HOW TO ESTIMATE THE ECONOMIC GAINS TO ROMA INCLUSION FROM SMALL LOCAL PILOT PROGRAMMES?

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The labour market inclusion of the Roma would offer substantial economic and social gains. The first section of this note shortly summarizes these benefits in theory, while the second section offers a method to estimate the long-term economic gains of small, local Roma inclusion programs.

1. WHAT MAY BE THE ECONOMIC GAINS OF ROMA INCLUSION IN GENERAL?

The focus of this section is to discuss how investing into the labour market inclusion of the Roma would pay off on the short- and long run. Some of these social and economic benefits are quantifiable and will be quantified in the next section, while the rest is hard to put into numbers. Nonetheless, these might be important social and economic consequences of the labour market inclusion of the Roma - and people suffering from social exclusion in general as well.

1.1 BENEFITS ON THE MICRO LEVEL/SHORT TERM MARGINAL BENEFITS

The most obvious social benefits of labour market inclusion are its direct fiscal (budgetary) benefits coming from being employed (Kertesi and Kézdi, 2001). In a society, people having a job contribute more to the national budget and/or receive less social transfers. Higher revenues in the national budget would come either directly in the form of income tax and contributions, paid both by employees and employers, and indirectly, in the form of VAT, coming from higher consumption expenditures. These budgetary benefits are straightforward to predict.

A second source of budgetary benefits may come from closing the pay gap between Roma and non-Roma workers. In Hungary, the Roma-non-Roma pay gap is estimated to 16%. Higher wages for Roma workers would mean higher revenues from taxes and contributions for the national budget as well.

1.2 BENEFITS ON THE MACRO LEVEL/GENERAL EQUILIBRIUM EFFECTS ON THE MEDIUM AND LONG TERM

On the longer term, several other economy-boosting effects may arise from social inclusion, in particular, from being more likely to work. It is known from the literature that employed people have better mental health and have a lower probability to suffer from depression (van der Noord et al., 2014), thus require less health services. A reduction in unemployment rates decreases the prevalence of criminal behaviour (Raphael and Winter-Ebmer, 2001).

Furthermore, social and economic exclusion leads to investing less in one's own education. One would spend less time and effort on going to school if their perceived and real future opportunities are constrained (Kearney and Levine, 2012). Lower average educational attainment is one of the factors why Roma people are less likely to work, or if they do, they receive lower wages (World Bank, 2010). However, if expected employment probability and expected wages go up due to an intervention, investment to education might go up as well. Thus, on the long run, it is a fair expectation that labour market inclusion would contribute to the increase of the average educational attainment of the Roma, which in turn, would

increase the probability of employment and expected wages, would positively affect health and fertility decisions and would further reduce crime rates as well. In parallel, increasing work experience and education would increase the productivity of workers and thus increase potential GDP and long-run economic growth.

2. HOW TO ESTIMATE THE ECONOMIC GAINS OF THE PILOT ACTIONS?

Six dual pilot actions are going to be completed in WP4 in capacity building, cooperation and sensitization (see Table 1). Although all pilot actions use different intervention logics and tools to increase the labour market inclusion of Roma people, above their own specific goals, they all aim for increasing the probability of employment of their clients (or their final beneficiaries).

Thus, in our methodological guideline, we outline the estimation of the economic gains of the programmes considering their effects on the probability of employment as their main outcome. This approach is indeed relevant, considering that the pilots' all other types of goals and outcomes would positively impact the probability of finding a job or self-employment on either the short or the long run. This choice is also supported by the fact that the economic and fiscal benefits of employment are well quantifiable in all 6 countries.

Although the pilot programs could have other, non- or hardly-quantifiable short and long-term benefits as mentioned in the previous section, we do not aim for estimating those in this note.

In the next subsection (2.1) we present our methodological suggestion on estimating the economic and fiscal gains of the pilot programs in details, while subsection 2.2 discusses some concerns and interpretation issues one needs to keep in mind when disseminating the results.

Table 1: Pilot actions

Pilots	Main treatment/interventions	Number of final beneficiaries	Expected primary outcomes/impacts
Sectoral service capacity development models (A4.1)			
Pilot 1: Capacity development in education in Serbia	Vocational/on the job trainings and self-esteem development programs; job search services and trainings for higher employability	40-60	increased probability of (formal or informal) employment
Pilot 2: Capacity development in employment in Romania	Complex intervention incl. vocational and on the job trainings for at least 60 unemployed Roma people**		
New types of cross-sectoral and multi-stakeholder cooperation models (A 4.2)			
Pilot 3: services supporting the start-up of new businesses in the	Creation of self-employment strategies	N/A	Increased probability of (self-)employment

Czech Republic	and Socially innovative business plan (SIBP) development in Czech Republic**		
Pilot 3: a targeted & concerted civil liaison service (client accompanying service) for the most disadvantaged, LTU Roma people in Hungary	Training (workshops) in high-demand professions in small groups for young Roma people who are out of school (NEET) in social projects; job search services	10-15	Increased probability of employment or self-employment, continuation of professional education
New sensitization models involving public service employees into Roma support services (A 4.3)			
Pilot 5: *Bridges to Self-Sufficiency* in Slovakia	sensitisation of employment office workers and related professionals about the recognition of informal learning; mentoring; creation of a virtual employment agency; self-help home construction; on the job training; financial literacy programs	~100*	Financial stability (home), increased probability of employment, learning construction skills, improved financial literacy
Pilot 6: sensitization models in Bulgaria	Staff training at local labour offices and other public service institutions for a more inclusive institutional attitude, preparations for the new services**	N/A	Increased probability of employment

Sources: Final Application Form, Pilot presentations, **https://drive.google.com/drive/folders/0B9qqHplOtYuPbjl4bkFlN052SFk. *Rough estimates of the Budapest Institute.

2.1 ESTIMATION GUIDELINE

Our estimation methodology is based on estimating the difference of the potential gains and benefits, and, costs of the programs, using the impact of the programs on the probability of employment as their main outcome variable.

2.1.1 Economic and fiscal benefits

We suggest to estimate the economic gains of the programs the following way. As a first step, the causal impact of the programs on the probability of employment needs to be estimated (counterfactual impact evaluation). This involves comparing the share of program

participants that are employed 1 year after completing the program[1] to the same ratio in a comparable control group (i.e., the counterfactual). The most credible way to set up a control group[2] (a group of people who do not participate in program and would not by impacted by the program in any ways) is using a random experiment, i.e. randomly allocating the members of the target group to treated (participating) and control (non-participating) groups. Then, the difference between the employment ratios of the two groups could be interpreted as the causal effects of the program on finding a job (or self-employment). For example, if 50% of the treated group and 40% of the control group are employed one year after the program, the effect of the program on the probability of employment is 10 percentage points.[3] We suggest to estimate two scenarios using the boundary values of the estimated impact taking into account its estimation errors. In practice, that would mean that depending on the size of the estimation error, there would be a "pessimistic" scenario (the estimated impact minus the estimation error) and an "optimistic" scenario (the estimated impact plus the estimation error). In statistical terms, this procedure means to use the boundary values of the 95% confidence intervals around the estimated impact.

Then, the second step is the estimation of the average gross wage in the target group based on administrative, survey-based, or publicly available aggregate wage data. This estimation can be conducted many ways. The easiest way is using gross wage data for blue-collar workers published by the national statistical offices, or, by Eurostat, by gender.[4] For example, in Hungary, the average gross wage of blue-collar worker men was 603 EUR/month (180 900 HUF/month), that of women was 456 EUR/month (136,800 HUF/month) in 2015 [5]. Then, using these figures and the estimated 10 percentage points effect, the gross wage effect of the program would be 12*0.1*603=724 EUR for men and 12*0.1*456=547 EUR for women per treated person per year (see also Table 2).

The next step is to estimate the size and demographic distribution of the target group. In Hungary, for example, the size of the Roma population is estimated to be around 500,000-600,000 persons (Hablicsek, 2007). The pilot programs mainly target young people; thus, let's assume that the number of Roma people between age 20 and 30 is 100,000, and, this is

[1] The timing of measuring employment status depends on the schedule and the possibilities. Employment 180 days after completing the program could also be a valid outcome variable; however, as the estimated effects are going to be used to predict long-term outcomes, the later the final measurement happens the better. The best possible choice is the measure the outcome variable two times: 180 days after completing the program, and again, 1 year after completing the program

[2] The focus of this methodological guideline is the estimation of economic and fiscal gains and not the estimation of causal effects. Thus, we would not go into details about the estimation of causal effects here; more precisely, all 6 pilot programs would need a separate guide for their own impact evaluation. However, the estimation of the effects of each program on the probability of employment needs to be conducted before the economic and fiscal gains can be estimated.

[3] According to the literature on labour market programs that are designed specifically to increase the probability of employment, such program increase the probability of employment on average by about 10-15 percentage points on the medium term (Kluve et al, 2016). Thus, for simplicity, we are going set up our example using a 10-percentage-point impact; however, the real magnitude of the effect needs to be estimated separately for each program.

[4] It would even be better to use gross wage data by educational attainment; however, such data is not readily available, neither at Eurostat, nor by the Hungarian Statistical Office. That measure needs to be calculated based on microdata. Clearly, if more detailed (potentially individual-level) data on earnings is available, it would be preferable to use that.

[5] Source: https://www.ksh.hu/sajtoszoba_kozlemenyek_tajekoztatok_2017_03_08

the target group. Then, if someone gets the treatment between age 20 and 30, he/she would spend 30-40 years (35 years on average) on the labour market during a lifetime.[6] Thus, the lifetime wage effect of the pilot would be 35*724=25,326 EUR for men and 19,152 EUR for women per a treated person, assuming that country-level productivity is constant, the increase of real wages is zero in this period, and, the discount factor equals to the growth rate of nominal wages and also to the inflation rate.[7] If the pilots were scaled-up to cover the entire target group of 100,000 Roma people between age 20 and 30, half of them were men, and, the estimated causal wage effect of the program would be constant 10 percentage points in each year of this 35-year long period, the total gross wage impact would be 50,000*25,326+50,000*19,152 EUR=2.2 billion EUR in 35 years.

The total fiscal effect of such a gross wage increase would roughly be 1.3 billion EUR in 35 years, including both income taxes and contributions payed by employees and employers, and, VAT assuming that participants would consume 100% of their extra net income that is due to the program[8].

Table 2: The estimation of the benefits and costs of the pilots

Benefits			
	Assumptions	Men	Women
Avg gross wage in HUF/month	Blue-collar workers	180,900	136,800
Avg gross wage in EUR/month	1 EUR=300 HUF	603	456
Impact of the pilot on the probability of employment	The causal impact of the pilot was estimated in a counterfactual impact evaluation to 10 pp[9]	0.10	0.10
Gross wage impact per person, EUR/year		724	547
Avg length of lifetime active period	The avg age of pilot participants is 25	35	35
Gross wage impact per person, EUR/active period	Active period is 35 years	25,326	19,152
No. of treated people	The No. of Roma people between 20 and 30 is 100,000, half men half women	50,000	50,000
Gross wage impact in the treated group, EUR/lifetime active period	The estimated 10 pp employment impact stays constant for 35 years, labour productivity is constant, discount rate equals to wage increase	1,266,300,000	957,600,000

[6] Note that these are rough simplifying assumptions at the moment, but will have to be verified at a later stage.
[7] A more sophisticated discounting scheme could be developed by Kertesi and Kézdi, 2006.
[8] This assumption could be modified to a lower consumption ratio (80 or 90%) to have a more conservative estimate; however, the consumption ratio on the lowest part of the income distribution is close to 1.
[9] As it is detailed before, we suggest to estimate two separate scenarios using the boundary values of the estimated 95% confidence intervals around the impact. For example, if the confidence intervals are [9.12;10.89], we suggest two estimate the two scenarios using 9.12 pp and 10.89 pp impact each.

Gross wage impact for men and women together, EUR/lifetime active period		2,223,900,000
Direct fiscal effects in income tax and contributions, paid by both the employee and the employer, EUR/lifetime active period	According to the 2017 tax schedule in Hungary, base tax schedule with no reductions	1,267,624,167
Direct fiscal effects in VAT, EUR/lifetime active period	Avg VAT rate from the net income, as calculated from above: 15%; all net income gained is consumed in the home country	6,338,125
Total fiscal effects in 35 years	No changes in the tax system	1,273,962,292
Macroeconomic gains in value added in 35 years	Employee compensation ratio is assumed to be 67.2%[10]	3,309,375,000
	Costs	
Pilot costs, EUR per person	Total budget: 2,039,082 EUR, No. of expected direct pilot beneficiaries: 355	5,743.9
Total for 100,000 people		574,389,296

The total compensation of employees in the Hungarian non-financial sector is about 2/3 or the total value added that is produced. Thus, we can assume that if firms take on extra employment, that would generate a higher increase in the production (value added) of the economy. Macroeconomic gains in value added are estimated using the share of employee compensation in total value added, which was 67.2% in 2015 the following way: 2,223,900,000/0.672=3,309,375,000, which is 3.3 billion EUR in 35 years. This method is taken from World Bank (2010); however, we have to emphasize but there is no causal relationship between employee compensation and value added in the sense that "hiring more people would increase value added". Firms' decision making process would probably work the other way round: they would increase their resources (such as the No. of employees) due to demand-side shocks, and then, due to the demand shock, they would produce more value added at the same time.

The same argument is true for the capacity of the economy to show demand for a given number of extra employees. The fact that in a small scale study a pilot program can generate 10 percentage points marginal employment effects, which would mean to hire 35 more people, does not necessarily hold on a large scale when the total labour market may be affected.

On the other hand, as mentioned before, these interventions may bring several other, non-quantifiable and hardly measurable impacts, such as more motivation to invest in education, may affect fertility choices and decrease criminal behaviour. This methodology cannot quantify these effects.

2.1.2 Economic costs

[10] The employee compansation ratio is the share of employee compensation in the total value added of the non-financial sector in Hungary in 2015. Source: Hungarian National Statistical Office, https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qpj001c.html

The economic costs of the pilot programs include direct and indirect cost. The indirect costs include the actual expenditures of running the programs and their related activities, research, communication, etc. In this project, we suggest to take the total costs of the proposal[11], and divide it by the number of participants in the study. According to our rough estimation, this would be 2,039,082/355= 5,743.9 EUR/person, and 5,743.9*100,000=5,743,900 EUR for the total 100,000-person target group.

Indirect costs include the alternative costs of program participation for the participants, i.e. the potential economic gain that they lost due to spending their time in the program. Assuming that people belonging to the target group are severely disadvantaged, their such opportunity costs would probably be low, and in this example we do not take them into consideration.

2.1.3 Economic gains and their comparison to other measures to increase the probability of employment

In this partly hypothetical example, the pilots scaled-up to 100,000 people would result in 10,000 more people working full-time in a blue-collar position for 35 years that would generate 3.3 billion EUR in macroeconomic level incomes while it would cost 0.6 billion EUR, resulting in a 2.7 billion EUR economic gain during a lifetime.

Two important considerations need to be taken into account when interpreting these numbers. First, such an estimation suffers a lot of problems and these are discussed in the next subsection. Second, having a positive balance does not necessarily mean that an intervention is a rational choice and should be supported by policy makers. The main argument for an intervention is not its effectiveness, but its efficiency: the policymaker should choose the intervention that brings the most results for the lowest cost. In this particular case, all pilot interventions are 1) different from each other, and 2) are very complex. Thus, it seems to be hard to identify what are the really effective and efficient elements of these packages, and, it is likely that their evaluations would show very different results as well.

2.2 CONCERNS AND COMMENTS ON THE METHODOLOGY AND ESTIMATION RESULTS

The following constraints need to be considered when using this methodology:

2.2.1 Measuring outcomes

The main outcome variable, whether one finds employment due to the program, includes formal (official) employment only. On the one hand, this is straightforward as informal employment would not produce fiscal benefits as informal incomes are not taxed. On the other hand, even informal employment may result in some benefits for the society, even if not as much as formal employment. It may be, for example, that informal employment is a gateway towards formal employment on the long run. However, we cannot quantify the benefits of informal employment in this study. In order to overcome this issue, the existing quantitative literature on the effect of informal jobs as a stepping-stone towards

[11] Another approach may be to take directly relevant costs into consideration only (WP4 + directly attached costs from tasks completed in other work packages).

formal employment will be studied, and some extrapolations based on this will be performed.

2.2.2 Uncertainty of estimated impacts

By construction, the impacts of the programs on the probability of employment are going to be estimated on very small samples. Thus, the estimated impacts are going to be uncertain (i.e., they will have large estimation errors), the suggested "pessimistic" and "optimistic" scenarios might be far from each other. While there is little we can do to mitigate this risk, rather we can present these alternative scenarios in a way which is easy to comprehend for policymakers.

2.2.3 Short- vs long-term impacts

In the project only short-term marginal effects can be estimated. Thus, even though one might observe a 10-percentage-point increase in the probability of employment due to a program one year after, we are not going to have information about whether this effects would prevail on the long run. In this methodology, we suggest to assume that the effects are linear, thus, they stay the same on the long run, but this is just an assumption and it is not known.[12] In order to make realistic projection of the potential results of the pilots, we will make use of existing literature surveys, such as (Card et al., 2017) to calibrate results.

2.2.4 Pilot studies versus large scale interventions

There are two issues with trying to extrapolate what the impact of a full national roll-out would be based on the small-scale pilots.

First, the interventions are aimed at specific target groups (employee profiles), and hence one cannot assume that they might be effective for *all* Roma. In order then to scale up the results, we will need to have an estimate of the potential number of persons affected, which is not necessarily easy to do, since we will have to estimate the number of Roma who might potentially benefit from the interventions. While only very few surveys which contain both ethnicity and other background variable exist, as far as possible, we will use these to have reliable estimates of the potential target group.

Second, it is not clear whether the same magnitude of effects for the participants will prevail in a large-scale roll-out as in a small-scale pilot. This might be due to the fact that the participants of the pilot (as well as the social workers, employment counsellors and employers) might be particularly motivated, and hence the potential positive effects of the pilot programmes are partially due to this selection. While this issue is possible, we will need to assume that no such tendencies exist.

Finally, as mentioned before, if such interventions happen on a large scale, they do not only affect their participants, but the total labour market as well. For example, if 100,000 new potential employees enter the labour market, that would affect wages, or, might decrease the employment prospects of other people who are similar in their individual characteristics but not covered by the program. In a small scale short term study, it is not possible to estimate such labour market effects, so we have to assume that they are not going to be

[12] Furthermore, this methodology suggests to estimate static effects only in the sense that it does not take demographic changes (i.e., the increasing share of Roma working age population) and effects through generations into account.

present. However, this is again just a simplification assumption and not something that we know.

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