilot project

De Koning and Van Dijk (2004) publish results of pilot statistical profiling for unemployed in Slovakia conducted in Nove Zamky labor office. Using administrative data, the authors estimate three types of probit models to determine the impact of individual characteristics on the chance of long-term unemployment. Administrative data did not include (at all or in sufficient quality) some important information, such as health condition, occupation, field of education or motivations. Based on estimation results, three categories of jobseekers are

suggested: low, medium and high risk, for which estimations appear fairly accurate. By finalization of this study, the author did not gain any information about whether profiling was ever introduced or recalibrated on practical or analytical level in this pilot context.

VIII. Conclusion and recommendations

This report aimed at providing an overview of variety of approaches to profiling, jobseeker categorization and unit service costs determination in varied institutional systems. International experience and practice to build upon is vast.

Existing soft profiling system implemented in Slovakia is very rough and appears rather rigid. It is unable to consider several dimensions of disadvantage. The system accounts for motivational aspects in a formalistic way used to determine frequency of contact with relevant Labor Office, but not as a criterion to determine intervention. The battery of available measures for categories of clients defined as having barriers to labor market is insufficiently tailored to their specific needs. Moreover, various additional obstacles (e.g. gender, socio-economic disadvantage) are not taken into consideration when assessing client needs. The scope for the country to benefit for development of statistical profiling system is potentially very large.

This review demonstrated that OECD countries covered in this report typically use a combination of hard-data statistical profiling and soft profiling, where contribution of PES staff becomes very important. In Australia and USA where statistical profiling has been implemented for close to two decades, evaluation studies show that profiling is able to create gains in terms of employment outcomes and to save resources.

Given international experiences, important criteria for setting up the model in Slovakia is accuracy and simplicity of the model. Slovak authorities collect detailed administrative data about jobseekers which could serve as the key input for the development of the model. Collection of additional data, such as mental/psychological condition, transport and IT infrastructure barriers, or criminal record, is subject to availability of finance and, most importantly, initial accuracy of the statistical model developed on the basis of administrative data. In several countries, statistical profiling on the basis of administrative data alone appears to be sufficient to provide reliable results and information into client categorization. A recent initiative of public authorities to further improve data infrastructure and collect also data about ethnicity is likely to lead to better data infrastructure and further improvement in estimations.

In spite of its positive effects in countries which have pioneered profiling systems, introduction of statistical profiling to every-day caseworker practice has been more problematic in many countries. The key reason is that PES staff tends to oppose reforms introducing statistical profiling tools and tends to use such tools only to a limited extent. A key issue to tackle in the case such tool is to be introduced is its acceptance by PES

personnel, which can be partly tackled by involvement of PES staff into development of the model to give them a sense of ownership. Other limitations of profiling should be kept in mind when designing the models; these include business and economic cycle effects or policy effects. However, these difficulties can be dealt with and be incorporated into statistical model (O'Connell et al. 2009, 2012; Soukup 2011).

Profiling systems in most countries are not directly connected to the calculation of unit service costs for different categories. Credit transfers/pricing of services is often determined on the basis of experience of public service providers with treatments of clients. It is then inevitably recalibrated in order to incentivize appropriate behavior of stakeholders (service providers) and to ensure better overall efficiency and effectiveness of employment services delivery.

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