

# **EDUCATION, SOCIAL ASSISTANCE AND EMPLOYMENT DYNAMICS: A PANEL DATA APPROACH**

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## **Abstract:**

In recent years there have been increases in social transfer payments to provide disadvantaged citizens a minimum of resources for them to have a decent standard of living. Existing literature agrees that social assistance programs are generally successful in poverty mitigation efforts. However, social transfer programs may also have unintended consequences such as the reduction in the labour force participation rates. When social assistance payment is made, an economic agent may prefer utility-generating activities rather than wage labour. Thus, economic agent may reduce the working hours and may opt for domestic production or leisure. Therefore, it is plausible that labour supply and social assistance participation decisions may be made simultaneously in order to maximize utility subject to a budget constraint. The aim of this study is to explore the factors associated with the preference for utility-generating activities rather than wage labour by employing microeconomic methods, which will result in policy recommendations for social assistance and employment policies. The issue is investigated by employing a bivariate panel probit model and utilizing Income and Living Conditions panel data belonging to 2010-2013. In addition to exploring the association of social assistance program participation and employment decision, impact of education on both variables has also been explored. Empirical results indicate that the more one works, the less one participates in social transfer program, and vice versa. Additionally, age, gender, household type and composition impact decision making process of individuals.

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## **1. Introduction**

Going into the 21<sup>st</sup> century, poverty unfortunately maintains being one of the biggest problems the globe needs to eradicate. In recent decades, social assistance programs have been utilized in the fight against poverty by many countries, developed and developing alike. Around the globe structural factors, such as unemployment, deindustrialization, labor informalization, aging and the increase of the share of the service sector as well as their main target, the rise of poverty, are usually counted for the reasons of the increase in the popularity of these programs (Pierson, 1991; Keyder and Buğra, 2003; Yörük, 2012). In this aspect, Turkey is considered to be similar to the Southern European countries, where family has a traditionally important role in the welfare regime of the country (Gough, 1996; Saraceno, 2002). However, the factors of the current socio-economic climate, like urbanization and unemployment, and also the increasing life expectancy, means that merely Turkish citizens cannot be protected merely by traditional mechanisms of welfare (Grütjen, 2008). Hence, the state must take an active role in protecting the growing poor and this is done via social assistance policies. One of the milestones was in 2001, when the Social Risk Mitigation Project was implemented with the goal of empowering and expanding the available social safety net programs in Turkey so that the effect of the economic crisis of 2001 could be alleviated from the poor households and they could better withstand such turmoil in the future. The time horizon of the initial program has since been extended beyond 2001.

While they are crucial in the fight against poverty, social transfer programs can have repercussions. Recipients may choose to stay out of employment which in turn may result in higher ratios of population being dependent on these programs and the labour force getting smaller. They can even find themselves in a negative self-reinforcing spiral as Esping-Andersen (1996); wherein the more people get these transfers the more people need it.

There is a vast literature on the social assistance programs, which is mostly focused on its intended effect of fighting against poverty. The side effect on the labour market is a topic that has started to receive attention in the more recent years. There are several important areas studies at the intersection of social benefits and labour have focused on; how they affect the individual or household's decisions on employment, whether they create a propensity to come back into dependence and if it does, whether it stems from the innate design of said program or not. The later effects of receiving benefit on individuals' wages and chances in employment are other areas that are examined.

The aim of this paper is to contribute to existing literature by investigating the impact of social assistance program participation on employment and the effect education has on both, with a focus on state dependence for Turkey. Income and Living Conditions panel data from the Turkish Statistical Institute for the 2010 – 2013 period is utilized in the analysis. In order to assess the degree of persistence, a dynamic random effects probit model is estimated controlling for social assistance program participation status, observed, and unobserved individual characteristics. Empirical results indicate that gender, educational attainment, occupation, and educational background have statistically significant impact on the probability of employment. Besides experiencing poverty has a negative impact on future employment likelihood. Moreover state dependence is an important influence on employment likelihood, revealing the presence of scarring effect.

## **2. Literature Review**

An effective tool in combating poverty social assistance programs may be, but studies on their effectiveness in achieving this goal and their consequent effects constitute a vast literature.

Moffitt (2002), Meghir and Phillips (2008) and Moffitt and Scholz (2009) study social assistance programs in developed countries. They revealed the existence of work disincentives among recipient households, and along with other considerations have prompted recent reforms that have incorporated sophisticated measures to mitigate these negative effects (Moffitt 2002; Blundell and Hoynes 2004; Dickens et al. 2004; Michalopoulos et al. 2005). Their focal programs have been conditional cash transfer (CCT) programs. These combine monetary benefits with incentives for curbing child labor and fostering the accumulation of human capital, where benefit receipt is conditioned on a series of verifiable conditions, such as school attendance, vaccination, and regular medical checkups, among others. For United States Danziger et al. (1981), Moffitt (1992) and Hoynes and Schanzenbach (2012) provide empirical evidence that US income transfer programs generate nontrivial work disincentives. Lemieux and Milligan (2004) analyze the social assistance payments for those under 30 in Quebec and report that social assistance decreases the employment probability for less-educated men without dependent children.

Meanwhile, the several reports on Latin America, where social transfer programs are extensively implemented indicate that cash transfers, especially when combined with conditionalities, have been successful in increasing welfare and human capital accumulation in recipient households and in reducing child labor (see the reviews by Rawlings and Rubio (2003,

2005) and Fiszbein and Schady (2009)). However, impact evaluation studies for the Latin American countries provide conflicting evidence regarding the employment effects of social assistance programs both across countries and for the same country. Empirical evidence indicates that social transfer programs have no impact on adult labour force participation (Parker and Skoufias, 2000; Skoufias et al., 2001; Attanasio et al., 2006; Skoufias and Di Maro, 2008; Edmonds and Schady, 2008; Foguel and Barros, 2010; Alzúa et al., 2013), whereas for Chile a positive and significant effect on labour force participation in rural areas has been reported by Galasso (2006). Utilizing data for Nicaragua, Maluccio (2007) reports a statistically significant small negative effect on total household hours of work, with a more pronounced negative impact on the amount of time spent in agricultural activities. Cavalcanti and Corrêa (2010) analyze the impact of cash transfers on the labour market in a matching model with endogenous job destruction and labour market participation. They show that the size of cash transfers has a negative effect on the employment rate and participation rate, although the effect on the unemployment rate is ambiguous.

Literature provides evidence for the existence of considerable amount of state dependence in poverty and in the observed labour market status. This means that being poor in a given year enhances the chances of being poor again in the future (See Cappellari and Jenkins 2004; Biewen, 2009; Devicienti and Poggi, 2011; Fusco and Islam, 2012; Ayllon, 2013; Mullainathan and Shafir, 2013). Similarly, individual's previous (un)employment experiences have implications for future labour market possibilities. Empirical evidence by Ward and Ozdemir (2013), Arulampalam et al. (2000, 2001), Biewen and Steffes (2010), Knights et al. (2002) and Stewart (2007) points the existence of scarring effect in unemployment. Moreover, interrelationships between poverty and employment status have also been examined in the literature. Ayllón and Gábos (2015) in their individual level dynamic analysis found that income poverty and low work intensity are related via current effects instead of feedback effects, which also indicate that effects are immediate within the reference period of the previous year.

“Unemployment scarring” is another substantial and increasingly important part of the literature. It basically alludes to past unemployment affecting an individual's chances for employment in the future. Arulampalam et al. (2001) even name it the most accurate indicator of risk of an individual becoming unemployed again. This concept is also tied with the idea of “wage scarring”, which means that someone who has experienced unemployment will earn less than someone who hasn't. Arulampalam et al. (2001) look into the British labour market in

1980s and 1990s, they present the results of several studies conducted by the authors previously, two of which utilize difference-in-difference estimations and state that taken together they present evidence for unemployment scarring both future employment and future earnings. Gregg and Tominey make two contributions to the literature on wage scarring, in 2004 for youth unemployment and in 2005 this time focusing on the unemployment of male youth. In both studies they look into the effects unemployment in youth has on wages for the following twenty years, using data for children born in 1958 in Great Britain. In both cases, they find that while youth unemployment has a negative effect on the individual's wage by the time they are 42, the effect is smaller when repeat unemployment is avoided. In order to separate heterogeneity from real scarring they consider several techniques such as difference-in-difference and assuming the likely distribution of heterogeneity in 2004. But in the 2005 article they confidently apply Instrumental Variables technique to overcome the problem.

Another strand of the literature investigates the impact of social assistance policies on state dependence of employment. Bolvig et al (2003), study the effects of active social policies on employment, using data from Denmark. They conclude that when the welfare is applied with an employment measure, there are higher chances of leaving dependence whereas training measures affect their chances negatively and increase welfare dependence. Riphahn and Wunder (2015) utilize dynamic multinomial logit models to study welfare transitions and look into state dependence that receiving welfare creates and examine whether welfare transitions changed after a welfare reform implemented in 2005 for Germany. They find that state dependence is not a dominant characteristic of German welfare system, however there are some differing factors for immigrants and natives. They also show that welfare transitions are affected by the labour market situation.

### **3. Data and Descriptive Statistics**

The analysis is carried out by the utilization of a balanced panel drawn from The Turkish Statistical Institution's (TURKSTAT) Survey of Income and Living Conditions (SILC) for the 2010-2013 time period. TURKSTAT collects SILC data sets annually through cross-sectional household surveys. The data gives extensive information on income distribution, relative poverty, living conditions and social exclusion. While the samples vary in size, they are large throughout and are nationally representative.

When it comes to the identification of the unit of analysis, that is the choice of groups of people whose resources will be pooled to determine their poverty status, literature provides three

possibilities, i.e. the individual, the family and the household. Each of these has its own perks and problems. Family members with no independent income may be supported by others which undermines the use of the individual; the joint consumption of many durables may make a multiperson unit more suitable (Citro and Michael, 1995) however the changes in the family or the household's structure through marriages and separations would then need to be accounted for.

In this paper, in line with Gardiner and Millar (2006), and Turkish traditions, it is assumed that there will be income sharing within the household. To deal with the impact any changes within the household structure may have, individual characteristics are linked to households as the data set (which collects information on both the individual and the household levels) allows us to do.

A balanced panel data set is drawn from the sample, which includes the heads of households who are over 15 years of age. Table 1 presents a summary of the data in regards to how many times the participants have received social assistance throughout the time period. According to this, 57% of the participants have never received social assistance while 4,51% received it for all four years. Average household size increases from 3,58 people for those who never received social assistance (and this group is the only one with an average below that of the general average for the number of people in the household) to 4,52 for those who received it always. Primary school graduates constitute 44% of the data and post graduates make up 13% of it. Meanwhile 30% are full time workers and 17% are pensioners. 31% are households without children and 47% are wage earners.

The employment types of the individuals is also important. As can be seen, from the table 47% of the data set are wage earners, 23% are self-employed, 15% are casual employees, , 11% are unpaid family workers and 1,5% are employers. However, casual employees make up 28% of those who have received social assistance for all four years, while the self-employed make up 31% of it and unpaid family workers make up 15% of it. This indicates that, even when people are employed, if their jobs are not secure they may need to rely on social assistance more than others.

**Table 1: Descriptive Statistics Regarding Social Assistance Receipt**

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**Social Assistance Receipt**

	<b>Never Received Assistance</b>	<b>Received Assistance Once</b>	<b>Received Assistance Twice</b>	<b>Received Assistance Thrice</b>	<b>Always Received Assistance</b>	<b>Total</b>
<b>%</b>	57.02	14.05	14.12	10.30	4.51	
<b>Average age</b>	49.74	47.74	48.40	49.14	49.95	49.23
<b>Average monthly income per person</b>	842.14	562.50	455.30	383.36	375.57	680
<b>Average household size</b>	3.58	3.92	4.24	4.60	4.52	3.87
<b>Woman (%)</b>	12.37	17.83	21.15	21.29	21.82	15.73
<b>Married (%)</b>	85.28	80.27	76.85	76.74	76.32	
<b>Education (%)</b>						
<b>Illiterate</b>	5.43	8.93	15.73	18.61	22.42	9.50
<b>Literate</b>	5.25	7.44	10.76	11.13	10.80	7.19
<b>Primary Education</b>	43.71	46.18	43.82	47.72	43.15	44.46
<b>Secondary Education</b>	10.19	12.22	10.44	8.37	9.10	10.28
<b>High school Graduate</b>	7.92	7.42	6.81	5.47	7.13	7.41
<b>University Graduate</b>	9.35	8.42	6.49	4.82	3.89	8.11
<b>Post Graduate</b>	18.14	9.39	5.95	3.88	3.51	13.06
<b>Household Type</b>						
<b>Single adult</b>	7.31	8.41	10.06	10.29	11.35	8.34
<b>Household no child</b>	36.78	28.17	22.22	18.68	21.71	30.97
<b>Household single parent</b>	0.84	2.81	4.55	6.16	5.43	2.4
<b>Couple one kid</b>	14.49	13.29	12.72	10.17	8.61	13.36
<b>Couple two kids</b>	15.62	16.72	13.84	13.98	12.01	15.19
<b>Couple more than two kids</b>	8.02	11.31	16.15	18.75	18.97	11.23
<b>Employment Status</b>						
<b>Full time worker</b>	64.11	61.81	55.37	53.21	50.93	60.83
<b>Part time worker</b>	2.92	3.13	4.43	4.63	4.5	3.41
<b>Job seeker</b>	1.38	3.66	5.41	6.69	7.46	3.09
<b>Student (including unpaid internship)</b>	0.05	0.83	1.05	0.84	1.1	0.43

<b>Pensioner</b>	22.53	14.63	9.71	7.41	6.63	17.33
<b>Old. disabled or unable to work</b>	3.56	7.19	13.93	17.1	19.57	7.65
<b>Busy with house work</b>	5.16	8.19	9.38	9.5	8.99	6.8
<b>The status of the individual at their last job</b>						
<b>Wage earner</b>	59.87	43.98	32.27	23.98	24.02	47.43
<b>Casual employee</b>	<b>8.72</b>	<b>16.43</b>	<b>21.36</b>	<b>31.1</b>	<b>27.95</b>	<b>15.32</b>
<b>Employer</b>	3.29	2.92	3.07	0.76	1.69	2.83
<b>Self-employed</b>	<b>20.46</b>	<b>23.68</b>	<b>27.98</b>	<b>29.03</b>	<b>31.18</b>	<b>23.61</b>
<b>Unpaid family worker</b>	7.66	12.98	15.32	15.13	15.17	10.81

Tables 2 and 3 provide transition matrices for employment and social assistance statuses of the heads of households. It can be seen that 69% of those who have not received social assistance in the previous year, also do not receive it in the current year. However 32% of the household heads receive social assistance for both years (Table 2). When the situation for employment is assessed, it can be seen that only 13% of those who were not employed in the previous year have been employed in the current year (Table 3).

**Table 2: Social Assistance Receipt Transition Matrix (%)**

<b>Previous Year</b>	<b>Current Year</b>	
	Does not receive	Receives
Does not receive	68.95	31.05
Receives	67.90	32.10
<b>Total</b>	68.62	31.38

**Table 3: Employment Status Transition Matrix (%)**

<b>Previous Year</b>	<b>Current Year</b>	
	Not employed	Employed
Not employed	86.95	13.05
Employed	5.87	94.13
<b>Total</b>	34.86	65.14

#### **4. Model**

In this study a bivariate dynamic probit model for panel data will be constructed. According to Miranda (2007):

$$y_{1it}^* = x'_{1it}\beta_1 + \delta_{11}y_{1it-1} + \delta_{12}y_{2it-1} + \eta_{1i} + \zeta_{1it} \quad (1)$$

$$y_{2it}^* = x'_{2it}\beta_2 + \delta_{21}y_{1it-1} + \delta_{22}y_{2it-1} + \eta_{2i} + \zeta_{2it} \quad (2)$$

where  $y_{1it} = 1$  ( $y_{1it}^* > 0$ ) and  $y_{2it} = 1$  ( $y_{2it}^* > 0$ ). In the equation system  $x_{1it}$  and  $x_{2it}$  are  $K_1 \times 1$  and  $K_2 \times 1$  vectors of explanatory variables,  $\beta_1$  and  $\beta_2$  vectors of coefficients.  $\eta_i = \{\eta_{1i}, \eta_{2i}\}$  are random variables that represent individual heterogeneity which are time invariant and  $\zeta_{it} = \{\zeta_{1it}, \zeta_{2it}\}$  idiosyncratic shocks. It is assumed that  $\eta_i$  are jointly distributed with mean vector 0 and covariance matrix

$$\Sigma_\eta = \begin{bmatrix} \sigma_1^2 & \rho_\eta \sigma_1 \sigma_2 \\ \rho_\eta \sigma_1 \sigma_2 & \sigma_2^2 \end{bmatrix}$$

$\zeta_{it}$  are, too, jointly distributed with mean vector zero and covariance matrix

$$\Sigma_\zeta = \begin{bmatrix} 1 & \rho_\zeta \\ \rho_\zeta & 1 \end{bmatrix}$$

When we look at the situation of  $y_{1it}$  to distinguish true and spurious state dependence, we see that correlation between  $y_{1it}$  and  $y_{1it-1}$  and  $y_{1it-2}$  can be due to two explanations. First is that  $y_{1it-1}$  and  $y_{1it-2}$  can be truly shifting the conditional distribution of  $y_{1it}$  given  $\eta_i$ :

$$D(y_{1it}|y_{1it-1}, y_{1it-2}, \eta_i) \neq D(y_{1it}|\eta_i) \quad (3)$$

Or  $y_{1it-1}$  and  $y_{1it-2}$ , may not be truly changing the conditional distribution of  $y_{1it}$  given  $\eta_i$ :

$$D(y_{1it}|y_{1it-1}, y_{1it-2}, \eta_i) = D(y_{1it}|\eta_i) \quad (4)$$

The same applies for the variable  $y_{2it}$ .

Miranda, identifies several distributional conditions for the model to hold:

$$D(\eta|x, z, \zeta, \xi) = D(\eta) \quad (C1)$$

$$D(\zeta|x, z, \eta) = D(\zeta|\eta) \quad (C2)$$

$$D(\xi|x, z, \eta) = D(\xi|\eta) \quad (C3)$$

$$\zeta \perp \xi | \eta \quad (C4)$$

$$D(\zeta_{it}|\zeta_{is}, \eta) = D(\zeta_{it}|\eta) \quad \forall s \neq t \quad (C5)$$

$$D(\xi_{it}|\xi_{is}, \eta) = D(\xi_{it}|\eta) \quad \forall s \neq t \quad (C6)$$

According to Miranda, the first one is the usual random effects assumption. C1-C3 assure that all explanatory variables are exogenous. Under C4 it becomes possible that in dynamic equations and under initial conditions idiosyncronic shocks are independent given  $\eta$ . C5-C6 rule out any possibility for serial correlation for two pairs of idiosyncronic shocks. Since we have a probit model:

$$\eta \sim BN(0, \Sigma_\eta); \zeta | \eta \sim BN(0, \Sigma_\zeta); \xi | \eta \sim BN(0, \Sigma_\xi)$$

is imposed.

### 5. Estimation Results

Equations (5) and (6) are identified for estimation in line with the model that is utilized. The explanatory variables are chosen based on the literature and the descriptive analysis. In these equations EMP is a dummy variable which takes the value of 1 if the individual in question is employed and takes the value of 0 otherwise. ST is another dummy variable which takes the value of 1 if the individual is receiving any social assistance. Similarly, “gender” takes the value of 1 if the individual is a woman and “married” takes the value of 1 if the individual is married, “spouse employed” equals to 1 if the spouse of the individual is employed and “good health” equals to 1 if the person is in good health. Variables to indicate the education level of the individual as well as the structure of the household are also included as well as age and age squared. Year 2012 is included in Model 2 to look into the effects the changes that were made in that year may have had. Estimation results for equations (7) and (8) are presented in Table 5.

$$\begin{aligned} EMP_{it} = & \beta_0 + \gamma EMP_{it-1} + \beta_1 age_{it} + \beta_2 age^2_{it} \\ & + \beta_3 gender_{it} + \beta_4 married_{it} + \beta_5 householdsize_{it} \\ & + \beta_6 primaryschool_{it} + \beta_7 secondaryschool_{it} \\ & + \beta_8 highereducation_{it} + \beta_7 noemployed_{it} \\ & + \beta_8 spouse\ employed_{it} + \beta_9 good\ health_{it} + \varepsilon_{it} \end{aligned} \quad (5)$$

$$\begin{aligned} ST_{it} = & \delta_0 + \lambda ST_{it-1} + \alpha_1 age_{it} + \alpha_2 age^2_{it} + \alpha_3 gender_{it} + \alpha_4 married \\ & + \alpha_5 primaryschool_{it} + \alpha_6 secondaryschool_{it} \\ & + \alpha_7 highereducation_{it} + \alpha_8 hhnochild_{it} \\ & + \alpha_9 hhsingleadult_{it} + \alpha_{10} hhonechild_{it} \\ & + \alpha_{11} hhtwochild_{it} + \alpha_{12} hhmoredchild_{it} \\ & + \alpha_{13} spouse\ employed_{it} + \eta_{it} \end{aligned} \quad (6)$$

**Table 5: Employment and Social Assistance Receipt**

Variables	Model 1	Model 2
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	<b>Employed</b>	<b>Social Assistance</b>	<b>Employed</b>	<b>Social Assistance</b>
<b>EMP(t-1)</b>	2.060***		2.064***	
	0.025		0.027	
<b>ST (t-1)</b>		-0.0133		-0.0132
		0.0147		0.029
<b>Age</b>	0.0235***	-0.0536***	0.0235***	-0.0536***
	(0.00392)	(0.00286)	(0.00392)	(0.00286)
<b>Age<sup>2</sup></b>	-0.000702***	0.000406***	-0.000702***	0.0004***
	(3.90e-05)	(2.75e-05)	(3.90e-05)	(2.75e-05)
<b>Gender</b>	-1.220***	-0.0142	-1.220***	-0.0139
	(0.0321)	(0.0283)	(0.0321)	(0.0283)
<b>Married</b>	-0.0279	-0.223***	-0.0279	-0.222***
	(0.0312)	(0.0289)	(0.0312)	(0.0289)
<b>Household Size</b>	-0.0908***	0.0995***	-0.0908***	0.0996***
	(0.00443)	(0.00447)	(0.00443)	(0.00447)
<b>Primary Education</b>	0.0796***	-0.537***	0.0796***	-0.537***
	(0.0265)	(0.0218)	(0.0265)	(0.0218)
<b>Secondary Education</b>	0.149***	-0.779***	0.149***	-0.779***
	(0.0303)	(0.0252)	(0.0303)	(0.0252)
<b>Higher Education</b>	0.148***	-1.210***	0.148***	-1.210***
	(0.0365)	(0.0314)	(0.0365)	(0.0314)
<b>Couple without children</b>		-0.129***		-0.128***
		(0.0215)		(0.0215)
<b>Single parent</b>		0.767***		0.768***
		(0.0483)		(0.0483)
<b>Couple with one child</b>		0.0471*		0.0476*
		(0.0266)		(0.0266)
<b>Couple with two children</b>		0.00755		0.00781
		(0.0249)		(0.0249)
<b>Couple with more than two children</b>		0.205***		0.205***
		(0.0257)		(0.0257)
<b>Number of employed in household</b>	0.578***	-0.156***	0.578***	-0.156***
	(0.0102)	(0.00817)	(0.0102)	(0.00817)
<b>Spouse employed</b>	0.437***	-0.0502***	0.437***	-0.0502***
	(0.0205)	(0.0165)	(0.0205)	(0.0165)
<b>Good Health</b>	0.280***		0.280***	
	(0.0179)		(0.0179)	
<b>Year 2012</b>			0.0742***	0.0270*
			(0.0193)	(0.0142)
<b>Constant</b>	0.853***	1.604***	0.853***	1.593***
	(0.102)	(0.0776)	(0.102)	(0.0778)
<b>Rho</b>		-0.0927***		-0.0929***
		(0.0163)		(0.0163)
<b>Log likelihood</b>		-23425.40		-23257.21
<b>AIC</b>		54163.02		53169.43

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**Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.**

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The results indicate that as age increases the possibility of being in employment increases while the possibility of receiving social assistance decreases. When compared to men, women have a smaller possibility of being in employment and receiving social assistance. Being married effects the possibility of being in employment and receiving social assistance negatively. Household type and the existence of employed people in the household effect the possibility of receiving social assistance. As expected, a higher education increases the possibility of being in employment and decreases the possibility of receiving social assistance.

This model has the advantage of estimating the direction of the synchronicity between the decisions of being in employment and receiving social assistance. The rho parameter which shows the relationship between the residuals of the two equations is negative and statistically significant. This supports the idea that social benefits alienate individuals from employment.

In 2012, with a protocol signed between the Ministries of Labour and Social Security and the Family and Social Policies of the Republic of Turkey; it has been agreed that the Turkish Labour Agency would prioritize the people who have applied for social assistance and have been directed to their agency. The same year a change within the scope of Law No. 3294 allowed households under social protection (with the condition that their monthly net income was lower than that one third of the minimum wage) to receive certain types of transfers. Even though the data does not cover a long time period, the coefficients in Model 2 indicate that these measures have increased the possibility of employment but also had a positive effect on social assistance receipt.

## **6. Conclusion**

In this study a bivariate dynamic panel data approach was utilized over a SILC data set for Turkey for the time period between 2010 and 2013 to showcase the effects of employment and social assistance have on each other. Since individuals decide on whether to be employed or to receive social assistance simultaneously, this approach is argued to provide a better understanding of the dynamic.

The results show that social benefits tend to alienate people from employment. This is a problem that is discussed for the welfare systems of a lot of countries and measures need to be taken so that the system can sustain itself as the fight against poverty continues.

While the social assistance programs appear to be successful in helping people out of poverty in the short run, the state dependence in poverty showcases the hardship of moving out once people have fallen into poverty trap. In this case, it is suggested that poverty eradication measures be extended into preventing people from falling into poverty in the first place. Analysis has shown that households with many children and/or dependent members who may be elderly or ill, and those that have a lower level of education are more likely to fall into poverty. Moreover, if the people in the family work in informal jobs and their work lacks continuity, they have a higher probability to become poor. So, informal work within the economy should be decreased and workers should be made to take up jobs with security. Turkish Labour Agency giving priority to those who have applied for social assistance appears to have been a move in the right direction.

Women are also at a disadvantage, more so since they are usually expected to take care of the dependent members of the family. An increase in the availability of nurseries and day-care centers can increase the entry of women into the labour market.

The results clearly show that increased education decreases the chances of relying on social assistance and increases the possibility of individuals going into employment instead. As we have shown the primary school graduates constitute quite a large portion of the data set. Efforts should start at this level, and education level should increase in general in order to increase human capital. Better health also increases people's ability to become employed and hence the supply of education and health care for poor families are crucial in order to break the poverty cycle in the long run. Education and courses can be made available for the adults in these families so that they can increase their employability. Social assistance programs can be designed so that they would direct the recipients in developing their skills to become more employable and transitioning to employment.

## References

- Alzúa, M. L., Cruces, G., & Ripani, L. (2013). Welfare programs and labor supply in developing countries: experimental evidence from Latin America. *Journal of Population Economics*, 26(4), 1255–1284. <https://doi.org/10.1007/s00148-012-0458-0>
- Arulampalam, W., Gregg, P., & Gregory, M. (2001). Unemployment Scarring. *The Economic Journal*, 111(475), 577–584. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/1468-0297.00663/abstract>

- Attanasio, O., Fitzsimons, E., Gomez, A., Lopez, D., Meghir, C., & Mesnard, A. (2006). *Child Education and Work Choices in the Presence of a Conditional Cash Transfer Programme in Rural Cumbia. IFS Working Papers, Institute of Fiscal Studies (IFS) No. 06/13.*
- Ayllón, S. (2013). Understanding poverty persistence in Spain. *SERIEs*, 4(2), 201–233. <https://doi.org/10.1007/s13209-012-0089-4>
- Ayllón, S., & Gábos, A. (2015). The interrelationships between the Europe 2020 social inclusion indicators, (15).
- Biewen, M. (2009). Measuring state dependence in individual poverty histories when there is feedback to employment status and household composition. *Journal of Applied Econometrics*, 24(7), 1095–1116. <https://doi.org/10.1002/jae.1081>
- Biewen, M., & Steffes, S. (2010). Unemployment persistence: Is there evidence for stigma effects? *Economics Letters*, 106(3), 188–190. <https://doi.org/10.1016/j.econlet.2009.11.016>
- Blundell, R., & Hoynes, H. W. (2004). Has “In-Work” Benefit Reform Helped the Labor Market? In *Seeking a Premier Economy: The Economic Effects of British Economic Reforms, 1980-2000* (pp. 411–460). University of Chicago Press. Retrieved from <http://www.nber.org/chapters/c6753.pdf>
- Bolvig, I., Jensen, P., & Rosholm, M. (2003). The employment effects of active social policy. *IZA Discussion Paper*. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=391995](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=391995)
- Cappellari, L., & Jenkins, S. P. (2004). Modelling low income transitions. *Journal of Applied Econometrics*, 19(5), 593–610. <https://doi.org/10.1002/jae.778>
- Cavalcanti, T., & Correa, M. (2010). Cash Transfers and the Labor Market. *Revista Brasileira de Economia*, 64, 175–190. Retrieved from <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=econ&AN=1126929>
- Citro, C. F., & Michael, R. T. (1995). Other Issues in Measuring Poverty. In C. F. Citro & R. T. Michael (Eds.), *Measuring Poverty: A New Approach* (pp. 293–316).
- Danziger, S., Haveman, R., & Plotnick, R. (1981). How income transfer programs affect work, savings, and the income distribution: A critical review. *Journal of Economic Literature*, 19(3), 975–1028. <https://doi.org/10.2307/2724326>
- Devicienti, F., & Poggi, A. (2011). Poverty and social exclusion: two sides of the same coin or dynamically interrelated processes? *Applied Economics*, 43(25), 3549–3571. <https://doi.org/10.1080/00036841003670721>
- Edmonds, E. V, & Schady, N. (2009). *Poverty Alleviation and Child Labor* (NBER Working Paper Series No. National Bureau of Economic Research). Retrieved from [http://www.nber.org/papers/w15345.pdf?new\\_window=1](http://www.nber.org/papers/w15345.pdf?new_window=1)
- Esping-Andersen, G. (1996). *Welfare States in Transition National Adaptations in Global Economies*. SAGE Publications Ltd.
- Fiszbein, A., & Schady, N. (2009). *Conditional cash transfers: Reducing present and future poverty. A World Bank Policy Research Report*. Washington, DC: The World Bank. <https://doi.org/10.1001/jama.298.16.1900>

- Foguel, M. N., & Barros, R. P. de. (2010). (Social Grants) - The Effects of Conditional Cash Transfer Programmes on Adult Labour Supply: An Empirical Analysis Using a Time-Series-Cross-Section Sample of Brazilian Municipalities. *Est. Econ*, 40(2), 35.
- Fusco, A., & Islam, N. (2012). Understanding the Drivers of Low-Income Transitions in Luxembourg. In J. Bishop & R. Salas (Eds.), *Inequality, Mobility, and Segregation: Essays in Honor of Jacques Silber* (1st ed., pp. 367–392). Emerald Group Publishing Ltd.
- Galasso, E. (2006). “With their effort and one opportunity”: Alleviating extreme poverty in Chile. *Development Research Group, World Bank, N/A*(March), 1–41. Retrieved from <http://www.iadb.org/res/publications/pubfiles/pubS-001.pdf>
- Gardiner, K., & Millar, J. (2006). How Low-Paid Employees Avoid Poverty: An Analysis by Family Type and Household Structure. *Jnl Soc. Pol*, 35(3), 351–369.
- Gough, I. (1996). Social Assistance in Southern Europe. *South European Society and Politics*, 1(1).
- Gregg, P., & Tominey, E. (2004). The Wage Scar from Youth Unemployment, (4).
- Gregg, P., & Tominey, E. (2005). The wage scar from male youth unemployment. *Labour Economics*, 12(4), 487–509. <https://doi.org/10.1016/j.labeco.2005.05.004>
- Grütjen, D. (2008). The Turkish welfare regime: An example of the Southern European model? The role of the state, market and family in welfare provision. *Turkish Policy Quarterly*, 7(1), 111–129.
- Hoynes, H. W., & Schanzenbach, D. W. (2012). Work incentives and the Food Stamp Program. *Journal of Public Economics*, 96(1–2), 151–162.
- Immervoll, H., Jenkins, S., & Königs, S. (2015). Are Recipients of Social Assistance “Benefit Dependent”? Concepts, Measurement and Results for Selected Countries, (January).
- Keyder, Ç., & Buğra, A. (2006). The Turkish Welfare Regime in Transformation. *Journal of European Social Policy*, 16(3), 211–228. <https://doi.org/10.1177/0958928706065593>
- Knights, S., Harris, M. N., & Loundes, J. (2002). Dynamic Relationships in the Australian Labour Market: Heterogeneity and State Dependence. *Economic Record*, 78(242), 284–298. <https://doi.org/10.1111/1475-4932.00058>
- Lemieux, T., & Milligan, K. (2004). *Incentive effects of social assistance: A regression discontinuity*. Center for Labor Economics Working Paper. <https://doi.org/10.1016/j.jeconom.2007.05.014>
- Maluccio, J. A. (2007). The Impact of Conditional Cash Transfers in Nicaragua on Consumption, Productive Investments, and Labor Allocation, (June), 32. Retrieved from [www.fao.org/es/esa](http://www.fao.org/es/esa)
- Meghir, C., & Phillips, D. (2008). *Labour Supply and Taxes* (IFS Working Papers No. WP08/04).
- Michalopoulos, C., Robins, P. K., & Card, D. (2005). When financial work incentives pay for themselves: evidence from a randomized social experiment for welfare recipients. *Journal of Public Economics*, 89, 5–29. Retrieved from <http://davidcard.berkeley.edu/papers/work-incentives-welfare.pdf>

- Miranda, A. (2007). Dynamic Probit models for panel data : A comparison of three methods of estimation.
- Moffitt, R. (1992). Incentive effects of the US welfare system: A review. *Journal of Economic Literature*, 30, 1–61. <https://doi.org/10.2307/2727878>
- Moffitt, R. A. (2002). Chapter 34 Welfare programs and labor supply. *Handbook of Public Economics*. [https://doi.org/10.1016/S1573-4420\(02\)80013-1](https://doi.org/10.1016/S1573-4420(02)80013-1)
- Moffitt, R. A., & Scholz, J. K. (2009). *Trends in the Level and Distribution of Income Support* (NBER Working Paper Series). <https://doi.org/10.1017/CBO9781107415324.004>
- Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much*. Macmillan.
- Parker, S. W., Skoufias, E., Bénédicte de la Brière, Quisumbing, A. R., Adato, M., Mindek, D., ... Davis, B. (2000). The Impact of Progresa on Work, Leisure and Time Allocation, (1), 216. Retrieved from [www.cgiar.org](http://www.cgiar.org)
- Pierson, C. (1991). *Beyond the welfare state?: the new political economy of welfare*. University Park : Pennsylvania State University Press.
- Rawlings, L. B., & Rubio, G. M. (2005). Evaluating the impact of conditional cash transfer programs. *World Bank Research Observer*, 20(1), 29–55. <https://doi.org/10.1093/wbro/lki001>
- Riphahn, R. T., & Wunder, C. (2015). State Dependence in Welfare Receipt: Transitions Before and After a Reform. *Empirical Economics*, 50(4), 1–51. <https://doi.org/10.1007/s00181-015-0977-0>
- Saraceno, C. (2002). *Social Assistance Dynamics in Europe: National and Local Poverty Regimes*. The Policy Press.
- Schady, N., & Araujo, M. C. (2006). *Cash transfers, conditions, school enrollment, and child work: Evidence from a randomized experiment in Ecuador*. *World Bank Policy Research Working Paper 3930*. <https://doi.org/10.3109/03014460903058992>
- Skoufias, E., & di Maro, V. (2008). (Social Grants) - Conditional Cash Transfers, Adult Work Incentives, and Poverty. *Journal of Development Studies*, 44(7), 26. <https://doi.org/10.1080/00220380802150730>
- Skoufias, E., & Parker, S. W. (2001). Conditional Cash Transfers and Their Impact on Child Work and Schooling: Evidence from the PROGRESA Program in Mexico. *Economía*, 2(1), 45–86. <https://doi.org/10.1353/eco.2001.0016>
- Stewart, M. B. (2007). The interrelated dynamics of unemployment and low-wage employment. *Journal of Applied Econometrics*, 22(3), 511–531. <https://doi.org/10.1002/jae.922>
- Thorbecke, E. (2004). Conceptual and Measurement Issues in Poverty Analysis. *World Institute for Development Economics Research (WIDER)*, 30–31.
- Ward, T., & Ozdemir, E. (2013). Measuring low work intensity – an analysis of the indicator. *Working Paper*, (13), 1–37. Retrieved from [http://webhost.ua.ac.be/csb/ImPRovE/Working Papers/ImPRovE WP 1309\\_1.pdf](http://webhost.ua.ac.be/csb/ImPRovE/Working%20Papers/ImPRovE%20WP%201309_1.pdf)

Yörük, E. (2012). Welfare Provision as Political Containment: The Politics of Social Assistance and the Kurdish Conflict in Turkey. *Politics & Society*, 40, 517–547. <https://doi.org/10.1177/0032329212461130>