Direct Job Creation:

The Case of Marginalized Roma in Slovakia

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Abstract

Our thesis provides comprehensive analyses of labor market policies and the employment situation of the Roma minority in Slovakia. The main goal of our analysis was to estimate the effect of participation in direct job creation in the public sector, an active labor market policy tool, on the employment outcomes of marginalized Roma participants. In order to do so, we obtained data about the Roma presence in the policy tool from the Survey of Income and Living Conditions of Marginalized Roma Communities for two time periods in 2018 and 2020. Due to missing data about the past experience of employment and participation in active labor market policy tools, we have to perform propensity score matching based on the observed demographic information, to compensate for parallel trend assumptions. Our final sample consists of 109 pairs of individuals sharing similar characteristics, among which we estimated the effect of the direct job creation tool by a counterfactual analysis of employment outcomes using logistic regression. We found a 6.8 percentage point decrease in the probability of employment among the participants in the tool, which is similar to the existing research on the topic. Therefore, we urge policymakers to adjust the direct job creation program according to the good practices provided by the study.

Acknowledgements

I would like to express my gratitude to Professor Martin Kahanec, who is the Slovak expert on labor market policies, for supervising me through the process of analysis and writing. I would also like to thank the other professors who helped me during the process, namely Marc Kaufmann, Anand Murugesan and Agnes Dios-Toth.

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Introduction

The introduction chapter first explains to its readers who the Roma are. It describes the origin of the Roma minority and its arrival in Europe. Then elaborate on their presence on the continent over the centuries and the harsh conditions that Roma are facing due to discrimination and rejection from society, known as marginalization.

The Roma are a culturally rich ethnic group with a history that spans centuries and continents. Originating in India, they migrated to Europe and have spread across the globe. As the largest stateless minority in the world, the Roma population is estimated to be approximately 11 million people (Mendizabal et. al., 2012). Despite their significant numbers, they remain one of the least known and understood minorities. They often face widespread discrimination and marginalization, which result in their lower employment rates, educational level, and hindered access to the health system and housing, which are some of the most important features that keep the generations of Roma population in poverty traps.

The Roma, also known as Gypsies in English-speaking countries, emerged in Europe by entering Balkan countries during the late Middle Ages (Crowe, 2003). They were initially associated with Egyptians, hence their name "Gypsies." However, linguistic, anthropological, and genetic analyses suggest their roots trace back to northern India (Martínez-Cruz et. al., 2015) with a diaspora from the subcontinent approximately 1000 years ago from the Punjab and Rajasthan regions of India (Renard et. al., 2007) due to Muslim invasions (Crowe, 2003).

In their early years in Europe, the Roma continued to live a nomadic lifestyle, receiving recognition for their seasonal presence in towns and villages and the provision of services to local residents. Men typically work in physically demanding occupations such as blacksmithing

and gunsmithing, while women are traditionally engaged in fortune-telling. Many Roma were musicians as well. Subsequently, the Ottoman Empire's invasions of the Balkans in the 14th century started a shift in perception towards the Roma due to their dark skin associated with that of the Turks, leading to negative attitudes (Crowe, 2003).

Over time, the cohabitation of the Roma with Europeans deteriorated. In many non-Ottoman regions of Europe, authorities violently suppressed Romani movements to either prevent their settlement or exploit them as forced labor. In Romania, the Roma were enslaved by the kings from the 14th to the 19th centuries until the Enlightenment era, when in 1864, approximately 250,000 Roma slaves were emancipated (Renard et al., 2007).

In Central Europe, the earliest documented evidence of Roma presence dates back to the 15th century, as recorded by non-Romani scholars. Due to their marginalization, the Roma population remained illiterate, and their history was passed on orally to new generations (Crowe, 2003). This began to change in the 18th century, with the start of the Enlightenment in Europe. Charles VI, the Holy Roman Emperor, granted the Roma in Hungary and Transylvania (a region of Romania where Roma were not enslaved) the right to settle in order to assimilate into society and pay taxes. This policy of assimilation, rather than integration, persisted during the rule of Maria Theresa and her son Joseph II, who tried to educate Roma children and raise them in Catholic families (Crowe, 2003). These measures aim to erase Romani culture. Despite their efforts, the Roma community preserved its cultural identity.

Furthermore, Europe has witnessed cruel policies even in the modern era. In the 19th century, with the rise of the Nazi regime, hatred towards the Roma led to their extermination and imprisonment in concentration camps. Estimates suggest that up to 800,000 Roma died due to

the horrors of World War II (Renard et al., 2007). Following the genocide, the communist era meant forced assimilation for Roma. Roma culture and language were restricted. Moreover, in Czechoslovakia, MR were labeled as "socially degraded" individuals. And in an effort to regulate the Roma population, Roma women were forced to undergo sterilization. Examples of such practices continued as late as 2004 in both the Czech and Slovak Republics (Renard et al., 2007).

Based on the mentioned as well as undocumented crimes against the Roma minority, Romani proved their tenacity; however, till the present, they have not found equal place in society. According to Musinka et al. (2014), 58% of the Roma population in Slovakia is marginalized, living on the outskirts of towns and villages in communities designed to be occupied exclusively by the Roma population. Such a geographical and social separation contributes to their lower life standards than in the majority. Markovic and Placha (2020), who offer insights into the employment situation, indicate a self-declared employment rate of 64% among integrated Roma individuals and 33% among those marginalized, in contrast to Slovakia's overall unemployment rate, which remains below 10%. As a result of such a gap in employment, the Fundamental Rights Agency (FRA) (2016) points out that 87% of Slovakia's Roma population lives below the poverty line, with only 43% of the working-age Roma reporting a paid job in the previous month. In addition, the average life expectancy among MRCs is 7 years lower than that of the majority (Musinka et al., 2014).

The economic outcomes of the Roma population are shocking, as are every other important aspect of life, including housing, education, and health, although those aspects are beyond the scope of our research. Nevertheless, Slovakia, like other European countries, supports those in undesirable living conditions through social welfare transfers and measures to ease access to the labor market. Although these measures of policy do not target the Roma

population specifically, they do target long-term unemployment, where Roma individuals often find themselves.

However, the effectiveness of employed policies is in question due to the tremendous difference in employment levels between the MR and Slovak majority. We believe there is urgency for such an investigation. Slovakia, in 2004, the year of Slovakia's entrance to the European Union, implemented direct job creation (DJC) in public sector activation programs, as known in Slovak literature as a labor market intervention. With the purpose of activating long-term unemployed individuals. and have since served as a tool to address unemployment among low-skilled workers.

The literature shows consensus on the negative effects of DJC on employment outcomes (Kluve's, 2006; Card et al., 2010; Havran, 2011; Borik & Caban, 2013; Laicakova, 2017; Petras, 2020; Pisar & Mertinkova, 2020). Hohmeyer and Wolff (2010) define DJC schemes as means to activate welfare recipients by providing additional job opportunities of public interest to individuals facing difficulties in finding employment. These schemes focus on upskilling long-term unemployed individuals and testing their willingness to work. To question their effectiveness, authors, based on a study of DJC in Germany between 2005 and 2008, concluded that the effect of DJC schemes does not decrease participants' welfare dependency even in the long run.

Nevertheless, of proven efficacy of DJC. In Slovakia and since its establishment, DJC has served as a tool to address unemployment among low-skilled workers. In addition, the tool is overrepresented by the MR population due to the exclusionary nature of policy instruments.

Therefore, our thesis delves into the impact of DJC on the employment status of the MR population in Slovakia.

Due to the limited availability of data on Roma employment, as highlighted by Kahanec et al. (2020), the primary source in Slovakia is the Survey of Income and Living Conditions (SILC) specific to the MR community, conducted for the years 2018 and 2020. The SILC gathers comprehensive information about the economic conditions of the MR, including employment status and participation in DJC programs.

To address the research question, we conducted a counterfactual analysis of participation in the DJC employing the statistical method Difference in Differences. In order to achieve it, We first merged both Excel spreadsheets from two years of observation based on a common identification column, resulting in a dataset comprising 712 observations of the identical MR individuals who participated in both observations.

Followingly, given the absence of pre-treatment data regarding MR participants in DJC programs, efforts were made to ensure comparability between treatment and control groups. This involved estimating the likelihood of being treated and the participation in DJC in the 12 months prior to the second observation in 2020. To avoid biases in our results, we included in the estimation only those who did not participate in the DJC 12 months prior to the first observation in 2018. To assess the likelihood of being in the treated group, we used logistic regression, considering demographic characteristics such as age, gender, health status, and the proportion of the Roma population in the individual's district of habitat.

Subsequently, individuals who participated in the treatment were matched with non-participants based on their propensity scores, resulting in 109 pairs of observations. After

achieving balance between the treatment and control groups, we again employed logistic regression to examine the change in employment from 2018 conditioned on participation in the DJC instrument 12 months prior to 2020 on the employment outcomes in 2020.

This analytical approach allowed for a rigorous assessment of the impact of DJC programs on MR employment. Despite the limitations in data availability, we were able to estimate the effect of DJC on the employment of Roma, specifically those marginalized, by using a representative control group.

Following the introduction chapter, the thesis delves into the further assessment of the literature regarding labor policy instruments and their effect on employment. Combining with Slovak literature about the effect of policy instruments, including DJC, on MRC. Subsequent chapters then closely describe our dataset, consisting of SILC from 2018 and 2020, and methodology to leverage information about MR employment and participation in DJC. Then we present results from counterfactual analysis and discuss them in the context of existing literature. Finally, we provide a brief conclusion and relevant recommendations for policymakers to address the gap in employment level between Roma and the Slovak majority.

Literature review

The literature review chapter describes the importance of labor market policies (LMP) and divides them based on their purpose between passive and active ones. Additionally, it compares their effectiveness based on their research conducted over several decades. Further, it takes a closer look at active LMPs, where the policy instrument of our interest, DJC, belongs. Finally, the chapter investigates the impact of DJC on MR employment outcomes, combining mainly Slovak literature and providing examples of wrong as well as good practices of DJC implementation.

Unemployed can be downsized by adjustments to labor market inefficiencies, underlines the IMF report from 2007. The author highlights Europe's struggles with a sharp rise in unemployment rates during the 1970s and 1980s. Those were attributed to the mismatches in labor skills between supply and demand, excessive wages, and rigid labor market institutions. To tackle those mismatches, governments implemented labor market policies (LMPs). These individual active LMPs were tailored to enhance the demanded labor skills of the workforce, reduce firms' labor costs, and improve job search efficacy. As a result of these LMPs, Europe witnessed a decline in unemployment during the 1990s (Estevão, 2007).

In contrast to active ones, passive LMPs were already introduced in Europe during the early 20th century (Pisar & Mertinkova, 2020) and have since become a significant component of LMPs. These passive LMPs involve government transfers from the public budget to the unemployed in order to ease their financial problems during the search for employment. However, as Churchill and Yew (2017) describe, there exists a trade-off between social protection and economic efficacy, which can potentially hinder economic growth. It is generally

believed that such government transfers have adverse effects on firms' investments in increased production and on workers' willingness to extend their working hours due to the progressive taxation system, which imposes higher taxes as incomes rise (Churchill & Yew, 2017).

Contrary to conventional belief, Glomm et al. (2008) demonstrated that government transfers do not have a linear impact on economic growth. Specifically, if government transfers are set at a reasonable threshold, the government's investment in social capital can offset its potential drawbacks. Additionally, Churchill and Yew (2017) found that government transfers tend to have more negative effects on economic growth when they are overly generous in developed countries compared to developing ones, due to the non-monotonic effect of social capital on economic growth.

As the proportion of MR individuals living below the poverty threshold in European countries is significantly higher than the proportion of the majority population living in poverty (Milcher, 2006), Passive LMPs should not be associated with economic inefficiency or labeled as exploitation of the welfare system by the unemployed Roma population, as is often perceived by society. Specifically, in Slovakia, the proportion of MR living in poverty accounts for 87%, whereas the proportion of the Slovak majority in poverty is 11% (Markovič & Plachá, 2020). Therefore, the living standards of MR communities more closely resemble those in developing countries than in developed ones.

On the other hand, long-term dependency on the welfare system negatively correlates with the chance of escaping unemployment (Carpentier et al., 2014). Long-term unemployment has negative consequences both on an individual level, where human capital depreciates during inactivity, and on a national level, where it jeopardizes the sustainability of social protection.

Moreover, the long-term unemployed may face social exclusion (Hohmayer & Lietzmann, 2020). This is typical for marginalized communities, including the Roma minority in Slovakia and other European countries, leaving the Roma population in generational poverty.

To address the dependency of the Roma minority on the welfare system, neither the Slovak government nor other European countries use targeted policies specific to the Roma. Instead, they seek to activate the long-term unemployed by implementing active LMPs. Heckman et al. (1999) categorize active LMPs into several categories, such as classroom training, subsidized employment (including direct job creation (DJC) in the public sector), subsidies to private firms, training on job searching, and direct support for job search.

To assess the effectiveness of individual active LMPs, the literature shows agreement that job search assistance has a positive effect on employment and a negative effect on DJC. For example, Kluve (2006), in his meta-analysis of more than 100 European studies, found that traditional "classroom" trainings have a modest positive impact on employment. On the other hand, subsidies to private firms and job search support increase employment by 40 to 50 percentage points (p.p.). While DJC decreases the probability of employment by 30 to 40 p.p. Moreover, the authors highlight that these outcomes were consistent across different countries and business cycles.

Supporting Kluve's (2006) findings about DJC. Card et al. (2010), in their working paper, conducted a meta-analysis of 97 econometric studies dated from 1995 to 2007 and concluded that DJC negatively affects employment. While job search assistance has a positive effect on employment, Training programs, both "classroom" and job search-focused, yield positive impacts, although in the medium term rather than the short term. Card et al. (2010), in a

later revision from 2015, added that active LMPs are sensitive to business cycles and yield better results during recessions, in contrast to Kluve (2006).

However, in contrary to Card et. al. (2010) and Kluve A more recent meta-analysis by Vooren et al. (2018), comparing 57 active LMP evaluation studies between 1990 and 2017, claims that subsidized labor and public employment programs were both found to have negative short-term impacts, which gradually turned positive in the longer run. While supporting previous findings that job search support and training have a positive effect on employment.

Nevertheless, of evidence against the DJC, The tool serves as a crucial income source for unemployed MR families. Despite the government's attempts to promote more effective active LMPs such as self-employment and start-up incentives, Roma individuals are discouraged from utilizing this allowance by labor offices, and there is a lack of training on self-employment skills for the unemployed. Educational programs, while effective in developing skills for the labor market, often require secondary education for participation. However, full-time education poses a challenge for the MR population due to the loss of social support. Moreover, while DJC offers limited upskilling opportunities for participants, the tasks assigned to majority participants typically involve higher added value, such as assisting in schools, whereas Roma recipients are often assigned physically demanding tasks (Kurekova, 2015).

What underlines the need for a reconstruction of active LMPs in Slovakia (Messing, 2013). According to Pisar and Mertinkova (2020), utilizing EUROSTAT data from 2019, Slovakia invested a higher proportion of GDP into passive instruments rather than active ones. Additionally, in the same year, Slovakia had the sixth-lowest funding for active LMPs in the EU, comprising only 0.2% of GDP. Moreover, the active LMPs, where Slovakia invested the most

funding, dedicated all active LMPs to employment incentives, which were found effective only in the short term. The most effective policies in Slovakia, according to the authors, are in the field of education. Conversely, DJC was identified as the least effective instrument, with Slovakia investing the least amount of funding in active LMPs for this purpose.

In addition, Pisar and Mertinkova (2020) compared the job prospects of unemployed individuals participating in DJC with those who did not. The author found that participation in DJC decreased the chances of employment by 6.3%. Similarly, according to the UNDP, only 11.6% of the Roma participants and 7.1% of the MR ones leave DJC due to employment, while 38.9% of majority participants do leave due to employment (Laicakova, 2017).

To support previous findings about the impact of DJC specific to Slovakia, a larger study conducted by the Ministry of Work in Slovakia, examining 40,000 graduates of DJC, reveals that only 20% of participants have a chance of finding a job, and only 6% of those who find employment can keep it for more than a year (Borik & Caban, 2013). Additionally, Petras (2020), who analyzed pre-Covid unemployment data for the MR in Slovakia, finds that DJCs' participants are 2 percentage points less likely to be employed 12 months after participation compared to nonparticipants.

On the other hand, in addition to the global inefficacy of DJC to improve the employment level of the MR population, Kurekova (2015) found some good examples of DJC usage, which were positively perceived either by major municipalities or MR participants themselves. For example, the author reports a municipality where MR participants in the DJC tool were included as the labor force in the municipality's social enterprise. The enterprise produces the bricks used for local construction, where MR participants work with actual employees, learning useful skills

that could be valuable for the labor market. In addition, as to examples of good practices of DJC, the effectiveness of the toll is elevated when a social worker is present in the workplace, ensuring equal representation of Roma in upskilling tasks as well as tutoring activities in schools and retirement homes.

To summarize findings about the active LMP literature, it may be ambiguous about the most effective tool due to country-specific characteristics and the business cycle. Whereas, to the account of DJC, studies from abroad as well as from Slovakia consent that DJC has an average negative effect on employment. In addition, participation in DJC poses an opportunity cost for participants as their time is not spent searching for a job, prolonging their dependency on social welfare. Especially in the case of MR, who often relies on DJC allowance as an important source of income. All of which underlying DJC nature as passive LMPs to generate additional income without added value in developing demand skills, especially if participation in DJC does not follow good practices.

Data and Methodology

The data and methodology chapter first describes the data sources used to obtain information about the presence of MR participants in the DJC program. Secondly, it explains the methodological framework used to estimate the effect of the DJC program on the employment outcomes of MR.

At the beginning of the analysis, to access data about MR participation in the DJC program, we are using the Surveys of Income and Living Conditions (SILC) for marginalized Roma communities (MRC), conducted in 2018 and 2020. The SILC MRC is a result of the cooperation between the Statistical Office of Slovakia, the Office of the Plenipotentiary of the Government of the Slovak Republic for Roma Communities (OPGSRRC), and the European Agency for Fundamental Rights (FRA), located in Vienna, Austria. The SILC MRC sheds light on financial, employment, educational, and housing outcomes and conditions for the MRC in Slovakia.

What makes the SILC MRC relevant for our thesis is its focus on the participation of MR individuals in the DJC program. According to the SILC MRC, there are 230,000 Roma in Slovakia who are considered marginalized. The SILC MRC investigates over 1,000 MR households, comprising 5,000 individuals, of whom 2,600 are older than 16 years. Based on the identification column number, we can obtain information about 712 individuals who participated in the survey in both time periods, in 2018 and 2020.To examine changes in their employment outcomes conditioned on participation in the DJC program 12 months prior to each observation, we excluded from analysis those who participated in DJC before the first observation in 2018 to avoid biases in our results due to double treatment. Due to filtering, we kept 579 MR individuals

and visualized their most important characteristics in the following figures: As the result of Figure 1 shows, 108 individuals were employed, including self-employment, since the first observation in 2018.

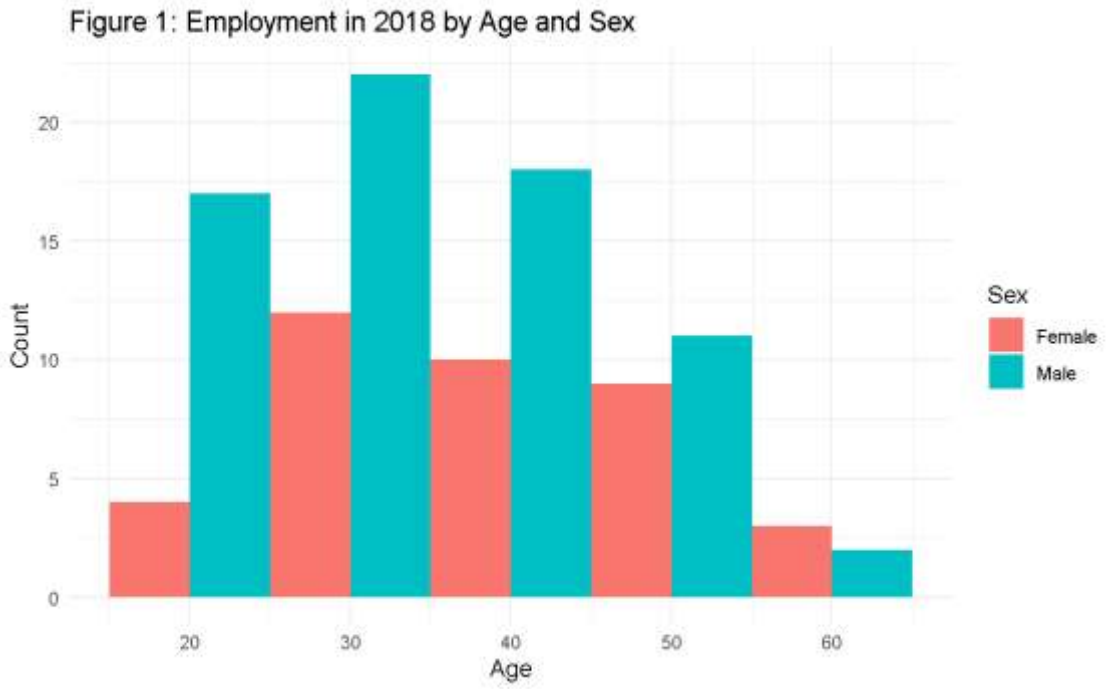
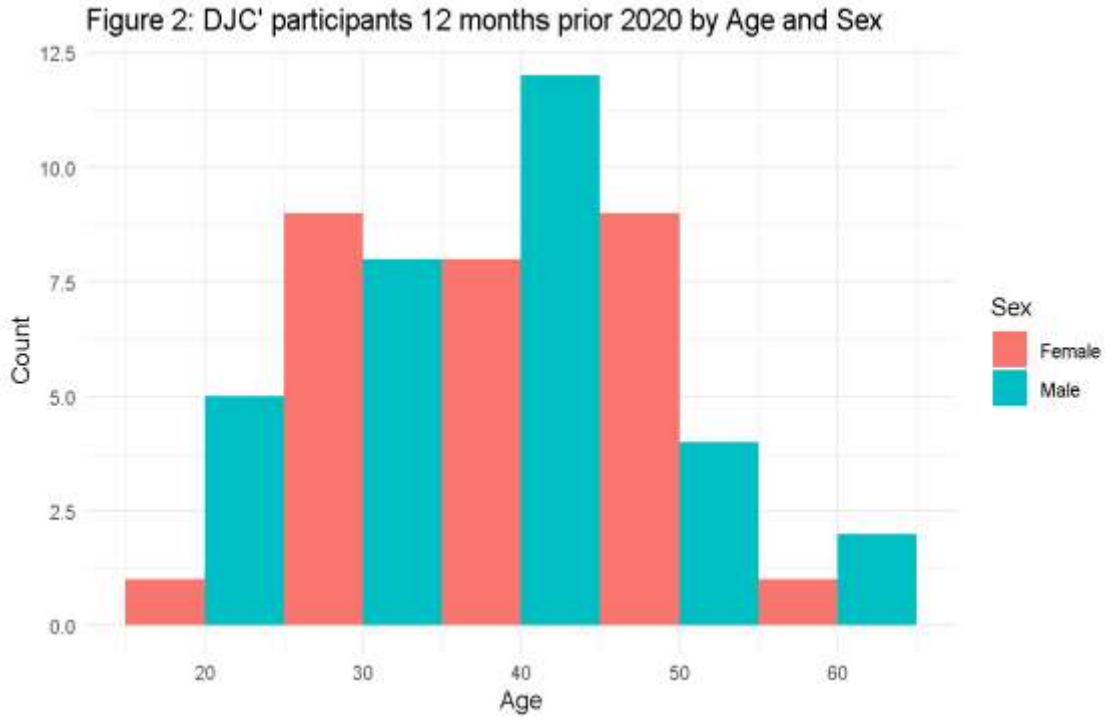
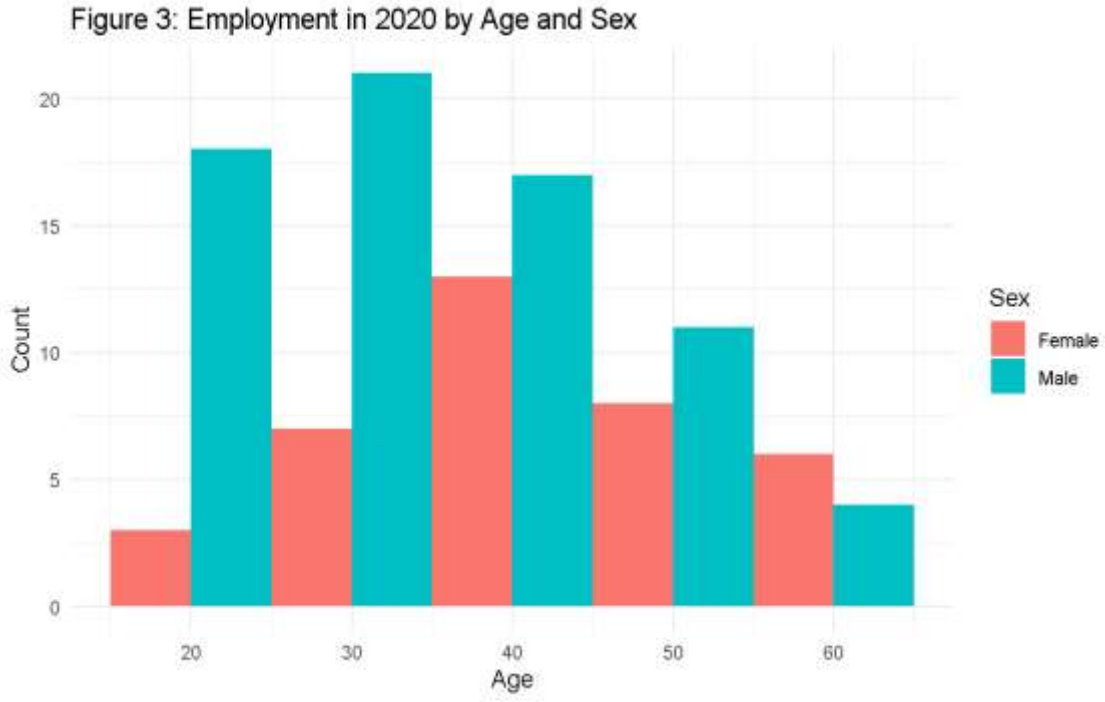


Figure 1 further points out the age and sex of MR individuals, concluding that employment substantially differs in favor of males, until their fifties, when their employment dropped to that of females.

Regarding the participation of DJC 12 prior to the second observation of SILC MRC in 2020, it can be seen in Figure 2 that 59 MR individuals participated in the program. In comparison with the employment situation in 2018, the distribution of males and females was approximately equal among those in their thirties to forties. Whereas participants in their twenties overrepresented females, this changed conversely among those in their fifties.



Finally, Figure 3 describing the employment situation after participation in the DJC program shows similar results to those before participation. The number of employees was again 108, and males overrepresented females, but only to their fifties.



Despite SILC MRC coverage, the dataset has several gaps. The surveys indicate participation in the DJC program only during the last 12 months before each observation, not the absolute one, as participants who are unable to find employment after completion can continue in the program.

In addition to SILC MRC gaps, when comparing changes in employment from 2018 to 2020 conditioned on participation in the DJC, we are also unintentionally including the effect of the COVID-19 pandemic on employment outcomes. We can see from the figure 4 created by Macrotrend (n.d.) that the overall employment level in Slovakia dropped in 2020; specifically, the unemployment rate increased by almost one percentage point, from 6.72% in 2019 to 6.89% in 2020 (Slovak Republic Unemployment Rate 1960–2024, n.d.). This means that minority members, including the Roma minority, may have experienced even worse impacts on their existing employment (Auer, 2022).

The methodology part of the chapter describes the methodological framework used to estimate the effect of the DJC program on the employment outcomes of MR. The analysis utilized data from SILC MRC, supplemented with district-level statistics about the proportion of the Roma population, according to Suvada (2015).

To ensure that datasets are free from inconsistencies, we performed data cleaning. After importing data frames from both time periods, we selected important columns and gave them appropriate names, such as *ID, employment status, participation in DJC,* and demographic information about *sex, age,* and *health* status. Following the selection of variables of interest, we joined tables based on identification columns and gave them suffixes representing the year of the survey. Next, in the merged table, we created new variables appropriate for logistic regression.

We created dummy outcome variables indicating employment (including self-employment). Next, we included binary independent variable participation in DJC labeled as *treatment*.

To analyze the counterfactual outcome of the treatment, we defined the treatment group, choosing individuals from MRC who participated in the DJC program 12 months prior to surveying in 2020 and did not participate in the program year before surveying in 2018. Followed by the creation of the control group by choosing individuals who share similar characteristics with those in the treatment group and did not participate in the program prior to 2018 or in 2020. This distinction allows us to compare employment outcomes between those who participated in the treatment and those who did not.

Given the absence of pretreatment data about participation in programs and employment, we employed propensity score matching (PSM) to address potential selection bias and ensure comparability between the treatment and control groups. This involved using logistic regression to estimate the likelihood of ending up in the treatment group based on demographic characteristics such as age, gender, health, and the district's proportion of the Roma population. During the matching process, we implemented the method of nearest neighbor to pair the treated individuals with the control ones who have a similar propensity score. Furthermore, we evaluated the balance of covariates between matched groups to ensure comparability.

After data preparation, we applied the Difference-in-Differences (DiD) method to estimate the effect of the treatment on employment outcomes. This approach compares changes in employment status between 2018 and 2020 for the treatment and control groups conditioned on the treatment, including several covariates. The DiD model is specified as follows:

$$\text{Logit (Employedit)} = \beta_0 + \beta_1 \times \text{Treatment}_i + \beta_2 \times \text{Time}_t + \beta_3 \times (\text{Treatment}_i \times \text{Time}_t) +$$

$$+ \beta_4 \times \text{Age}_i + \beta_5 \times \text{Sex}_i + \beta_6 \times \text{Prop}_i + \epsilon_{it}$$

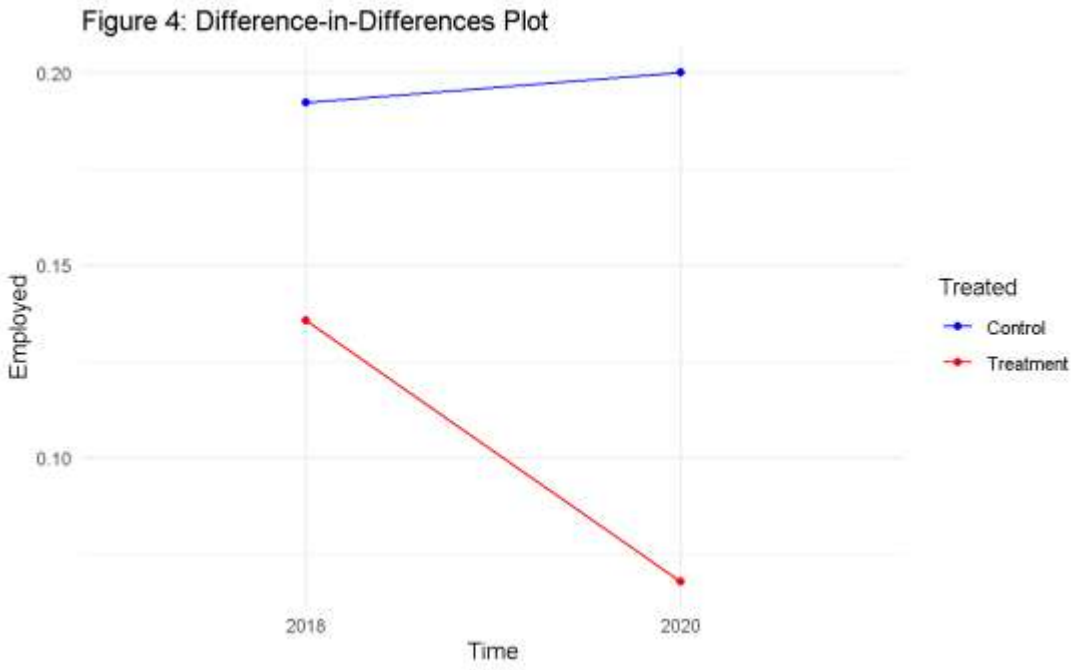
Where Employed_{it} is the binary dependent variable indicating employment status for individual i at time t,. Similarly, β_0 is the intercept, representing the probability of employment for the control group in the pre-treatment period (2018). β_1 is the coefficient for binary variable Treatmenti, indicating a difference in the probability of employment between the treatment group and the control group in the pre-treatment period. β_2 is the coefficient for the binary variable Time_t, representing the change in the probability of employment from the pre-treatment period to the post-treatment period (2020) for individuals in the control group. β_3 is the coefficient for the interaction term between Treatment_i and Time_t, capturing the DiD effect and the impact of the treatment.

To control the confounding effects that may have an impact on our dependent variable in the model, we add several covariates representing the demographic information about our participants. Where β_4 is the coefficient for the numeric variable Age indicates the effect of an individual's age on the probability of being employed, holding all other variables constant as well as all other covariates. Continuing with *β5,* what is the coefficient for the binary variable sex (1=male, 0=female), measuring the effect of an individual's sex on its probability of being employed? β_6 is the coefficient for the numeric variable Prop, measuring the effect of the proportion of Roma population in the individual's district. Finally, it is the error term that captures all other factors affecting the employment status of an individual at the time.

Results and Discussion

The results and discussion chapter presents the results of the counterfactual analysis following a discussion of our results. We further compare them to existing knowledge while simultaneously pointing out the main limitation of our analysis.

Our main goal of the analysis is to assess whether participation in the DJC program, in the treatment, significantly affects the employment status of MR participants. Firstly, to see the change in employment, we created a line plot to compare the employment status of MR individuals who participated in the treatment against the control group. The visualization provides a basic understanding of the change in employment outcomes, as depicted in Figure 4.



The line plot displays the ratio of employed individuals before and after the treatment, which had been happening 12 months prior to SILC MRC observation in 2020. Employment status is

differentiated by colour, with red representing the "treated" and blue representing the "control" group. From the plot, it is obvious that MR individuals who participated in the treatment lack employment compared to those who did not.

This preliminary visual insight from Figure 4 sets the stage for the more detailed quantitative analysis provided by the multiple logistic regression output. Table 1. provides log odds coefficients and standard errors for the variables included in the analysis.

Table 1

	Dependent variable:
	employed
treatment	−0.589
	(0.501)
time2020	0.005
	(0.637)
age	0.009
	(0.016)
sex	0.730*
	(0.386)
health	−0.426
	(0.616)
prop	0.001
	(0.023)
treatment:time2020	−1.231
	(0.852)
Constant	−1.638
	(1.042)
Observations	218
Log Likelihood	−92.324
Akaike Inf. Crit.	200.649
Note:	*p<0.1; **p<0.05; ***p<0.01

To interpret the log odds coefficient of logistic regression in terms of probabilities, we followed the provided formula, where β_x represents the log odds coefficient:

$$\text{Probability} = \frac{e^{\beta}}{1 + e^{\beta}}$$

Table 2: Log Odds Coefficients and Probabilities

Variable	Log Odds Coefficient	Probability
Intercept	-1.638	0.162
Treatment	-0.589	0.098
Age	0.009	0.16
Sex	0.730*	0.287*
Health	-0.426	0.113
Prop	0.001	0.26
Time2020	0.005	0.163
Interaction (Treatment:Time2020)	-1.231	0.03

Table 2 represents our final results, interpretable in terms of pp. Accordingly, the probability of employment in the control group before the treatment represented by the intercept or constant is approximately 16.2% when all other variables are set to zero. The treatment coefficient, indicating the probability of employment before the treatment among the treated group, is approximately 9.8%, thus 6.4 pp lower than in the control group, holding all variables constant. The time coefficient, showing the probability of employment for the control group after the treatment, is approximately 16.3%, indicating a negligible increase in employment by 0.1 pp, holding all other variables constant. The interaction coefficient, treatment: time, points out that the probability of employment after the treatment among the treated group is approximately 3%, indicating the effect of the treatment on employment by a decrease of 6.8 pp. However, due

to large standard errors, neither of our main findings is statistically significant at conventional levels.

To the account of covariates. The probability of employment increases by approximately 16% with every additional year in the age of the participant, holding all other variables constant. In addition, the probability of employment differs among sex categories, indicating an increase of approximately 29% in the case of males, and the coefficient is significant at the 10% level. Health problems as well are expected to increase the probability of the employment by approximately 11%. Finally, the one pp increase in the proportion of Roma in the participant's district is expected to increase employment by approximately 26%.

Our results suggest that participation in DJC is expected to decrease the probability of employment for MR individuals by 6.8 pp; however, we lack statistical evidence due to the large standard error. Only one significant result is that being a male in our sample increases the probability of employment by 29%. What is in line with our figure 4 shows a decrease in employment among the threatened, while the control group was able to keep employment level despite the start of the pandemic. Based on figures 1 and 3, we also saw a disproportional representation of females among those employed in the bot observations of the SILC MRC.

Overall estimated similar effect of DJC to those in existing literature, which indicates the negative effects of DJC programs. Kluve (2006) and Card et al. (2010) found that DJC negatively affects employment by 30 to 40 pp and 6.8 pp, respectively. Hohmeyer and Wolff (2010) and Vooren et al. (2018) also highlight the negative impact of DJC on employment outcomes. Although the mentioned authors do not specifically focus on the Roma minority, research on the DJC effect on the Roma minority in Slovakia confirms its negative impact on

employment as well. Studies by Havran (2011), Borik & Caban (2013), Laicakova (2017), and Pisar & Mertinkova (2020) all indicate negative impacts. For example, Petras (2020), using pre-Covid SILC MRC observation, showed a 2 pp decrease in the probability of employment for DJC participants compared to non-participants.

Despite our findings being in line with existing literature, our results face several limitations, which contribute to the lack of statistical power. The primary limitation of our study is the small sample size. We also do not have data about MR participation in DJC before 2018, which could estimate the effect of the COVID pandemic, due to which employment decreased in Slovakia overall.

In addition to the sample size, potential measurement errors in self-reported data could lead to biases. For example, the wrong indication of the health problems and proportion of the MR population in the districts are intuitively expected to have a negative effect on employment. Furthermore, our study primarily captures short-term effects, while the literature suggests that DJC might have different impacts in the long run, as pointed out by Vooren et al. (2018). Moreover, the limited number of control variables might have omitted important factors influencing employment outcomes, such as education levels, work experience, and local economic conditions.

Despite the limitations of our study, we propose further research on active LMPs. Future research should focus on longitudinal studies, which would capture the long-term effects of DJC and other active LMPs on employment outcomes. Secondly, research should investigate the impact of active LMPs on Roma minorities in countries similar to Slovakia, such as Hungary, Romania, and Bulgaria, in order to fill the gaps in the Slovak data about MR in active LMPs

Conclusion and Policy Recommendations

In conclusion, our study contributes to the body of evidence suggesting that DJC has negative effectiveness on employment outcomes MRC in Slovakia. Our results follow with broader research trends, the lack of statistical power underscores the need for more additional research incorporating larger sample sizes, long-term impacts, and more detailed control variables.

Policymakers should consider existing evidence as well as our findings, to redesign DJC programs and other active LMPs, in order to activate long term unemployed. This could involve incorporating upskilling activities, for example in construction within DJC schemes to improve skill development and employment prospects. In addition, social workers should be present in the working place to ensure equality of opportunity in distribution of activities.

Moreover, Slovak government should invest higher proportion of GDP to its active LMPs. In addition, Slovakia should adjust its funding of active LMPs as education policy have shown the most positive impacts on employment, whereas Slovakia invests the most funding in less effective policy, employment incentives. Moreover, active LMPs should provide targeted support for vulnerable groups, including the Roma minority, to address their unique barriers to employment. This could involve tailored training programs, support for self-employment, and measures to combat discrimination in the labor market.

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