

# SUPPORTING EMPLOYMENT OF PEOPLE WITH DISABILITIES: ECONOMIC ANALYSIS OF INTERVENTIONS

Analytical report

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supported by

• **Visegrad Fund**



Minsk, 2018



Ministry of Foreign Affairs of the  
Netherlands

*The project is co-financed by the Governments of Czechia, Hungary, Poland and Slovakia through Visegrad Grants from International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe.*

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# INTRODUCTION

This report presents the research by an international team of experts, which they concluded within a framework of ENCON project – Enhancing CSOs Contribution to Evidence-Based Policy Making for Vulnerable Groups in Belarus. The project has been implemented by CASE Belarus in cooperation with CASE (Poland), Institute of Economic Research of Slovak Academy of Sciences (Slovakia), The Faculty of Economics and Administration of Masaryk University (Czech Republic), as well as ACT (Belarus).

Main goal of the first (technical) part of this paper is to

provide simple overview of available information related to application of social cost-benefit analysis to determine the methodological approach selected for the assessment of applied social policies (in terms of pilot programs) in Belarus covered by the ENCON project. Application of in-depth social cost-benefit analysis is a difficult task. In this part of paper, we describe general methodological overview based on available sources. We also present potential adjustments or alternatives to CBA methodology with aim to simplify calculations or to use more tailored methods

of assessment of social policies (focused on improvement of the status of various vulnerable social groups). In the second part of the paper, we describe the challenges of application of CBA on interventions for people with disabilities and present selected cases of assessment of public programmes aimed to influence their employment. Third part of the report presents cost-and-benefit analysis of an employment support program for the people with disabilities that has been recently implemented by a Belarusian NGO in Minsk.

# SOCIAL COST-BENEFIT ANALYSIS (SCBA)

The cost-benefit analysis (CBA) is traditional approach typically used to assess or compare weaknesses and benefits of available alternatives, previously related mainly to the public investments or infrastructure projects. In general, the methodology combines two main purposes. First, to verify whether the investment have positive cost/benefit ratio, thus if benefits and gains of the project application overweight its costs. Advantage of this approach (for example in comparison to simply evaluate the cost effectiveness) is monetization of the costs and benefits of all relevant factors including direct outcomes, externalities (socio-economic effects), opportunity costs and other qualitative effects. The monetization is time adjusted, thus all quantitative effects are

discounted to the net present value of investment. Second, the CBA is used to compare alternatives of various projects to determine best applicable option, including retaining current state (status quo). It is also applicable to determine gained value for money to select the project suitable for financing under various budget constraints and policy targets. That is why CBA is one of the most common tools used to assess relative efficiency and effectiveness of public investment/intervention. It allows comparing of different «return-on-investment» of various programmes or policies, so it may be used to identify which programme/measure yields higher possible benefits for a given size of investment/resources.

CBA should take into consideration value of all applicable costs and benefits, but there is often critique, that this analysis is trying to give monetary value to all factors, including social costs and benefits, which are often difficult to measure and could be perceived differently by all stakeholders, and therefore can be desirably adjusted by evaluators (including applied monetary values). Additionally, it is sometimes hard to avoid double counting in terms of direct and indirect effects. Therefore, the comparison of effects between various projects should be done by the same approach with clearly defined factors and values.

## Social cost-benefit analysis

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Specific type of CBA, social cost-benefit analysis, is a cohesive method to explore

full range of impacts caused by a development project or a (social) policy measure. It can be

used both, as an evaluation and a planning tool. It could provide answers to two basic questions

- has the programme/measure delivered the intended results for the invested resources?
- is there other alternative which would generate more effects (benefits) for the same resources invested?

with the aim to decide whether to improve existing/planned programme or measure, or to shift to a different alternative.

The social CBA is a useful tool for socio-economic appraisal of a programme or a policy measure, which can help decision makers to test, improve, optimize, or justify their decisions in various social and policy areas (infrastructure and energy projects, regional development and tourism, provision of social services to communities/individuals, etc.). This method composes financial effects (investments, profits, taxes, etc.) with societal effects (travel comfort, environment, health and safety and other indirect impacts). The idea is to estimate price («price» in a sense of a value given by a society to certain effect) of as many aspects as possible, with aim to scale various heterogeneous effects in uniform way. The main advantage is that in this way, different projects or alternatives can be compared, what enables public parties (investors) to

decide on the best option, given the circumstances. Besides this, the project can be compared also with a baseline scenario (the situation of the most likely scenario if the tested project/measure will not be implemented; null alternative).

The social CBA weighs all kinds of costs and benefits: the ones with direct effect on project participants/measure's target group or agents involved; the ones which have indirect effect on the persons/agents related to the original target group; and external effects (may be related to safety, transport, environment, public goods, etc.). These types of identified effects are either monetized, or they are given a value so that they can be compared (e.g. on a scale 0–10 as appraised by the stakeholders). The process of monetizing effects is the biggest advantage of the method, but also a weakness – it influences the outcomes of the CBA, introduces subjective element into calculations, and the prediction remains uncertain, so the results of the social CBA are never absolute. However, when comparing two alternatives, or comparing intended project to a null alternative, even the simplified or rough CBA is better than none. The social CBA should also reveal who bears the

costs and which group is getting the benefits («distribution of costs and benefits»). Besides monetization of as much effects as possible, ability to compare alternatives/or to compare intended intervention to a null alternative, uncovering the distribution of costs and benefits; another advantage of the social CBA approach is ability to calculate a risk and show uncertainties, so that policy decisions are based on calculated risks.

Since CBA approach is usually used to assess efficiency and effectiveness of public investments, its main purpose is to answer the question which intervention should be abandoned in favour of more effective one. The limitation is a lack of capacity to execute CBA by (smaller) public investors, especially at the local level. CBA is an appropriate tool for local governments, but also for NGOs, in order to select or improve projects or policy measures at the local or community level. To enhance utilization of the CBA approach, the widely consensual standardization of the methodology, as well as building capacities of local governments and NGOs to undertake CBA-kind analyses when evaluating social projects/programmes, are needed.

## Understanding CBA (Simplified description of its stages)

There are several approaches to undertake social (policy) CBA, but we can identify these basic steps:

1) Identification and quantification of costs and benefits (gross outcomes)

2) Outcomes are adjusted by counterfactual and by attribution of other actors (getting the net outcomes)

3) Monetization of costs and net outcomes (impacts)

4) Discounting costs and impacts

### 1. Identification and quantification of costs and benefits

As identification of intervention's costs is much less difficult (including quantification/monetization), we will start with the benefit side of CBA and will focus on outcomes and impacts of the intended project/programme, hereinafter called intervention. Outcomes may be positive and negative and can be defined as a change (positive or negative) which occurred since the intervention has been implemented (or expected change). The identification of such changes related to the intervention can be based on stakeholders assessment, or based on verification of a hypothesis (e.g. expected income changes may be tested no matter if stakeholders identified this change or not). But engaging stakeholders to the identification of outcomes leads to more robust results.

NOTE: When building the set of outcomes = changes observed in relation to the intervention, there are two options: either the investor/evaluator pre-defines the outcomes and the measurement is to verify the pre-defined hypothesis (e.g. investor expects that the new policy will improve health of stakeholders so he sets «reduced morbidity» as an indicator of health outcome and examines it to verify his hypothesis), or stakeholders themselves identify changes they have experienced in

relation to the intervention. The second option may omit some changes (stakeholders may not realise their health improvement), on the other hand, first option allows investor to understand desired impact of his intervention but doesn't give him an opportunity to understand changes from the point of view of the stakeholders (and the investor may miss out the changes that are not visible at the first sight). Engagement of stakeholders helps to understand local dynamics better. Direct effects (quantitative changes captured in common statistical data) can be determined by the first option, but broader comprehension of less tangible outcomes is better to achieve by involving stakeholders into identification of outcomes. (While traditional CBAs did focus predominantly on tangible benefits – e.g. changes in economic capital such as production, revenue, infrastructure improvements; and in human capital, such as health, education results; or in environmental capital, recent CBAs involve also less tangible benefits of interventions, such as improvements in social capital; institutional capital; or broader well-being aspects: self-esteem, mental health, participation, empowerment...).

The social aspects are increasingly incorporated into CBAs, the framework for implementing «well-being» impacts into such analyses was created by the theory of «social return on investment» (SROI). Taking into consideration less tangible benefits is more difficult compared to the direct effects, as they usually don't

have attributed straightforward indicators which would allow translating of these (mostly) qualitative changes into quantitative terms.

The second step in this phase of CBA is to quantify identified gross outcomes, what means to measure the change that has occurred, and to do it separately for each gross outcome. Also the qualitative change has to be expressed in quantitative way – the evaluator may attribute an indicator for this outcome and set the value on a scale (e.g. asking the stakeholders to rank the indicator on a scale 0–10 when comparing it to the situation before the intervention).

Quantitative indicators should be determined for each outcome, as outcomes have to be benchmarked. It is always recommended to explore whether there is a recognized indicator in the literature, linked to the certain outcome, even if it does not reflect the outcome perfectly (e.g. the number of additional years at school is internationally accepted proxy indicator of improved education, even though it does not respond to the quality of education perfectly). For inherently qualitative processes, a scale assessment can be applied. To collect data, the survey questionnaire may be designed in a way, so that the evolution of a change is captured in time, since beginning of the intervention. It means that indicator should be able not only to include information on the coverage (the size of sample for data collection), but also information on dynamics of the change (magnitude of

the change experienced by the respondents).

In this phase of CBA, all «gross outcomes» are identified and measured; «gross» because here we do not assess to what extent the outcome has been influenced by other factors.

## **2. Adjustment by counterfactual and by attribution of other actors**

The evolution in outcome indicators is now able to exhibit the magnitude of changes observed since the beginning of the intervention. However, these changes may not necessarily have occurred only due to the intervention. That is why gross outcomes must be deducted by the contribution of other factors and actors, to get the net value which can be attributed solely to the tested intervention. Counterfactual is the change which would occur anyway, regardless of the tested intervention. Attribution must be identified if there are other actors who contributed to the intervention. The changes based on «business-as-usual» (counterfactual) basis and contribution of other actors should be measured, in order to quantify the size of «net effect» (net change, called also «impact» of the intervention). The impact can be also calculated as a gross outcome (gross change) minus the percentage that was attributed to counterfactual and other actors contribution. The impact of intervention is thus adjusted by other factors and other actors influence.

Counterfactual scenario (which part of the change would happen regardless the

intervention) should be set for all outcomes in the analysis. This can be done by several approaches: hypothetical approach uses accessible regional or national data on the macro trend in the policy area where the intervention is being implemented; before-and-after-approach tries to uncover the ongoing trend by asking the stakeholders not only about their position at the zero time (when the intervention is going to be implemented) but also a certain period of time before it (let's say a year ago); stakeholder-based approach passes the responsibility to decide whether the change is attributed to the intervention or to other factors directly on the stakeholders; and comparative approach is built on a comparison of the change perceived by the target group with a control group (e.g. nearby community or non-targeted group within the same community). In addition to measuring counterfactual, the best way to identify the contribution of other actors is a stakeholder-based approach – stakeholders are asked to list other organizations which contributed to the observed change and to give the points according to the size of their impact.

## **3. Monetization of costs and net outcomes (impacts)**

The comparison of costs and benefits of the intervention requires expressing both sides in the common units. So monetization of impacts is aimed towards comparability of the quantitative results, thus not only costs, but also all impacts must be expressed in common unit – in money. All impacts shall

be translated into money, also these which are normally not expressed in monetary terms (e.g. improvements in services, in status of target group, in quality of life aspects, etc.) – obviously, this part of CBA may be the most tricky.

Data for CBA can be collected either from the beginning of the intervention on year-by-year basis (this is useful for monitoring ongoing change – progress, for matching baseline and evaluation data), or in a retrospective way (this applies when it was not possible to collect data from the starting point and it requires deeper involvement of the stakeholders).

## **4. Discounting costs and impacts.**

In the last phase of CBA, the time aspect should be considered in relation to costs, as well as benefits (on year-by-year basis). It means to identify how impacts (changes in outcome net of counterfactual and attribution) are distributed across time on year-by-year basis and how all costs, which were involved in delivering the intervention, are distributed in time (with costs we mean both, financial, easily expressed in budgets, as well as non-financial, referring to the community e.g. when beneficiaries are contributing to the intervention/programme). Capturing how impacts and costs are distributed across time will give the image of cash-flow broken down by the type of benefit and type of cost. Then it is possible to calculate total benefits and total costs across time.

All costs and benefits arising into the future should be discounting



in order to get their present values. The discount rate is expressed as a percentage and can be used by Excel formula (to get NPV). Thanks to this it will be possible to identify the net present value NPV (present value of benefits minus present

value of costs) and benefit-cost ratio BCR (present value of benefits divided by present value of costs). Tested intervention is rational (effective) if the net present value is higher than zero (benefits outweigh costs) and if benefit-cost ratio is  $>1$ .

Calculating NPV is important as it may say how much the future impacts of the intervention are worth to investors and stakeholders now. BCR tells how many euros/dollars etc. are generated due to intervention per 1 €/€ invested.

## Additional notes to describe CBA methodology

### NOTES to identification of cost and benefits

- All benefits and costs that have impact on people should be taken into account in CBA
- Benefits and costs should be defined in terms of observable consequences on people
- Only those costs and benefits directly attributable to the policy should be taken into account – if they would occur anyway, then they should be ignored
- Avoid double counting
- Consider opportunity costs
- Consider externalities
- Consider induced behaviour

### Notes to enumerating in CBA

- Benefits should be measured in terms of «willingness to pay», and costs should reflect opportunity costs
- Values should be adjusted for risk
- Values should be expressed in terms of ranges
- The evaluation period should be «whole of life»

- Benefits and costs should be measured in real terms, i.e. net of inflation
- Multiplier effects should be ignored, unless there is high unemployment

### Note: Wider framework for conducting a CBA

The main steps of full cost-benefit analysis process (including those described above) are as follows:

- **Step 1:** Define policy alternatives and counterfactual
- **Step 2:** Identify the people who gain and those who lose
- **Step 3:** Identify the benefits and costs; allocate to time periods
- **Step 4:** Quantify the benefits and costs within ranges
- **Step 5:** Discount to a common period, compare benefits with costs
- **Step 6:** Is the result clear enough? If not, consider whether it is worth investing in more research, and repeat above steps
- **Step 7:** Write report

Individual steps of CBA mentioned above are very well described in the guides developed by The Treasury (advising body to the New Zealand Government) initially prepared for the institutions and bodies, decision makers and their advisors using the Treasury's tool for CBA. They not only explain how to monetize impacts, but also how to define policy alternatives and counterfactual, how to allocate costs and benefits to time periods, how to identify segments of policy target cohorts, how to avoid double-counting, explain reasoning behind discounting, or what is sensitivity analysis. The guides also provide worked examples on how to proceed CBA [see: CBAX Tool User Guidance – Guide for departments and agencies using Treasury's CBAX tool for cost benefit analysis; The Treasury (2017), or Guide to Social Cost Benefit Analysis; The Treasury (2015)]. Another guide to own CBA tool at governmental level was prepared by HM Treasury (British government department) in cooperation with Public Service Transformation Network and Whitehall partners, to redesign public services to

deliver better outcomes and higher value for money (see: Supporting public service transformation: cost benefit analysis guidance for local partnership; HM Treasury, 2014). For examples of outcomes identification and data sources for monetization of impacts, in segments relative to the target groups of ENCON project («adult mental health»;

«crime»; «children in care»), as defined by the HM Treasury CBA model. Priority attention is given to CBA, and especially to incorporating social aspects to CBA, in evidence-based policy decision-taking processes in UK, New Zealand, and the USA, that's why we can find variety of updated guidelines particularly from the official authorities of these countries. Of course,

there are also other extensive guides (see: Handbook of Cost-Benefit Analysis 2006 by Australian Department of Finance, 2006; Guide to Cost Benefit Analysis of Investment Projects by the European Commission's DG for Regional Policy, 2008; or Cost-Benefit Analysis and the Environment: Recent developments by OECD, 2006).

## Alternatives to CBA or using partial CBA

Any major investment in public services will affect many actors, not only directly (suppliers, clients in the respective sector, as well as individuals: members of the target group and also employees, citizens), but also indirectly (induced effects). Some effects are external, and it is hard to express them in prices. It is necessary to examine linkages between actors (affected directly and

indirectly) and the effects, to avoid double counting of the benefits, to define who is experiencing the impact of the intervention at the end. In some cases, especially when there are many (indirect or external) effects that are difficult to monetize, it is more appropriate to use other similar evaluation method, or to use some of the partial CBA methods.

Relevant criteria for decision on the proper or most suitable methodology involve completeness, feasibility, objectivity and usability for decision making process. Each methodology has its advantages and disadvantages; the next table summarizes features (advantages and weaknesses) for the most common methodologies in relation to the mentioned criteria of methodology selection.

**Table 1. Comparison of evaluation methodologies.**

	Methodology features			Usability in decision process		
	Completeness	Feasibility	Objectivity	Clarity of calculations	Clear advice	Acceptability
<b>Monetary methodologies</b>						
Financial Analysis	- Only financial effects. Often single actor but can be extended to multiple actors.	+ Standard accounting approach.	+ Causality tested. Effects can be easily compared due to use of standard rules.	+ Process is clear due to use of standard and transparent accounting rules.	+ Ranks policies and distinction between attractive and unattractive policies.	- Limited acceptability for large project due to incompleteness.
Input-Output Analysis	+/- All actors are taken into account but only direct and some indirect effects.	- Limited: IO tables are only available for main activities (sectors).	+/- Causality tested. Objective due to use of standard IO table. But only relevant for short-run and for small projects.	- Insight in parameters from IO tables but not in calculations behind it.	+ Ranks policies and separates attractive from unattractive policies. Clear and detailed advice.	- Strong assumptions needed about state of the economy. Also not all effects are taken into account.

**Table 1 (continuation). Comparison of evaluation methodologies.**

	Methodology features			Usability in decision process		
	Completeness	Feasibility	Objectivity	Clarity of calculations	Clear advice	Acceptability
<b>Monetary methodologies</b>						
Computable General Equilibrium Analysis	+	-	+	-	+	-
	All direct and indirect effects, and to some extent external effects, all actors included.	Limited: based on IO tables, method requires complex calculations.	Causality tested. Objective due to basis of IO tables.	Calculations form black box.	Ranks policies and separates attractive from unattractive policies. Clear and detailed advice.	Limited acceptability due to complex calculations.
Cost Effectiveness Analysis / Cost Utility Analysis	+/-	+	+	+	+/-	-
	Only main effect & costs are counted, all actors included.	Limited data and calculations required.	Causality tested. Main effect & costs are weighted adequately.	Insightful calculations.	Ranks policies in terms of attractiveness, no distinction between attractive and unattractive.	Focus on one effect. Not suitable for policies with more than one relevant effect.
Social Cost Benefit Analysis	+	-	+	+/-	+	-
	Some effects are hard to monetize but all effects are listed and actors are taken into account.	Substantial calculations necessary.	Based in economic science. Causality tested. Also substantiated estimated parameters are used.	Risk of black box effect.	Ranks policies & distinguishes attractive policies from unattractive ones.	Some assumptions might be hard to accept; high weights of high-income people & business interests.
Social Return on Investment	+/-	-	+/-	+/-	+	+
	Aimed at monetizing social and environmental effects as much as possible.	Substantial calculations necessary.	Based in economic science. Causality tested. But risk of subjective parameters for intangible effects.	Risk of black box effect.	Ranks alternatives & distinguishes attractive ones from unattractive ones.	High acceptability due to inclusion of stakeholders.
<b>Non-monetary methodologies</b>						
Impact Assessment	+	+	0	0	-	+/-
	Can be applied to all effects and actors.	Limited data and calculations necessary.	Causality not always tested. No weights used.	No calculations made except for estimating separate effects.	No ranking of policies and no attractiveness conclusion.	Every decision maker can draw his/her own conclusions.
Multi Criteria Analysis	+	+/-	-	+	+/-	+/-
	Can be applied to all effects and actors.	Depends on depth of analysis.	Causality not always tested. Subjective weights or methods can be used.	Process is clear, assuming the study is transparent on the weights used.	Usually ranks policies but no attractiveness conclusion.	Decision makers can apply their own weights.

Source: Hof, B. – Koopmans, C. – Lieshout, R. – Wokke, F. (2012).

Most of the mentioned methodologies have explicitly monetary nature, and the last two are recommended to use in cases when there are too many effects that cannot be monetized with acceptable degree of uncertainty. Input-output (I-O) analysis and CGE (computable general equilibrium) model are recommended when the evaluator aims to focus at sectoral analysis/sector effects. Financial analysis limits itself to measuring only financial impacts on the organizations or individuals. Traditional Economic impact analysis (or Economic effect analysis) is not suitable for measuring the balance between costs and benefits (with aim to detect the benefits for society), as it considers some costs to be benefits. In economic rationale, if it tries to measure economic effect of the project, it will treat costs such as labour employed in the project execution (input to the project) as benefit, because it is a contribution to the local economy. This is obviously different understanding of the outcomes of the intervention, as CBA follows «net benefit» created by the project/intervention as a desirable result. Other alternative for project evaluation not mentioned previously are Life-cycle assessment (can be useful to identify external costs which are often ignored by standard social CBA), or Cumulative effects analysis.

Besides CBA, Cost effectiveness analysis, or Cost utility analysis, may be also used to evaluate the effectiveness of the public interventions. They are appropriate particularly in

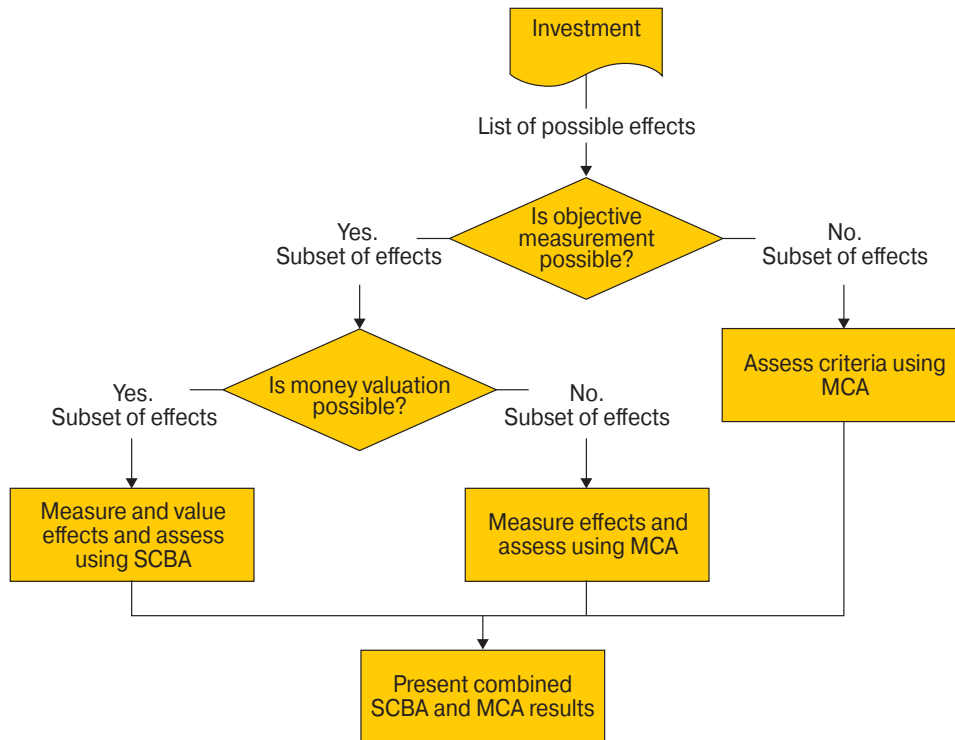
cases when benefits can be quantified but not monetized (expressed in money value), or when interventions shall be ranked within a fixed budget (they allow to rank alternatives by the benefits expressed in the same unit, other than money). The advantage for our project is that they understand costs and benefits in the same way as CBA does, and also here the assumption that benefits should outweigh costs is present. These two methods can be considered as kind of «partial CBA» (The Treasury, 2015). The disadvantage is that they are not suitable for evaluation of the interventions which are over the given budget.

Another option frequently mentioned in relation to CBA-based evaluations is Multi-criteria analysis (MCA). It is being used as an alternative to CBA particularly when either some costs or some outcomes are impossible or difficult to quantify; or when qualitative assessment is required. In this case, MCA is considered to be kind of a crude CBA and it is usually chosen due to data or time limitation. The second case when MCA becomes preferred methodology is when the emphasis is given to evaluation of to what extent the intended intervention meets the pre-set objectives of decision makers. It is usually based on a method of list of success criteria, reflecting public policy goals, with the weights assigned to each criterion. The alternatives are scored by stakeholders against these criteria. The shortcomings of the methodology include more intuitive evaluation,

inclination to double counting, criteria may reflect investors' objectives rather than welfare of community or target group, business-as-usual scenario is not considered, as well as time aspect. However, it is possible to combine advantages of both, Social CBA and MCA, and to perform the analysis in two dimensions. The mechanism of combination of both methods is displayed below.

The very basic idea, or foundations of CBA, is rooted in the private financial methods of project evaluation. They also use ranking criteria such as net present value, internal rate of return, benefit-cost ratio, but in a solely financial way. Another common criterion is a payback period. Since in the most projects, the costs incurred before any benefits are delivered, it is useful to be able to estimate the point in time, when total benefits will exceed the total costs. Both, costs and benefits should be discounted. The shortcoming of this evaluation criterion is that it neglects cash flows (costs and benefits) which will occur beyond the payback period. Social CBA also uses similar-to-financial ranking criteria, but it treats costs and benefits differently, than private evaluations do. Social CBA uses social rather than private rate of discount; social CBA considers opportunity costs (shadow prices) rather than market prices. So social CBA includes social perspective, however, limitation is that it assumes that everything what decision maker/investor should consider is possible to measure

**Figure 1. Combination of SCBA and MCA.**



Source: Hof, B. – Koopmans, C. – Lieshout, R. – Wokke, F. (2012).

in monetary terms. However, there are some aspects important to society, directly or indirectly influenced by the project/intervention, which cannot be included in money metric. Also these «intangibles» must be assessed against money metric. For purposes of evaluations, where intangibles plays important role and it was not possible to express them in money values, the concept of «multiple accounts» was introduced. Tangibles are measured at the cost-benefit account (here it is considered to be economic efficiency

account) and intangibles constitute other account (may be measured in monetary, or non-monetary units). This concept originated in the USA, in the process of designing the guidelines for publicly-funded development projects evaluation by the legislators (for details see e.g. van Kooten, 2017). Particularly MCA methodology (described above) may serve in the framework of multiply accounts – this approach is recommended when some spillovers are truly intangible and cannot be measured in monetary terms. (For deeper

insight in theoretical concept and foundations of CBA, see works such as: Cost-benefit Analysis: Concepts and Practice (2006) by Anthony E. Boardman; or later edition from 2011 by Anthony E. Boardman, David H. Greenberg, and Aidan R. Vining; Cost-benefit analysis and economic theory (1975) by Jacques Lesourne; Benefit-cost analysis in theory and practice (1994) by Richard O. Zerbe and Dwight Dively; Cost-Benefit Analysis and Public Policy (2009) by David Weimer.)

## Conclusion

All significant decisions which may largely affect communities or citizens, or which require

substantial investments, should be based on evidence-based analyses. Most of them include

some kind of costs and benefits comparison. Primarily, CBA is about organizing available

information in a logical way and allowing an investor, local authority, or NGO to consider as many aspects as possible (it measures the impact on public at large). The decision makers or advisors should be encouraged to employ at least rough CBA, or some alternative methodology, otherwise they would be left to rely on intuition or anticipations. CBA should not be rejected already at the beginning due to the argument that some outcomes are difficult to measure (what is often true). There are techniques to use estimates, or to use proxy indicators, the evaluators can take advantage of existence of variety of guidelines. After all, some information is always available. However, once the rules of a method have been chosen, the evaluator should stick to it, especially when comparing alternatives. CBA is used to reduce uncertainty in decision making.

The main purpose of CBA is that it provides **benefit-cost ratio (BCR)**, rate of **return on investment (ROI)** and **net present value (NPV)** for each intervention/programme/project. This information about value for money allows comparing various options. The outputs of the analysis which may be of the most significant importance are: lifetime net present value of the intervention; lifetime net present value of individual impacts; and return on investment to society and to government (State/local).

However, maybe the biggest problem connected with social CBA is lack of standardization in some areas, where social CBA is currently being employed. For example, while there are some standards in using CBA in space, agriculture sector, waste management, or other environment-related areas, there is insufficient

standardization in using CBA to evaluate projects related to public services in childcare or support to families at risk. But still, there are many papers applying CBA to assess private or public programmes focused on child education, particularly on preventive interventions to improve schooling or health of children (mental health or cognitive and non-cognitive skills of children) published in psychology. However, general consensus is needed to develop the process of standardization, to achieve transparency and consistency in using social CBA to evaluate such programmes. Even while there is no general agreement on standards, meanwhile an agreement on basic principles may be achieved. This will also enhance the ability to educate stakeholders to conduct CBA to evaluate their own initiatives and to understand the results properly.

# INTERNATIONAL EXPERIENCE OF EFFECTIVENESS ANALYSIS OF SERVICES FOR EMPLOYMENT OF PERSONS WITH DISABILITIES

**The share of people with disabilities among the global population is on a rise. This is caused by several factors:**

- Aging of the population. According to the World Health Organization, the number of elderly people, with higher risk of chronic diseases (diabetes, cancer, mental illnesses), has increased.
- A wider range of lifestyle diseases, such as hypertension, heart diseases, obesity, and other mental and digestive disorders (e.g. major depressive disorder, alcoholism, eating disorders, peptic ulcer disease, gastroesophageal reflux disease).

## Defining disability

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Disability has been defined by many institutions. Traditional definitions focus on the medical conditions of disability: the World Health Organization defines disability as «any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human

being» (WHO, 1976: 143). The World Bank defines it as «physical, mental, or psychological condition that limits a person's activities» (Mont, 2007:2).

In recent years, medical definitions were replaced or complemented by the social model of disability, which

conceptualizes disability as «arising from the interaction of a person's functional status with the physical, cultural, and policy environments» (Mont, 2007:2). The European Union, for example, when compiling statistical data on people with disabilities, uses at least two definitions:

**(1)** «people having a basic activity difficulty (such as sight, hearing, walking, communicating)»; and also

**(2)** «people limited in work because of a longstanding health problem and/or a basic activity difficulty» (LHPAD) (Eurostat, 2014).

Different countries also define disability differently. In Poland for example, there are two bidding definitions of disabled people:

**(1)** a disabled person with legal confirmation defined as «a person who has appropriate

judgment issued by a body, authorized to this»; and

**(2)** a biologically disabled person defined as «a person, who does not have judgment, but feels constrained in the ability of performing basic activities for his/her age» (CSO, 2018).

## Disabled people – numbers

Estimations of the share of people with disabilities in the world's population vary significantly depending on the definitions and methodologies in use. The World Bank, for example, estimates «the world's population that lives with some form of disability at 10% to 15%, of whom 2–4% experience significant difficulties in functioning» (WHO, 2011:1;7).

The European Union Statistical Office, on the other hand, states

that people with disabilities constitute between 2% to even 21% of the EU population (Eurostat, 2011; Eurostat, 2012). The first figure stands for people who report a basic activity difficulty, while 21% represent those above the age of 15 (Eurostat, 2012) who «face barriers to participation in any of ten life areas<sup>1</sup>, associated inter alia with a health problem or basic activity limitation» (Eurostat definition

of biopsychosocial model of disability, 2011).

In Poland, according to National Census of Population and Housing (Slany, 2011: 50) disabled people constitute 12.2% of the country's population. 4.1% were identified as disabled only by the biological definition; 1.2% were identified as disabled by the legal definition; and 6.9% – according to both definitions.

## Sources and types of disability

The WHO accounts the share of people with mental disorders among all disabled people is estimated at 30%: «Four of the ten leading causes of disability worldwide are neuropsychiatric disorders, accounting for 30.8% of total disability» (WHO, 2001: 6). Similar figures were reported for European Union countries in a report titled «Salud mental en Europa: políticas

y práctica» (Knapp, McDaid, Mossialos, Thornicroft, 2007).

According to data available for Poland (Informacja Rządu RP, 2013:7), in the years 2008–2012, the main reasons of disability were: diseases of locomotor system (55.8%), diseases of cardiovascular system (49.6%), neurological disorders (33%), eye diseases (27.3%), hearing impairment and ear diseases

(13.7%), mental disorders (10.1%) and intellectual disability (4.0%).

Along with classification by source of disability, there is also e.g. by type of disability. Intellectual disabilities can be divided into: mild, moderate, severe, and profound (American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision 2000 [DSM-IV-TR]).

<sup>1</sup> These ten areas are: mobility, transport, accessibility to buildings, education and training, employment, internet use, social contact and support, leisure pursuits, economic life, attitudes and behaviour.



## Disabled people in the labour market

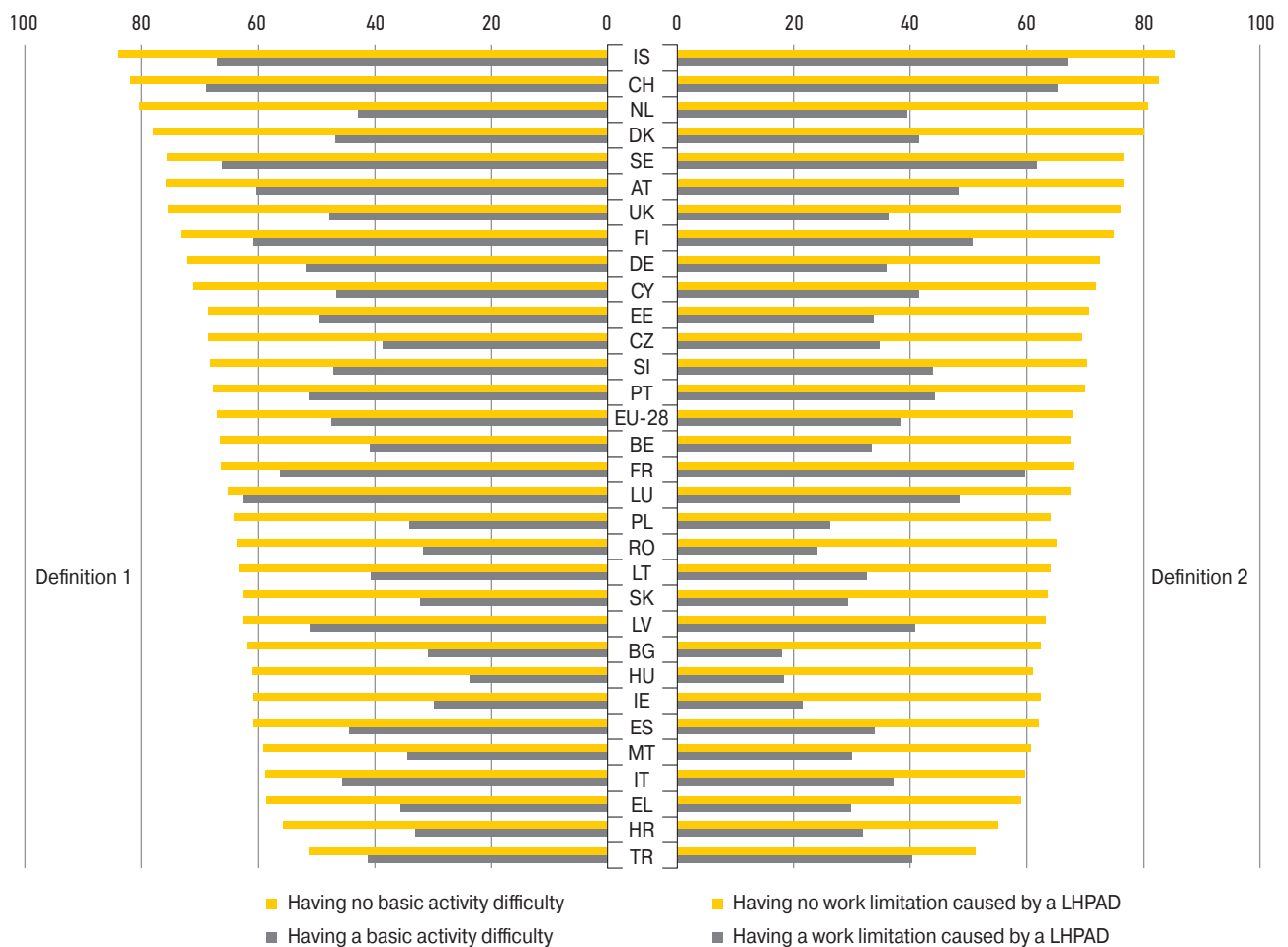
Numerous studies (Yin, 2014; Longhi; 2017) focus on employment of disabled people and disability pay gap (ie. the gap in labour between people with and without disabilities). Their findings point at similar trends: first of all, the employment rate among disabled people is lower than among people without

difficulties; secondly, the disability pay gap exists, and varies depending on gender and on the nature of the disability (physical vs. mental disorders); finally, disabled people work less hours than those without disabilities.

In 2011, the employment rate in EU Member States (for people aged 15–64), as

reported by the EU Statistical Office, was 47.3% for people with basic activity difficulties and 38.1% for people with limitation in work caused by a health condition or difficulty in a basic activity (Eurostat, 2011). In comparison, the employment rate of people who do not have difficulties in basic activity was 66.9% and

**Figure 2. Employment rate of persons aged 15–64, by country and disability definition, 2011.**



Source: Eurostat (2011), Disability statistics – labor market access.

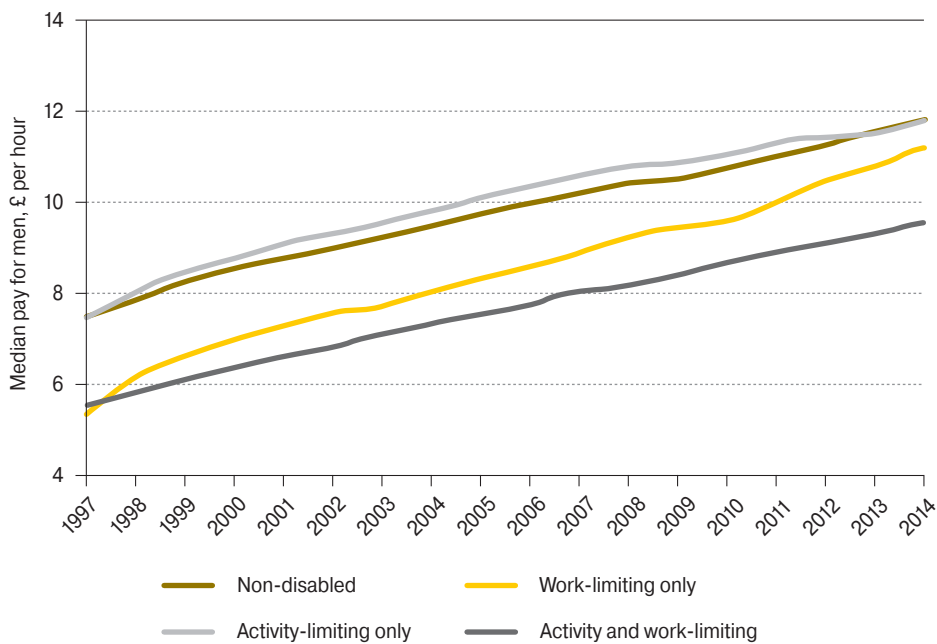
67.7% for those who do not have any kind of difficulties. The highest employment rate of disabled people was in Sweden (66.2% – those with difficulty in basic activity) (61.5% – those with limitation in work caused by a health condition or difficulty in a basic activity); the lowest is in Hungary (23.7% – difficulty in basic activity and 18.1% – limitation in work caused by a health condition or difficulty in a basic activity). In countries such as Hungary, but also Denmark and the Netherlands, the employment gap between

those who struggle with work limitations and those who don't is as high as 40%.

The average pay gap between disabled and non-disabled persons can vary from 7% to 37% (Yin, 2014). In the UK, for example, the median disability pay gap in the years 1997–2014 was 13% for men and 7% for women (Longhi, 2017). Also, according to the same studies in 2014 median pay for men was the highest for non-disabled persons (almost 12GBP/h) and the lowest for those with activity and working limits (less

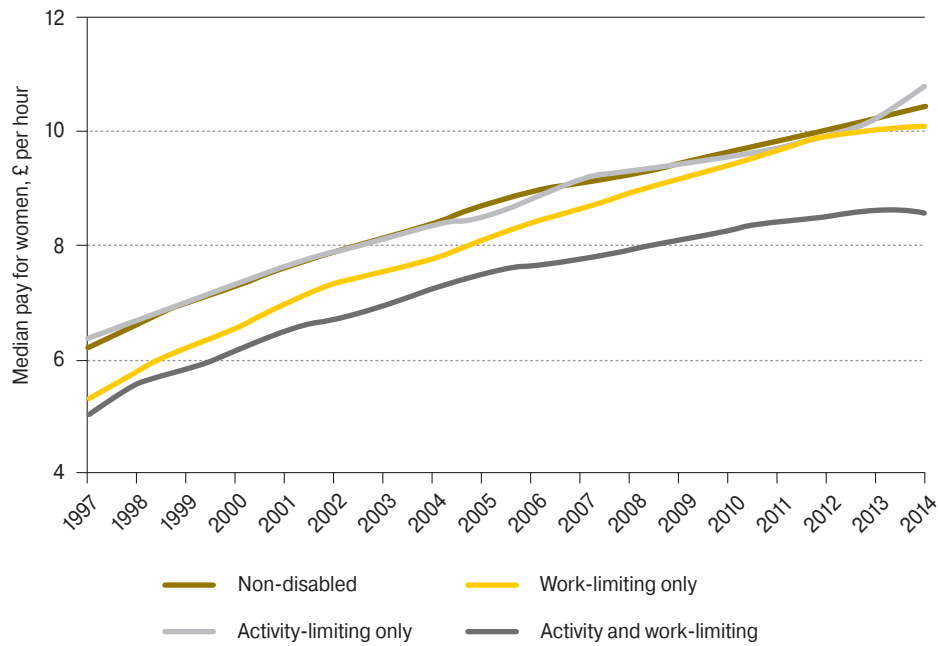
than 10GBP/h). Median pay for women was the highest for women with work-limiting only (more than 10GBP/h), slightly higher than median pay for women without disabilities. The lowest median pay was registered for those with activity and working limits (slightly above 8GBP/h). Median pay among men is the lowest for men who suffer from mental impairment. In case of women, those with mental and physical impairment earn the same.

**Figure 3. Median pay for men by disability status over time (UK).**



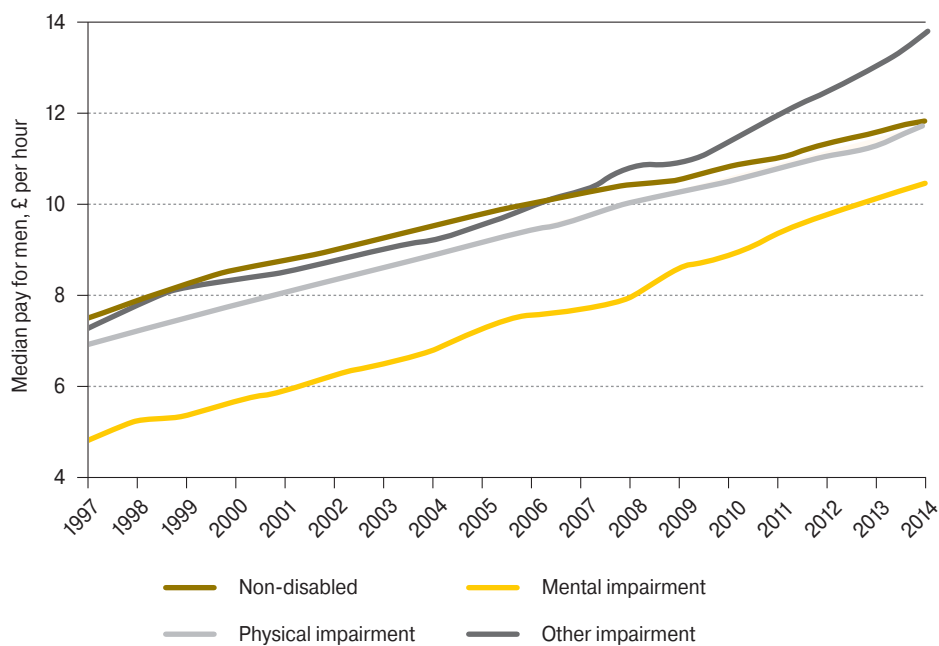
Source: Longhi (2017), The disability pay gap, Institute for Social and Economic Research, University of Essex, pp.19.

**Figure 4. Median pay for women by disability status over time (UK).**



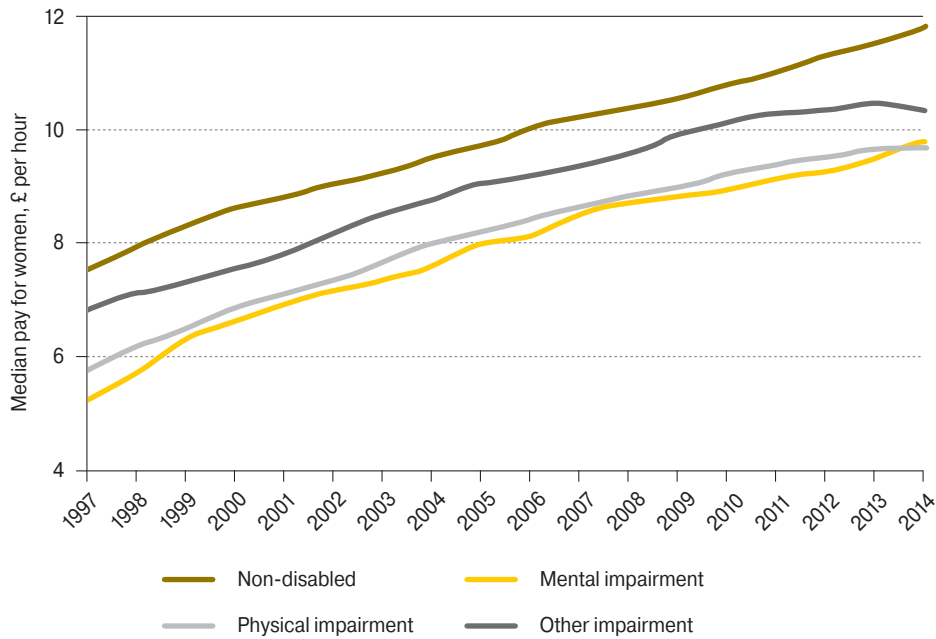
Source: Longhi (2017), The disability pay gap, Institute for Social and Economic Research, University of Essex, pp. 20.

**Figure 5. Median pay for men by disability status over time (UK).**



Source: Longhi (2017), The disability pay gap, Institute for Social and Economic Research, University of Essex, pp. 19.

**Figure 6. Median pay for women by disability status over time (UK).**



Source: Longhi (2017), The disability pay gap, Institute for Social and Economic Research, University of Essex, pp. 20.

When it comes to the number of working hours, around 22.4% (first definition: «people having a basic activity difficulty (such as sight, hearing, walking,

communicating)») and 28.9% (second definition: «people limited in work because of a longstanding health problem and/or a basic activity difficulty»)

of disabled people work less than thirty hours per week, compared to 16.7% and 16.4% respectively of non-disabled persons.

## Cost-and-benefit analysis (CBA) of employment support programs for disabled

A number of studies look at the costs and benefits of vocational rehabilitation interventions for people with disabilities (Conley, 1969; Thornton, 1992; Hemenway, Rohani, 1999; Latimer, 2001; Kenyon et al.,

2005; Jaeger et al., 2006)<sup>2</sup>. The analyses focus mainly on monetary outcomes of different programs supporting disabled people on labour market, usually measured from the perspective of participants, taxpayers, and

society (Hemenway, Rohani, 1999:23), and also private agencies (disability service providers), and state institutions (health system, police) (Daly, 2017:21).

<sup>2</sup> A number of studies was conducted in the USA (Conley, 1969; Hill et al., 1987; Hemenway, Rohani, 1999; Cimeria, 2012).

**Costs of such programs usually include (Daly 2017:21):**

- (1) individual services provided to participants;
- (2) counseling, guidance assistance;
- (3) administrative costs of organizing and running the program; and
- (4) equipment and materials.

**Studies which concentrated only on cost-effectiveness**

(CEA, as opposed to CBA researches) of supported employment for disabled added the following costs (Mavranouzouli et al., 2013:978):

- (1) provision of individual placement and support;
- (2) day services;
- (3) potential accommodation savings;

Other costs related to provision of individual placement and support, such as

- (4) mental health-care costs; and
- (5) local authority costs.

**Benefits include:**

- (1) increased earnings;
- (2) increased tax contributions;
- (3) reductions in public assistance use;
- (4) reductions in public assistance costs;
- (5) increased job-related competences;
- (6) reduction of vocational evaluation costs.

**Other benefits are non-monetary.** These include (Hemenway, Rohani, 1999:22):

- (1) improvement of job-related skills;
- (2) improvement of communication skills;

- (3) better educational attainment;

- (4) increase of quality of life.

The most common indicator used in the studies is benefit to cost ratio. The results of different CBA studies (Hemenway, Rohani, 1999, Na, 2016) prove high benefit to cost ratio. As discussed by and later by Na (2016). In the US, for every 1 USD spent on programs supporting disabled people, 16 USD returned to society in different forms Hemenway and Rohani (1999:30); in a similar research conducted in Korea, the return ratio was 1:2,35 USD (Na, 2016 – data for 2012).

The only exception are support employment programs which appeared to be «more expensive than other vocational programs, and therefore the overall benefit was actually less than the overall cost» (Cook, Burke, 2002:550).

## Summary: methodological considerations of CBA analyses

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When analyzing the existing cost-and-benefit analysis of programs supporting disabled people on labor market, researchers should take into account several important factors:

- some of the data might be unavailable;
- some studies provide a very detailed list of costs/benefits (subcategories, like different type of health services), some, in contrary, present only a

general group of costs/benefits (categories, like health services) or even more (direct vs. indirect costs);

- benefits of employment programs should be monitored through a long period of

time, otherwise they are underestimated;

– methodologies of CBA vary by country, in scope (level of disabilities, nature of disabilities or age group, among others), in approach (perspective of individuals/state/local authority/society/a particular professional group of disabled people), and in length of the study;

– results of existing studies might not be comparable because they were conducted in different times and places.

Moreover, the literature review show that there are a lot of studies conducted by American researchers, while European ones are underrepresented. There were two similar type of

studies conducted in the UK, but the researchers were rather interested in cost effectiveness analysis (CEA) of employment of disabled people (Greig et al., 2014) or a particular one, like intellectual disabilities (Shearn, 2014) and autism (Mavranetzouli et al., 2013).

# CBA OF A «GUIDED EMPLOYMENT» PROGRAM FOR THE PEOPLE WITH DISABILITIES IN MINSK

## Introduction

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In this part of the report we provide a short overview of the research made by ENCON expert team in order to calculate net effect of the particular social intervention in Belarus using cost-and-benefit analysis. The intervention is a special program

of «guided employment» implemented in Minsk by non-governmental organization «Belarusian association of assistance to children and young people with disabilities» (BelAPDiIMI). The program was implemented from 2012 to 2017

in the city of Minsk. Research included in-depth interview with project staff, extracting financial data from project reports, and most important, tracking performance of the clients – their to-day occupation, place of work and salary.

## Guided employment

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They survey made in 2010 (latest available data) by the Scientific institute of the Belarusian Ministry of labor showed that only 17,2% of people with disabilities older than 18 work<sup>3</sup>. Other stay either at home or at special institutions. Disregarding

the fact of employment/unemployment of people with disabilities all of them receive monthly allowances from the state.

State policy toward employment of people with disabilities

includes «fixed» working places, professional orientation sessions, vocational education and training according to specialized training programs. State also provides preferences to businesses that are founded by people with disabilities or

<sup>3</sup> Исследование положения инвалидов в Республике Беларусь: отчет Учреждения «Научно-исследовательский институт труда Министерства труда и социальной защиты Республики Беларусь», выполненный в рамках совместного проекта ПРООН и Правительства Республики Беларусь «Содействие Республике Беларусь в присоединении к Конвенции о правах инвалидов и ее осуществлению», 2010.

employ people with disabilities (50% or more of the staff). Business may apply for money allowances to create and preserve a working place for a person with disability and to pay for his/her support and adaptation.

Some complimentary services are provided to people with disabilities by local civil society structures to strengthen their potential to be economically active. Among such interventions, non-governmental organization «Belarusian

association of assistance to children and young people with disabilities» (BelAPDliMI) starting from 2012 implements a program of guided employment of people with disabilities. This program seeks to increase the rate of employment among people with disabilities through providing each client with a special person – a guide that would help/assist in various ways a person with disabilities.

During 5 years of program implementation 350 persons contacted BelAPDliMI to receive

assistance in employment. Out of them 80% had different mental diseases. As a result of the program 59 persons were employed, 194 received legal support, 20 were assisted to have recommendations for work (medical issue), 14 were subscribed to professional training courses. On average it took 3,5 months to find an appropriate working place for a client of the program. Average age of employed clients was 25 years.

## Cost-and-benefit analysis

To define the net effect of the efforts of BelAPDliMI a standard cost and benefit analysis was used (for the description of methodology consult previous parts of the report).

As a first step of the CBA we identified the impact of the intervention. Probably the most important measure (and an easily traceable one) of the programs result is the ability of clients to hold their working place for a reasonable period of time. At the moment of our research 66,1% of initially employed people continued their work. Surprisingly only 29,4% of people that received additional state financial support kept their jobs while the share of employed people that didn't

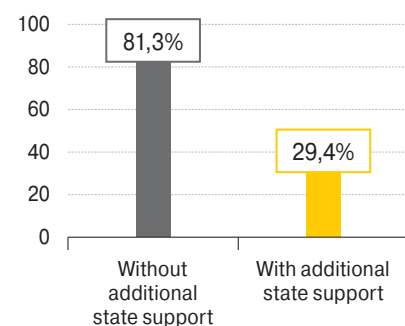
receive any additional support amounted to 81,3%. Average period of employment for those who continued working was 3,6 years.

As a second step of the research we calculated the costs of the intervention, which consisted of two major components:

- 1) BelAPDliMI costs including all payroll costs of 2 assistants and administration costs of the program;
- 2) State expenditures on adaptation of people with disabilities at their working places financed by the national social security fund.

Figure 7 illustrates precisely the rent-seeking incentives created

**Figure 7. The share of programs clients that continued to work according to the presence/absence of additional state support measures.**



Source: own calculations based on BelAPDliMI data.

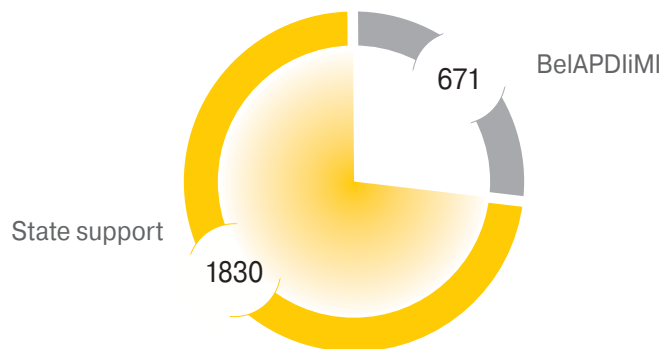


by the state support program. The matter is that this program provided businesses with the full coverage of employees 1-yr salary if he/she has disabilities. Obviously some entrepreneurs misuse it: they perceive people with disabilities as almost free labor force and get rid of them as soon they have to pay for it.

Average program costs including both BelAPDiMI and state expenditures amounted to USD 1 454,80 per client. Please note that costs per «effective» client include cost connected to handling the total amount of the programs clients (350) because they are inevitable if someone wants to achieve the similar result. It should be mentioned also, that the more difficult case of disability is the more expensive efforts are required to get a job for a person.

Third step of the CBA was to assess benefits of the program in question. Benefits that we were able to correctly verify and calculate included increase in county's productivity due to increase of employment and decrease in public expenditures due to lower number of people that attend so called «territorial centres of social services to population» (TCSO). The former number was easy to

**Figure 8. Average program costs per client, USD.**



Source: own calculations based on BelAPDiMI data.

calculate because we had access to the first-hand data on actual salaries of program's clients. The later number is based on the reported costs of day stay at TCSO (situated in one of the districts in Minsk; prior to becoming clients of the program 1/5 of them attended these institutions). Thus the average benefits per client/year amounted to as much as USD 1 693,93.

We assume that the benefits are distributed evenly over the 30-year time span. Using 4% discount rate we can estimate that the benefits will total more than USD 30 000 per client. Over the 6-year period of program implementation net present value of benefits reached USD 1 million.

Research shows that every dollar invested in the guided employment of young people with disabilities yielded as much as 14 dollars. It takes just one and half year for the intervention to break even.

Approximately 90% of the programs clients were employed at the so called «social enterprises» with the share of people with disabilities at least 50% among workforce. But if we trace further the careers of the clients it turns out that they become so confident that they leave this «sheltered work» and find jobs on the open market. For instance, up to 80% of people initially employed by social enterprise «ArtIdea» did so.

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