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Education and Prosocial Behavior: Evidence from Time Use Survey

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ABSTRACT

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We use the extension of compulsory education from five to eight years in Turkey as an instrument for educational attainment to investigate the causal effects of education on prosocial behavior by utilizing Turkish Time Use Survey data. Ours is the first paper that investigates the causal effect of education on volunteering. We find that the education reform increased the education levels significantly, and increased education had a causal negative and significant impact on prosocial behavior of men as time spent in volunteering and helping others decreased. We also investigate the causal channels through which education decreases prosocial behavior. We find that schooling increased the likelihood of earning higher wages and work hours, which suggests that men substituted hours worked for time spent in prosocial activity as a result of an exogenous increase in their education levels. Our findings also suggest that education might have enhanced individualism and self-centrism as we find that time spent in leisure and sport activity increased. We do not find any significant effects of education on female prosocial behavior in Turkey, where female labor force participation rate at 32 percent has remained low and stagnant across the years.

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1. INTRODUCTION

A growing empirical literature has shed light on the importance of prosocial behavior and shown that caring for others has crucial economic consequences for both developed and developing countries. OECD (2015) reports that volunteer sector is a considerable economic force in the OECD area, where the economic value of volunteering is estimated as 1 trillion US dollars, a 1.9% substantial share of GDP. In addition, prosocial behavior has several important implications for society. It helps to create social capital and builds social trust and cooperation by developing the norms of altruism, solidarity, civic mindfulness, and respect for diversity (Putnam, 1995, 2000). Apart from the economic and social benefits of prosocial behavior, there are several positive effects of prosocial behavior on individual outcomes: Engagement in prosocial activity improves the physical and mental health of individuals (Musick and Wilson, 2003; Piliavin and Siegl, 2007), raises self-esteem and self-confidence of individuals (Harlow and Cantor, 1996; Klein, 2017), increases the subjective well-being of individuals (Meier and Stutzer, 2008; Binder and Freytag, 2013; Magnani and Zhu, 2018; Okten, Osili and Han, 2019), and provides individuals an opportunity to acquire hard and soft skills that enhance their career development and employment prospects (Freeman,1997; Baert and Vujic, 2016; Suaer, 2015).

Education has been considered as an important determinant of prosocial behavior. Several studies document a strong correlation between educational attainment and prosocial behavior suggesting that more educated individuals are more likely to display prosocial behavior than low educated individuals (Smith, 1994; Wilson, 2000; Bekkers, 2006; Gesthuizen, Van Der Meer, and Scheepers, 2008; Van Ingen and Dekker, 2011; and Gesthuizen and Scheepers, 2012). However, previous studies fail to establish a causal relationship between education and prosocial behavior because they do not account for omitted variable bias or reverse causality. More precisely, there may be some unobservable individual factors such as intelligence, ability, emotional intelligence, and unobservable family factors such as values and social norms that may affect both educational attainment and prosocial behavior. Furthermore, reverse causality may exist: not only schooling promotes the engagement in prosocial activity but also displaying prosocial behavior may affect the level of education because hard and soft skills gained through prosocial activities may facilitate learning school subjects and satisfy college entrance requirements. In this paper, we, therefore, address the crucial limitations in existing studies by investigating the causal effects of education on prosocial behavior - a particular type of voluntary behavior-including a broad range of actions such as helping, sharing, volunteering or comforting that are intended to benefit others (Batson and Powell, 2003). Ours is the first paper that provides causal evidence of education on prosocial behavior by using the instrumental

variable method where we utilize the 1997 Turkish compulsory schooling reform as an instrument for education. We also explore causal channels through which education may affect prosocial behavior.

Prior to 1997, the basic education system in Turkey was composed of five years of compulsory primary school. The subsequent three years of middle school was optional. After the compulsory schooling law was enacted in the 1997-1998 academic year, students had to complete eight years of mandatory schooling before having a right to drop out of the school. Therefore, individuals born before 1986 could drop out after they complete five years of primary school, whereas those who were born after 1986 had to complete eight years of schooling, i.e., five years of primary school and three years of middle school. As a result, the law generated an exogenous increase in education of individuals born after 1986, but it did not affect those born before. This reform was unexpected and exogenous to parental decisions and mostly motivated by political factors. Hence, it serves as a natural experiment.

We examine the causal effects of education on prosocial behavior by utilizing the change in the compulsory schooling law and using data from the Turkish Time Use Survey. In particular, we assess whether an exogenous increase in the number of years of schooling affects prosocial behavior defined as volunteering and helping activities to benefit others. We first investigate the effects of the change in the compulsory schooling law on the schooling outcomes. Then, we examine whether the exogenous increase in schooling has any impact on prosocial behavior. Finally, we explore the potential channels through which education may affect prosocial behavior. Specifically, we examine whether education has an effect on prosocial behavior through two channels: Labor market outcomes and individual preferences. The main channel we investigate is that if schooling increases individuals' real wage, the opportunity cost of non-work hours increases. If the substitution effect dominates, individuals may substitute work hours for time spent in prosocial activities. If the income effect dominates, individuals may increase their prosocial activity; however, the composition of prosocial activity may change, i.e., individuals may increase monetary donations and decrease volunteer hours. The second channel is that education may affect individuals' preferences. If education teaches prosocial values, it might increase individuals' prosocial activity. If, on the other hand, education emphasizes individualism and self-centrism, it might decrease individuals' prosocial activity.

We use 2014-2015 Turkish Time Use Survey microdata set to estimate the causal effects of Turkish compulsory schooling law on a number of prosocial behavior outcomes: *i*) prosocial activity participation, *ii*) the number of prosocial activities, iii) the frequency of prosocial

activity, and iv) time spent in the prosocial activity. Time Use Survey is one of the more comprehensive and reliable sources for understanding the prosocial behavior of individuals. It collects detailed data on socioeconomic indicators for households, demographics, labor market, and general health status as well as indicators for understanding the time use patterns of individuals such as voluntary activities, helping activities, and leisure and sports activities. We use treatment status according to the year of birth as an instrument and employ the Instrumental Variable (IV) method to isolate the causal effects of education. Those who were born after 1986 are assigned to the treatment group, whereas those who were born before 1986 are assigned to the control group.

Our findings indicate that the change in the compulsory schooling law increases the educational attainment of individuals. In particular, the change in the compulsory schooling law increased the probability of being at least a middle school graduate, i.e., completing at least eight years of schooling by 12.8 ppts. and 11.6 ppts., for males and females, respectively. We further find that education had a negative significant impact on male prosocial behavior as time spent in prosocial activity decreased. More precisely, for males, our findings indicate 779 minutes decrease in time spent in the prosocial activity over four weeks. We do not find any significant effects of education on female prosocial behavior.[1]

Examining the labor market channel, we find that education improves labor market outcomes: schooling increases the probability of earning higher wages and hours worked. We document that negative effects of education on prosocial behavior are more pronounced for employed individuals. We show that the completion of at least middle school reduced time spent in prosocial activity by 889 minutes for employed males. Our results imply that the increase in hours worked might reduce an individual's time spent in the prosocial activity. We argue that the substitution effect dominates the income effect, and individuals may substitute work hours for time spent in the prosocial activity. Analyzing how education might have affected preferences, we document that the increased educational level leads to a rise in time spent in leisure and sports activities by 370 minutes. This result supports our idea that education may emphasize individualism and self-centrism that may lead to increase time spent in leisure and sport activity and decrease time spent in the prosocial activity.

We undertake several additional analyses to test the robustness of our results. First, we construct three alternative outcome variables to measure the prosocial behavior of individuals:

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[1] We should note that female labor force participation at 32 percent has been low in Turkey and stagnant over time. Akyol and Okten (2019) show that religious and social norms are an impediment to female labor force participation in Turkey.

i) prosocial activity number index, *ii*) prosocial activity frequency index, and *iii*) prosocial activity time index. Second, we conduct a placebo test to investigate whether our results are due to the change in the compulsory schooling law. Third, we use alternative identification strategies, namely *IV TOBIT* and *Reduced Form* Regression approach. Fourth, we employ our OLS and IV regressions by using alternative estimation windows. Fifth, we add additional control variables to refine our analysis. Sixth, we examine the impact of education on prosocial behavior by making alternative model specifications. As a result, all these analyses confirm our main results.

We contribute to the literature that documents a strong correlation between educational attainment and prosocial behavior. Starting with Smith (1994), Wilson (2000), Bekkers (2006), Gesthuizen, Van Der Meer, and Scheepers (2008), Van Ingen and Dekker (2011), and more recently Gesthuizen and Scheepers (2012) investigate the determinants of prosocial behavior and document a positive significant relationship between education and volunteering. Our OLS regression results are in line with this part of the literature. We show that for males, there is a significant positive correlation between education and prosocial behavior as the number of prosocial activities, the frequency of prosocial activity, and the prosocial activity participation increase.

Although several studies indicate that there is a positive correlation between education and the probability of displaying prosocial behavior, a number of papers argue that such correlation may exist due to the unobservable factors like ability, intelligence, unobservable family factors or socio-economic factors that affect both educational attainment and prosocial behavior of individuals. For instance, Gibson (2001) is the first paper pointing out this issue.[2] He investigates the effects of education on prosocial behavior by holding unobservable family factors constant with the help of the data from a sample of twins. As a result, he finds that education significantly decreases the probability of volunteering and time spent in volunteering activities when the unobservable family factors are controlled. However, there are some limitations in Gibson (2001) as in all twin studies. First of all, the sample is not a representative

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[2] Dee (2004) examine the causal effect of additional schooling on civic behaviors and knowledge. As a measure of civic behavior, he uses individuals' participation in voluntary activities in the last twelve months. In particular, Dee (2004) investigates whether education affects individuals' participation in voluntary activities by using data from the High School and Beyond longitudinal study and considering the geographic proximity and density of junior and community colleges as an instrument to educational attainment. Consistent with previous studies, OLS estimates show that there is a positive correlation between education and volunteer participation. Dee (2004), however, indicates that the causal effect of education on the probability of volunteering is insignificantly negative and small.

sample of the entire population. Second, although twin studies solve *omitted variable bias*, it cannot account for all endogeneity problems, especially *reverse causality*.

Krekel (2017) uses German High School Reform, which reduces the number of school years required to obtain the university entrance qualification from 13 years to 12 years; whereas, total instructional time and curriculum have not changed, which, in turn, leads to a 12.5% increase in weekly instructional hours of high school students. He investigates whether a rise in weekly instructional hours of high school students has an impact on student prosocial behavior. In particular, Krekel (2017) estimate the causal effect of raising weekly instructional time by exploiting the variation in the implementation of the reform across different federal states and school cohorts and employing the difference in differences design. His findings indicate that an increase in instructional hours leads to a decrease in the share of students, who volunteer at least once a month, by about 19 %.

Finally, our study relates to the extended literature on causal effects of the change in the compulsory schooling law on different outcome variables such as marriage market outcomes (Hener and Wilson, 2018), labor market outcomes (Angrist and Krueger, 1991; Aydemir and Kırdar, 2013; Mocan, 2014; Torun, 2018), child's educational outcomes, drop-out decisions (Oreopoulos, 2006; Oreopoulos, 2007; Caner, Guven, Okten and Sakalli, 2016), civic and political behavior outcomes (Dee, 2004; Milligan, Moretti and Oreopoulos, 2004; Larreguy and Marshall, 2017; Cesur and Mocan, 2018), health outcomes (Cesur, Dursun, and Mocan, 2018; Kırdar, Dayıoğlu, and Koç, 2018, subjective well-being (Dursun and Cesur, 2016) and domestic violence outcomes (Erten and Keskin, 2018; Abdurahimov and Akyol, 2018). We contribute to this growing literature by offering the first study to examine the effects of education on prosocial behavior by using a change in compulsory schooling law as an instrument. While our study uses Turkish data, we believe our results are relevant for many countries where education levels are rising and more people are joining the labor force.

The organization of the paper is as follows: Next section gives the necessary background information about the 1997 Basic Education Reform and prosocial behavior in Turkey. Section 3 presents the outcome variables and the descriptive statistics of the data used. Section 4 discusses the model and identification strategy. Section 5 and Section 6 present the results and causal channels through which education affects prosocial behavior, respectively. Section 7 shows the robustness checks. Section 8 concludes.

2. BACKGROUND

2.1. PROSOCIAL BEHAVIOR: Volunteering and Helping Activities

Volunteering is a complex phenomenon that is hard to define and measure with precision for cross-country comparison. The International labour Organization (ILO) (2011) standardized definitions to conceptualize the type of voluntary activities to make a more accurate estimation of volunteer work. In particular, ILO (2011) defines volunteer work as "unpaid non-compulsory work; that is, time individuals give without pay to activities performed either *through an organization* or *directly* for others outside their own household". This definition differentiates volunteering from paid work and leisure activities by indicating that voluntary work should be unpaid and generate goods or services that benefit to others. Most of the studies in the economic literature use the term "volunteer work" to define actions that are intended to benefit others, whereas the psychology literature uses the more collective term, "prosocial behavior", which covers all activities that are advantageous to other persons or the society in general.

ILO (2011) also considers the degree of formality while categorizing the types of volunteering activities: direct volunteering and organization-based volunteering. Direct volunteering *(called as "informal volunteering"* by Wilson and Musick, 1997*)* is volunteer work performed directly for other households, excluding the household of the volunteer or family members living in other households. This type of volunteering consists of activities such as helping to neighbours for preparing food, washing or ironing clothes, and caring for a child. Organization-based volunteering (called as "*formal volunteering*" by Wilson and Musick, 1997), on the other hand, is volunteer work performed for, or through an organization. It includes activities undertaken through organizations such as working for associations, schools, nurseries, neighborhood groups, or committees.

Salamon, Sokolowski, and Haddock (2018), more recently, consider the volunteer workforce as Full-Time Equivalent (FTE) workers and provides the data on volunteer work to understand the volunteering trends across the countries. They estimate that 70 percent of global volunteer activity occurs more informally through direct person-to-person engagement, while 30 percent takes place formally through organizations or associations. They find that there is also significant variation in the composition of voluntary activities across countries. For example, while in the US and Germany only about half of the voluntary activities are through direct person to person engagement, in Turkey and Spain, more than 80 percent of voluntary activities is through direct volunteering.

Based on data published in Salamon et al. (2018), we calculate that in Turkey, the FTE volunteer workforce in total volunteering as a share of the working-age population is nearly 3

percent, where 1 percent is the male share of volunteer workforce in total volunteering and 2 percent is the female share of volunteer workforce in total volunteering which is similar to Italy and Spain and also the world average. In the United States, as a share of the working-age population, the FTE volunteer workforce is 6 percent; where 2 percent of the FTE volunteer workforce is men and 4 percent of the FTE volunteer workforce is women.[3]

2.2. THE COMPULSORY SCHOOLING REFORM IN TURKEY

Before 1997, basic education in Turkey composed of compulsory five years of primary school and voluntary three years of middle school. After completing primary school, students had options to choose to study in general, vocational, or religious schools. Hence, students who complete five years of primary school could drop out of school or continue studying in middle school.

At the beginning of the 1990s, political Islam began to receive general public support, an Islamist party to won the 1995 Turkish Grand National Assembly (the parliament) elections. The election result boosted the ongoing conflict between the Islamic movement and secular political groups, including the military and the judiciary. In 1997, to prevent the spread of Islamist movement in Turkey, the military intervened in the government with the new set of laws. One of these laws, Law No.4306, stated that the compulsory schooling should be extended to eight years, combining primary school and middle school into primary education. This law was called the Basic Education Program and does not allow students who complete five years of primary school to receive the primary school diploma without completing an additional three years of middle school.

The 1997 compulsory schooling law was implemented in the 1997-1998 academic year, and the mandatory years of primary education became eight years. During the period that Turkish compulsory schooling law was implemented, Turkey's negotiation process for the European Union membership was started. Therefore, the government immediately implemented the compulsory schooling reform that increased the level of education in Turkey to accelerate the process of the European Union membership (Dulger, 2004).

The exposure to the compulsory schooling law was determined by the school starting age: Individuals born before 1986 could drop out after they complete five years of primary school,

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[3] For the US estimates, time use surveys are used. For Turkey, John Hopkins Comparative Nonprofit Sector Project and regional averages compiled from a variety of sources are used for organization based and direct volunteering respectively.

whereas those who were born after 1986 had to complete eight years of schooling, i.e., five years of primary school and three years of middle school. Thus, the law generated an exogenous increase in education of individuals born after 1986, but it did not affect those born before. Turkish law states that a child can start the first grade of primary school in the fall of the academic year if he/she is 6 years (72 months) old at the end of that calendar year. However, 72 months-old requirements to enroll in the primary school is not too strict; a child can start to the first year of primary school if she/ he is on the margin of 72-month age cut-off. Therefore, a child born in 1986 could complete the primary education in 1997 and could be exempt from the compulsory schooling law, on the other hand, a child born in 1986 could complete the fourth grade of the primary education in 1997, when the law was implemented, could be exposed to the compulsory schooling law. Therefore, exposure to the law is unclear for the 1986 birth cohort (Kırdar, Dayioglu, and Koc, 2018; Dursun and Cesur, 2016; Cesur and Mocan, 2018; Dursun, Cesur, and Mocan, 2018).

The Basic Education Program did not improve the quality of public-school educations; however, the compulsory schooling law had an outstanding impact on middle school enrollment rates. According to the Turkish Ministry of National Education (2011), the primary school enrollment rate raised from 84.74 in the 1997-1998 academic year to 93.54 in 1999-2000 academic year. The increase in the enrollment rate for females was larger than males. That is, the enrollment rate for females increased from 78.97 to 88.45, while the corresponding rate for males was 85.63 to 88.54.

3. DATA
3.1. OUTCOME VARIABLES

We use data from Turkish Time Use Survey (TUS) of 2014-15, a nationally representative survey that aims to measure the daily activity patterns, to identify differences in time-use patterns of different gender, age and socio-economic group, to improve GNDP estimates, and to make international comparisons on time use possible (Erkip and Mugan, 2010). Turkish Time Use Survey was designed to be part of Harmonized European Time Use Study (HETUS) and utilized EUROSTAT (2000a, 2000b) activity classifications and coding as its basis. The data compiling and publishing periods are decennial. The survey, which was conducted among 11.440 households, during the period of 1 August 2014-31 July 2015, covers data on socioeconomic indicators for households, demographics (age, gender, region of residence, country of birth), labor market outcomes, general health status as well as indicators to understand the time use patterns of individuals. The survey consists of four questionnaires:

Household Questionnaire, Individual Questionnaire, Diaries, and Weekly Work Schedule.[4] We conduct our main analysis by using the data from the Individual Questionnaire. In particular, the Individual Questionnaire collects data on individuals' age, gender, country of birth, education status, general health status, and labor market outcomes. Apart from background characteristics, the Individual Questionnaire collects detailed information about voluntary, helping, and leisure and sports activities that respondents attend in the last four weeks.

In the voluntary activity part of the questionnaire, the respondents are asked the following three questions for each activity: *i*) Did you do any voluntary activity? *ii*) How often, did you do this voluntary activity? and *iii*) How much time did you spend on this voluntary activity? The activities in the voluntary activity part of the questionnaire can be considered as organizational-based volunteering (*formal volunteering*). In the helping activity part of the questionnaire, the respondents are asked to answer the following five questions for each activity: *i*) Did you help someone else outside the household? *ii*) How often, did you do this helping activity? *iii*) How much time did you spend on this helping activity? iv) For whom, did you do this help, and v) Did you receive any payment in return for this help? If the respondent's answer to the last question is "YES", we consider that the respondent did not do any helping activities in the last four weeks. Activities in this part can be thought as a form of direct volunteering (*informal volunteering*). In our main analysis sample, 5 percent of males and 3 percent of females participate in voluntary activities (*organizational-based volunteering*), whereas 19 percent of males and 33 percent of females engage in helping activities (*direct volunteering activities*).[5]

By using the data derived from respondents' answers, we define outcome variables as a combination of thirty-two voluntary and helping activities to measure the prosocial behavior of individuals.[6] More specifically, we define *four key outcome variables*[7]: *i*) the prosocial activity

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[4] In Diary part of the TUS, individuals are asked to fill two diaries one for a weekday and one for a weekend. The respondents record all of their daily activities for 24 hours at ten-minute intervals. The Diary collects the data on which activity the respondents do in weekdays and weekend. In addition, the data includes when individuals do these activities, how much time individuals spent for each activity, and where individuals do these activities. Turkish Statistical Institute groups primary activities in the diary in 10 categories: personal care, employment, education, household and family care, voluntary works and meetings, social life and entertainment, sports and outdoor activities, hobbies and computing, mass media, travel and unspecified time use. The TUS collects the information about how much time the individuals spent in these primary activities. See Table A.3. in Appendix A for detailed information.

[5] Note that when we analyze all observations, we report that 5 percent of males and 2 percent of females participate in voluntary activities (*organizational-based volunteering*), while 18 percent of males and 26 percent of females engage in helping activities (*direct volunteering activities*).

[6] See Table A.1. in Appendix A for detailed explanation of the composition of voluntary and helping activities.

[7] To check the robustness of our results, we generate three additional prosocial activity outcome measures: *i*) Prosocial Activity Number Index, *ii*) Prosocial Activity Frequency Index, and *iii*) Prosocial Activity Time Index. See Table A.4. in Appendix A for the explanation of the variables.

participation, *ii*) the number of prosocial activities, *iii*) the frequency of prosocial activity, and *iv*) time spent in prosocial activity.[8] Individual Questionnaire also allows us to analyze the attendance of individuals' *leisure and sports activities* in the last four weeks. Similar to prosocial activities, we construct four outcome variables to measure the leisure and sport activity outcomes[9]: *i*) leisure and sports activity participation *ii*) the number of leisure and sports activities, *iii*) the frequency of leisure and sport activity, and *iv*) time spent in leisure and sport activity.[10]

Individual Questionaire also allows us to study the labor market outcomes of individuals. In particular, the survey collects data on respondents' employment status, earnings, hours worked, occupations, side job, and full-time/part-time employment. However, the survey data does not provide any information about the respondent's actual wage. In particular, the survey asks the respondent to indicate his/her wage group among five wage groups stated in the Individual Questionnaire.[11] We, therefore, construct an outcome variable, called *High Wage*, to measure the effects of education on individuals' earnings. In particular, *High Wage* is a binary variable that takes the value 1 if the respondent's wage group is in the higher wage groups, and takes the value 0 if the respondent's wage group is in the low wage group. The cutoff value that separates the high-wage group and the low-wage group is close to the average minimum wage of Turkey in 2014 and 2015.

As stated in previous sections, we use the compulsory schooling reform as an instrument in our analysis, and by the help of individuals' year of birth, we distinguish those who were exposed to the compulsory schooling reform and those who were not. Specifically, we generate a dummy variable, *Reform,* the instrumental variable of our IV regressions, which takes the value 1 if individuals were born after 1986, and 0 otherwise.[12] The TUS does not contain any information on individuals' years of schooling. Instead, the respondents are asked about what is the most recent degree they obtained. The respondents' answers to this question are grouped into 5 categories: *i*) No degree, *ii*) primary school degree, *iii*) middle school degree or vocational middle school degree, *iv*) high school or vocational high school degree, and *v*) university degree

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[8] See Table A.4. in Appendix A for the explanation of the variables.
[9] See Table A.2. in Appendix A for detailed explanation for the composition of leisure and sport activities.
[10] See Table A.4. in Appendix A for the explanation of the variables.
[11] In the Individual Questionnaire, there are five wage groups that represents the wage of the respondent: Wage group 1: 0-1080 Turkish Liras (TL), Wage group 2: 1081-1550 Turkish Liras (TL), Wage Group 3: 1551-2170 Turkish Liras (TL), Wage Group 4: 2171-3180 Turkish Liras (TL), and Wage Group 5: 3181 Turkish Liras (TL), and higher. Minimum wage in 2014 and 2015 are 891.04 TL and 1,000.55 TL, respectively. We can consider that individuals in wage group 1 earn less than or equal to average minimum wage of Turkey in 2014 and 2015.
[12] See Table A.5. in Appendix A for detailed explanation for the chorts which were exposed to Turkish Compulsory Schooling Reform and the cohorts which were not.

or master/Ph.D. By using the data on education status, we generate a binary variable, *MiddleSchool*, which is the key independent variable in our analysis and takes the value 1 if individuals complete at least middle school, i.e., at least eight years of schooling, and 0 otherwise.

Our main analysis sample includes individuals born between 1979 and 1993, which corresponds to individuals aged between 21 and 36. The treatment group consists of individuals born between 1987 and 1993 (*aged 21-28*), whereas the control group consists of individuals born between 1979 and 1985 (*aged 29-36*). As we mentioned before, the exposure to reform for the 1986 birth cohort is uncertain. We, therefore, exclude those born in 1986 from our main analysis (see, for instance, Kırdar, Dayioglu, and Koc, 2018; Dursun and Cesur, 2016; Cesur and Mocan, 2018; Dursun, Cesur, and Mocan, 2018).[13]

3.2. DESCRIPTIVE STATISTICS

Table 1 displays the descriptive statistics by exposure to the compulsory schooling reform for males (column 1 to 3) and females (column 4 to 6). The treatment group consists of individuals born between 1987 and 1993, and the control group includes those born between 1979 and 1985. In other words, we provide descriptive statistics for individuals between the ages of 21 and 36. As shown in Panel A, compared with individuals in the control group, the proportion of individuals who hold at least a middle school diploma is higher among those who are in the treatment group (see Figure 1 in Appendix B). However, the difference is more pronounced for females. About % 78 of females in the treatment group completed at least middle school, whereas the corresponding rate is % 49 for females in the control group. On the other hand, at least middle school completion rate is % 91 for males in the treatment group, while % 67 of males in the control group have a middle school diploma or more. Nearly, % 28 of males and % 22 of females in the treatment group are enrolled in the school, while about % 9 of both males and females in the control group are enrolled in the school when the survey was conducted. Males and females in the treatment group are around 24 years old, while males and females in the control group are around 32 years old. Compared with individuals in the control group, on average, the proportion of single males and females in the treatment group are higher.

In Panel B of Table 1, we report descriptive statistics for labor market outcomes, which are important mechanisms through which increased education may have an effect on prosocial activities. The proportion of individuals who are employed in the treatment group is lower than

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[13] We also estimate our model by including the birth cohort of 1986. Including those born in 1986 does not change our main results.

those in the control group which is most probably due to the fact that the treatment group is younger. The difference is striking for males. % 74 of males are employed in the treatment group, while the employment rate of males is around % 93 in the control group. The corresponding employment rates of females are about % 33 in the treatment group and % 36 in the control group. This result is consistent with the overall pattern in Turkey, where the female labor force participation has remained stagnant around % 32 across time. For employed individuals, we report descriptive statistics for *HighWage* and *HoursWorked*. Employed males both in treatment and control groups earn more than employed females. That is, % 52 of monthly/daily paid males in the treatment group and % 67 of monthly/daily paid males in the control group earn higher than the average minimum wage of 2014 and 2015, while % 47 of monthly/daily paid females in the treatment group and %55 of monthly/daily paid females in the control group earn higher than the average minimum wage of 2014 and 2015. Approximately, employed males in the treatment and control group work about 53 hours in a week, whereas employed females in the treatment group work about 45 hours and females in the control group works about 43 hours in a week.

In Panel C of Table 1, we provide descriptive statistics for the prosocial activity measures by using the data from the Individual Questionnaire. [14] We first report that the average time spent in prosocial activities. Our results show that on average, individuals in the treatment group spent less time in prosocial activities than individuals in the control group (see also Figure 2 in the Appendix B). The difference between the control and treatment groups is even more pronounced for males. Approximately, males in the treatment group spent 77.8 minutes in prosocial activity; on the other hand, the corresponding time in the control group is 117.6 minutes. We also report that females in the treatment group allocate on average 202.5 minutes over prosocial activities, whereas the average allocated time in prosocial activity in the control group is 255.3 minutes. We next present the average frequency of prosocial activity. Individuals in the treatment group display prosocial behavior less frequently than individuals in the control group (see Figure 3 in Appendix B). That is, for males and females in the treatment group, the average frequency of prosocial activity is 1.206 times and 3.106 times, respectively, while the

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[14] We also display descriptive statistics for voluntary activities (*organization-based volunteering*) and helping activities (*direct volunteering*) in Table B.1. in Appendix B. We report that on average, individuals in the treatment and control groups engage in more helping activities than voluntary activities as the mean of time spent in helping activities, frequency of helping activity, number of helping activities, and helping activity participation are larger. In addition, males in the treatment and control groups engage in more voluntary activities than females in the treatment and control groups, while females in the treatment and control groups participate in more helping activities than males in the treatment and control groups. Our descriptive statistics further shows that compared with individuals in the control group, individuals in the treatment group display less voluntary and helping behavior.

corresponding frequencies in the control group are 1.572 times and 3.678 times, respectively. In Table 1, we show that on average, the individuals in the control group participate in more prosocial activities than those in the treatment group which is also depicted in Figure 4 in Appendix B. In particular, the average number of prosocial activities displayed by males and females in treatment group are 0.371 and 0.710, respectively; while the average number of prosocial activities attended by males and females in the control group are 0.489 and 0.827, respectively. Finally, we report the proportion of individuals who participate in prosocial activity. In line with previous results, the proportion of individuals engaging in prosocial activities in the control group are larger than the proportion of individuals in the treatment group (see Figure 5 in Appendix B). In other words, the proportion of males and females participating in prosocial activity in the control group are around % 23.3 and % 36.9, respectively, whereas the corresponding proportion of males and females in the treatment group are around % 19.6 and % 30.5, respectively. Overall, our descriptive statistics show that individuals in the treatment group display less prosocial behavior than individuals in the control group. However, there are also differences in their marital status and employment status that probably due to the difference in their ages that need to be addressed in the empirical analysis.

TABLE 1. Descriptive Statistics

VARIABLES	Males			Females		
	All	Treatment	Control	All	Treatment	Control
PANEL A: Background Information	(1)	(2)	(3)	(4)	(5)	(6)
Middle School Completion	0.781	0.911	0.672	0.622	0.779	0.491
	(0.414)	(0.285)	(0.470)	(0.485)	(0.415)	(0.500)
Age	28.98	24.63	32.63	29.05	24.62	32.74
	(4.476)	(2.076)	(2.014)	(4.528)	(2.027)	(2.046)
Marital Status: Single	0.466	0.728	0.245	0.285	0.463	0.136
	(0.499)	(0.445)	(0.430)	(0.452)	(0.499)	(0.343)
Enrolled in School	0.175	0.281	0.0852	0.148	0.220	0.088
	(0.380)	(0.450)	(0.279)	(0.355)	(0.414)	(0.283)
PANEL B: Labor Market Outcomes						
Employment	0.842	0.740	0.928	0.350	0.333	0.364
	(0.365)	(0.439)	(0.259)	(0.477)	(0.471)	(0.481)
Hours Worked*	53.23	52.72	53.57	43.69	45.20	42.54
	(14.63)	(14.83)	(14.49)	(14.71)	(14.02)	(15.12)
High Wage*	0.608	0.519	0.671	0.515	0.473	0.549
	(0.488)	(0.500)	(0.470)	(0.500)	(0.500)	(0.498)
PANEL C: Prosocial Activity						
Time Spent in Prosocial Activity	99.43	77.80	117.6	231.3	202.5	255.3
	(476.7)	(351.5)	(560.0)	(784.5)	(784.7)	(783.7)
Frequency of Prosocial Activity	1.405	1.206	1.572	3.418	3.106	3.678
	(4.734)	(4.279)	(5.080)	(9.057)	(8.756)	(9.297)
Number of Prosocial Activities	0.435	0.371	0.489	0.774	0.710	0.827
	(1.086)	(0.962)	(1.177)	(1.385)	(1.381)	(1.386)
Prosocial Activity Participation	0.216	0.196	0.233	0.340	0.305	0.369
	(0.412)	(0.397)	(0.423)	(0.474)	(0.461)	(0.483)
Observations	2,870	1,309	1,561	3,128	1,424	1,704

Notes: Table shows the mean, standard deviation, and the number of observations from 2014-2015 Turkish Time Use Survey data. Column (1), (2), and (3) report the results for males and column (4), (5) and (6) displays the results for females. The treatment group consists of individuals born between 1987 and 1993, and the control group consists of those born between 1979 and 1985. The 1986 cohort is excluded. Panel A of Table 1 reports the background information about individuals. Panel B of Table 1 shows descriptive statistics for labor market outcomes. Panel C of Table 1 displays descriptive statistics for the prosocial activity. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school; i.e. at least eight years of schooling, and 0, otherwise. *Employment* is a dependent variable that takes the value 1 if the respondent works for one hour with/without receiving payment during the last week or the respondent is temporarily unemployed, and 0 otherwise. *Hours Worked* is a dependent variable that represent worker's hours worked in a week at main job and side job for the employed sample. *High Wage* is a dummy variable that takes the value 1 if monthly/daily paid respondent's wage group is in the higher wage groups, takes the value 0 if monthly/daily paid respondents' wage group is in the lowest wage group. * *Hours Worked* and *HighWage* are calculated for employed individuals. Standard deviations are in the parenthesis.
Source: 204-2015 Turkish Time Use Survey

4. METHODOLOGY

4.1. CONCEPTUAL FRAMEWORK

In this study, we mainly conceptualize the following two frameworks:

- *Education improves the labor market outcomes of individuals.*

  If schooling increases individuals' real wage, the opportunity cost of non-work hours increases. If the substitution effect dominates the income effect, individuals may substitute work hours for time spent in prosocial activities. If on the other hand, the income effect dominates, individuals may increase their prosocial activity; however, the composition of prosocial activity may change, i.e., individuals may increase monetary donations and decrease volunteer hours.

- *Education may affect individuals' preferences.*

  If education teaches prosocial values, it might increase individuals' prosocial activity; if on the other hand education enhances individualism and self-centrism, it might decrease individuals' prosocial activity.

Hence, the theory yields ambiguous results for the impact of education on prosocial behavior, and it is ultimately an empirical investigation that will establish the causal link between education and prosocial behavior. However, the conceptual framework will shed light on our empirical investigation. For example, if we find a negative causal effect of education on prosocial behavior, we can conclude that the substitution effect is likely to dominate the income effect. We will further investigate the effect of education on the probability of receiving a higher wage and hours worked to strengthen our results. Theory suggests that the substitution effect dominates the income effect when income is low. We would further examine whether this is the case in our data. The preference hypothesis will also be tested by examining how education affects time spent in leisure and sports activities.

4.2. EMPIRICAL FRAMEWORK

In the first part of our analysis, we study the effects of education on prosocial behavior and test our hypotheses by using the ordinary least squares (OLS) technique:

$$PR_i = \beta_0 + \beta_1 MiddleSchool_i + \beta_2 X_i + \varepsilon_i, \tag{1}$$

PR represents a particular outcome for the *i*th individual, such as the prosocial activity participation, the number of prosocial activities, the frequency of prosocial activity, and the time spent in prosocial activity. *MiddleSchool* is a dummy variable equal to 1 if the individual

completes at least middle school, i.e., at least eight years of schooling. X_i is a vector of control variables including sex, survey year fixed effects and the region of residence fixed effects for the 12 regions in the country. We capture age trends in both prosocial behavior outcomes and education at each birth cohort level by using linear approximations on both sides of the cut off birth year, *1986*, with respect to the education reform status (Fort, Schneewis, and Winter-Ebmer, 2014; Dursun and Cesur, 2016; Cesur and Mocan, 2018; Dursun, Cesur, and Mocan, 2018). Hence, we include control variables defined as re-centered birth year differentiated by exposure to the education reform status. In particular, we define the control variables, re-centered birth year, for the treatment group as $Recentered\ Birth\ Year_{tre} = Reform_i \times (Birth\ Year - 1986)$ and re-centered birth year for the control group as $Recentered\ Birth\ Year_{cont} = (1 - Reform_i) \times (Birth\ Year - 1986)$, where *Reform* takes the value 1 if the individual was born after 1986, and it takes the value 0 if the individual was born before 1986 and Birth Years is the year that the individual was born.

As we mentioned before, estimating equation (1) by OLS may produce upward biased estimates of β_1, due to the endogeneity problems such as *omitted variable bias* and *reverse causality*. To address these endogeneity problems, following previous literature, we implement the Instrumental Variable (IV) approach, where the 1997 Compulsory Schooling Law in Turkey used as an instrument for education.[15] The IV approach allows us to distinguish the causal effect of education on individuals' prosocial behavior by exhibiting exogenous variation in the level of schooling but not in individuals' prosocial behavior outcome. Therefore, we first regress educational attainment, *MiddleSchool*, on the instrumental variable, *Reform. The first stage* regression is expressed in the following functional form

$$MiddleSchool_i = \gamma_0 + \gamma_1 Reform_i + \gamma_2 X_i + \mu_i \qquad (2)$$

where *Reform* takes the value 1 if the individual was born after 1986, and it takes the value 0 if the individual was born before 1986.

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[15] See, Angrist and Krueger (1991), Oreopoulos (2006), Oreopoulos (2007), Dee (2004), Milligan, Moretti and Oreopoulos (2004), Larreguy and Marshall (2017), Hener and Wilson (2018) for an example of earlier and more recent studies that uses compulsory schooling reform as an instrument.

5. RESULTS

In this section, we first investigate the effects of the compulsory schooling reform on schooling outcomes, and then we examine the impact of education on prosocial behavior outcomes.

5.1. SCHOOLING OUTCOMES

Table 2 reports the effects of compulsory schooling reform on the educational attainment of individuals. The first stage results of IV regressions are derived from equation (2) and displayed in column (1), (2), and (3) of Table 2, for the whole sample, males, and females, respectively. We find that the compulsory schooling reform significantly increases the educational attainment of individuals. In particular, column (1) reports that for the whole sample, the compulsory schooling leads to an increase in the educational attainment by 12.2 ppt. Column (2) and (3) of Table 2 shows that the education reform raises the propensity to complete at least eight years of schooling by 12.8 ppt and 11.6 ppt for males and females, respectively.

We also test the strength of the instrument and examine whether the F-statistic for the significance of the instrument in the first-stage exceed 10 or not (Staiger and Stock (1997). Our findings indicate that the F-statistics of the first stage of IV regressions are 19.575 and 17.423, for males and females, respectively. These results conclude that our instrument, *Reform*, is strong enough to explain the variation in the endogenous variable, *MiddleSchool*.

We also explore the impact of the compulsory schooling reform on being at least a high school graduate and a university graduate. However, we do not find any significant effects of the educational reform on the likelihood of completing either high school or university.[16]

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[16] See, Table B.2. in Appendix B, for detailed information.

TABLE 2. The Effects of Compulsory Schooling Reform on Education

VARIABLES	(1) Whole Sample	(2) Males	(3) Females
Reform	0.122***	0.128***	0.116***
	(0.019)	(0.029)	(0.028)
Sex (==1 if male)	0.156***		
	(0.012)		
Re-centered Birth Year$_{tre}$	0.019***	0.012***	0.027***
	(0.003)	(0.004)	(0.004)
Re-centered Birth Year$_{cont}$	0.019***	0.017***	0.019***
	(0.003)	(0.005)	(0.004)
Constant	0.526***	0.720***	0.654***
	(0.038)	(0.063)	(0.047)
Observations	5,998	2,870	3,128
R-squared	0.161	0.114	0.164
F-statistics	43.146	19.575	17.423

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. The dependent variable, *MiddleSchool,* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

5.2. PROSOCIAL BEHAVIOR OUTCOMES

In this section, we investigate whether the reform has a significant impact on prosocial behavior. We use the prosocial activity participation, number of prosocial activities, frequency of prosocial activity, and time spent in prosocial activity as our prosocial behavior outcomes. Table 3 reports the impact of education on prosocial behavior of individuals. Columns (1), (3), and (5) of Table 3 lists OLS estimates, columns (2), (4), and (6) of Table 3 report IV estimates.

First of all, we investigate the effects of education on time spent in prosocial activity. Table 3 displays the causal effects of having at least a middle school on time spent in prosocial activity. The OLS estimates in the first row of Table 3 shows that for the whole sample, males and females, there is no significant correlation between education and time spent in prosocial activity. In order to provide causal evidence on the effects of education on time spent in prosocial activity, we report the IV regression results in the column (2), (4), and (6). For males, the completion of middle school leads to a decrease in time spent in prosocial activities by 779 minutes. We show that for females, there is no significant causal effect of increased education level on time spent in prosocial activity. When we pool the sample, we find that the additional years of schooling, due to the change in compulsory schooling reform, increased education leads to a decrease in time spent in prosocial activity by 591 minutes.

Secondly, in Table 3, we display the impact of additional years of schooling on the frequency of prosocial activity. As depicted in the second row of Table 3, there is no significant correlation between education and the frequency of prosocial activity for the whole sample and females. On the other hand, column (3) of Table 3 indicates that for males, educational attainment is positively and significantly correlated with the frequency of prosocial activity in OLS regressions. The IV results, however, show that for males and females, the effect of obtaining at least middle school degree on the frequency of prosocial activity is negative, but statistically insignificant for all estimation intervals. Pooling samples of males and females does not change the results.

Next, we present the results obtained from OLS and IV regressions, where the dependent variable is the number of prosocial activities. For the whole sample, and males, there is a positive and significant correlation between the number of prosocial activities and education in our OLS regressions. For females, however, we do not observe any significant correlation between education and the number of prosocial activities. We also report IV estimates in the third row of Table 3. In line with the results where the frequency of prosocial activity is the dependent variable, for males and females, we report that the effect of increased education on the number of prosocial activities is negative but statistically insignificant for all estimation

intervals. When we pool the sample, we again observe that there is a negative but insignificant impact of education on the number of prosocial activities.

Finally, in the last row of Table 3, we present the effects of education on prosocial activity participation. OLS estimates indicate that for males, there is a positive correlation between education and the prosocial activity participation; on the other hand, for females, we do not observe any significant relationship. When we pool the sample, we find that educational attainment is significantly positively correlated with prosocial activity participation. IV results in the last row of Table 3 indicate that there are no significant causal effects of education on the prosocial activity participation for males and females.

Overall, we do not find any significant effects of education on female prosocial behavior. However, we find that education has a negative impact on male prosocial behavior as the time spent in prosocial activity significantly decrease. The causal effects of increased education, due to change in the compulsory schooling reform, on the number of prosocial activities, frequency of prosocial activity, and prosocial activity participation is negative but statistically insignificant for all estimation intervals. Although we do not find a significant effect of education on these outcome variables, IV estimations convert the sign of β_1 from positive to negative that implies that OLS may produce upward bias estimates of β_1. As a result, we find that there is a significant negative causal effect of education on prosocial behavior at the intensive margin, but no significant effect on the extensive margin.

We also report the impact of increased education on voluntary (*organization-based volunteering*) and helping behavior (*direct volunteering*) in Table B.3. and Table B.4. in Appendix B, respectively. Estimating the effects of education on the composition of prosocial activities, we show that the negative and significant impact of increased education on males' time spent in prosocial activity is due to the fact that increased education significantly reduces time spent in helping activities (*direct volunteering, i.e., informal volunteering*). We do not find any significant impact of education on voluntary behavior of individuals (*organization-based, i.e., formal volunteering*).

TABLE 3. The Effects of Education on Prosocial Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		Males		Females	
DEPENDENT VARIABLES	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-5.907	-591.001**	24.564	-779.132**	-30.386	-403.567
	(17.747)	(301.449)	(24.938)	(339.715)	(28.880)	(441.163)
Frequency of Prosocial Activity	0.107	-3.388	0.761***	-4.461	-0.402	-2.814
	(0.238)	(3.547)	(0.219)	(3.419)	(0.363)	(5.573)
Number of Prosocial Activities	0.126***	-0.519	0.232***	-0.598	0.035	-0.463
	(0.038)	(0.591)	(0.046)	(0.745)	(0.051)	(0.894)
Prosocial Activity Participation	0.048***	-0.097	0.069***	-0.311	0.028	0.124
	(0.014)	(0.201)	(0.018)	(0.288)	(0.019)	(0.298)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

6. CAUSAL CHANNELS

We have established the negative causal relationship between education and prosocial behavior. In this section, we investigate the causal channels through which education reduces displaying prosocial behavior. Our conceptual framework sheds light into our empirical investigation. We examine two channels that potentially have an impact on individuals' prosocial activity outcomes: Labor market outcomes and preferences.

6.1. LABOR MARKET OUTCOMES

In this section, we examine the effects of change in the compulsory schooling law on labor market outcomes. We expect that if education increases individuals' real wage, the opportunity cost of non-work hours increases. If the substitution effect dominates the income effect, individuals will increase hours worked and decrease time spent in prosocial activities. Therefore, we first examine the effects of education on labor market outcomes. Then, we investigate how increased education shape workers' prosocial behavior.

Table 4 presents the effects of education on labor market outcomes. Column (1), (2), and (3) of Table 4 show the results derived from OLS regressions and column (2), (4), and (6) report the results from IV regressions. We first investigate the impact of education on employment. OLS estimates in the first row indicate a positive relationship between education and employment. However, we find no causal evidence of a significant change caused by the education reform.[17] We then check whether increased education affects workers' earnings. We find that there is a positive and significant correlation between education and the probability of earning higher wages for both males and females. However, IV results in the second row of Table 4 show that for males, the increased education level has significantly increased the likelihood of earning a higher wage. For females, there is no significant impact of education on the probability of earning higher wages. However, when we pool the sample, we observe that increased education leads to a significant increase in the probability of earning higher wages. Finally, we investigate whether the reform increases workers' hours worked. The IV results in the second row of Table 4 displays that for males, the change in the schooling level increases hours worked by 24.5 hours per week. For females, we do not find any significant impact of education on hours worked. As a result, we observe that for males, education significantly increases the likelihood of earning higher wages and hours worked. We expect that if schooling increases individuals' real wage, the opportunity cost of non-work hours increases. And, if the

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[17] Our results are consistent with the findings of Torun (2018). Torun (2018) examines the effects of the 1997 Turkish education reform on labor market outcomes, especially individual's early labor market outcomes, and find that the compulsory schooling reform does not increase employment of individuals.

substitution effect dominates the income effect, individuals will increase hours worked and decrease time spent in prosocial activities.

To investigate whether an increase in hours worked reduce individuals' time spent in prosocial activity, we examine the effects of education on prosocial behavior in the subsample of employed individuals. Table 5 displays the results. As seen from the first row of Table 5, there is a positive correlation between education and time spent in prosocial activity. However, IV estimates in the first row of Table 5 indicates that for males, the completion of middle school as a result of the change in the compulsory schooling reform leads to a decrease in time spent in prosocial activity by 889 minutes. Note that this is higher than the whole sample as expected. Consistent with our main results, in which we do not restrict the sample to employed individuals, we find negative but insignificant effects of education on the prosocial activity participation, number of prosocial activities, and frequency of prosocial activity. Moreover, we do not observe any significant impact of having at least a middle school diploma on female prosocial behavior consistent with our earlier results. As a result, we document that negative effects of education on prosocial behavior are more pronounced for employed males. Thus, our results suggest that the increase in hours worked might reduce an individual's time spent in prosocial activity.

We next explore the impact of education on prosocial behavior for the high-wage and low-wage groups separately. Economic theory suggests that the substitution effect is likely to dominate the income effect of a wage increase for low-income groups, and the opposite is true for high-income groups. Table 6 presents the results derived from IV regressions.[18] Column (1), (2) and (3) of Table 6 show the results for high-wage group and column (4), (5), and (6) of Table 6 display the results for the low-wage group. We do not observe any significant effects of education on prosocial behavior for the high-wage group, whereas we find a negative significant causal effect of education on time spent in prosocial activity for the low-wage group.[19] We suggest that in the high-wage group, the income effect is more likely to be dominant. On the other hand, in the low wage group, we expect that the substitution effect dominates the income effects, and individuals may substitute work hours for time spent in prosocial activity. Hence, our results are consistent with the theoretical prediction that the substitution effect is likely to be dominant for the low-wage group.

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[18] We also report the results derived from Reduced Form Regressions in Table B.5. in Appendix B.

[19] In the low-wage group, for males, we observe negative but insignificant impact of education on time spent in prosocial activities. The possible explanation why we lost the significance of estimates could be that the sample size of employed males in the low-wage group are so small, because when we pool the data, we find a significant negative causal impact of education on time spent in prosocial activity.

TABLE 4. The Effects of Education on Labor Market Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
VARIABLES	OLS	IV	OLS	IV	OLS	IV
Employment	0.138***	-0.026	0.036**	-0.217	0.199***	0.140
	(0.013)	(0.218)	(0.017)	(0.251)	(0.019)	(0.331)
Observations	5,998	5,998	2,870	2,870	3,128	3,128
High Wage	0.361***	0.811***	0.297***	0.925**	0.542***	0.517
	(0.025)	(0.304)	(0.028)	(0.397)	(0.034)	(0.440)
Observations	2,779	2,779	1,924	1,924	855	855
Hours Worked	-0.433	16.917	-2.612***	24.516*	3.957***	-2.473
	(0.703)	(10.976)	(0.806)	(13.508)	(1.143)	(13.863)
Observations	3,512	3,512	2,417	2,417	1,095	1,095

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *Employment* is a dependent variable that takes the value 1 if the respondent works for one hour with/without receiving payment during the last week or the respondent is temporarily unemployed, and 0 otherwise. *Hours Worked* is a dependent variable that represent worker's hours worked in a week for the employed sample. (*Hours worked at side job is included in hours worked at main job.*) *High Wage* is a dummy variable that takes the value 1 if monthly/daily paid respondent's wage group is in the higher wage groups, takes the value 0 if monthly/daily respondents' wage group is in the lowest wage group. *Hours Worked* and *HighWage* are calculated for employed individuals. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school; i.e. at least eight years of schooling, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.

Source: 2014-2015 Turkish Time Use Survey.

TABLE 5. The Effects of Education on Prosocial Behavior (*for employed individuals*)

VARIABLES	(1) Whole Sample OLS	(2) Whole Sample IV	(3) Males OLS	(4) Males IV	(5) Females OLS	(6) Females IV
PANEL A: IV Regressions						
Time Spent in Prosocial Activity	-7.027	-878.819**	14.874	-888.959**	-50.249	-926.690
	(23.052)	(370.947)	(28.006)	(391.140)	(53.114)	(758.104)
Frequency of Prosocial Activity	0.265	-5.170	0.700***	-3.587	-0.602	-9.901
	(0.296)	(3.887)	(0.239)	(3.866)	(0.719)	(9.841)
Number of Prosocial Activity	0.129**	-0.111	0.224***	-0.284	-0.065	0.152
	(0.050)	(0.729)	(0.049)	(0.825)	(0.101)	(1.313)
Prosocial Activity Participation	0.039**	0.049	0.062***	-0.114	-0.009	0.366
	(0.017)	(0.247)	(0.018)	(0.310)	(0.034)	(0.430)
PANEL B: First Stage						
Middle School Completion	0.126***		0.125***		0.125***	
	(0.027)		(0.032)		(0.046)	
F- statistics	21.011		15.408		7.468	
Observations	3,512	3,512	2,417	2,417	1,095	1,095

Notes: The sample consists of employed individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. Panel A of Table 5 displays the results derived from the IV regressions, where the prosocial activity participation, number of prosocial activity, frequency of prosocial activity, and time spent in prosocial activity are dependent variables. Panel B of Table 5 displays the results derived from the first stage regressions, where *MiddleSchool* is a dependent variable. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school; i.e. at least eight years of schooling, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993; and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont.}$ *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male; and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey.

TABLE 6. The Effects of Education on Prosocial Behavior: Wage Groups

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	High-Wage Group			**Low-Wage Group**		
	Whole Sample	**Males**	**Females**	**Whole Sample**	**Males**	**Females**
PANEL A: IV Regressions						
Time Spent in Prosocial Activity	-780.247	-1,168.471	379.736	-706.567**	-516.988	-1,291.462
	(796.266)	(869.551)	(1,240.381)	(324.923)	(319.473)	(793.856)
Frequency of Prosocial Activity	-2.125	-6.720	11.118	-4.463	-2.146	-10.876
	(7.399)	(8.386)	(12.893)	(4.113)	(3.885)	(7.497)
Number of Prosocial Activities	0.575	-1.089	4.675	-2.851	-1.449	-6.700
	(1.621)	(2.088)	(3.269)	(3.522)	(3.414)	(6.084)
Prosocial Activity Participation	0.286	-0.453	1.946*	-0.018	0.057	-0.206
	(0.505)	(0.686)	(1.171)	(0.193)	(0.267)	(0.296)
PANEL B: First Stage Results						
Middle School Completion	0.083***	0.085**	0.086**	0.214***	0.203***	0.236***
	(0.032)	(0.038)	(0.038)	(0.048)	(0.058)	(0.084)
F-statistics	6.807	4.990	5.112	19. 905	12. 109	7.832
Observations	1,609	1,169	440	1,170	755	415

Notes: The sample consists of monthly/daily paid individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. Panel A of Table 6 displays the results derived from the IV regressions, where the prosocial activity participation, number of prosocial activity, frequency of prosocial activity, and time spent in prosocial activity are dependent variables. Panel B of Table 6 displays the results derived from the first stage regressions, where *MiddleSchool* is a dependent variable. *High-Wage* group consists of the wage group 2, 3, 4, and 5. *Low-Wage* group is the lowest wage group, i.e., the wage group 1. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, i.e., at least eight years of schooling, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male; and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey.

6.2. INDIVIDUAL PREFERENCES

In this section, we explore the second causal channel through which education may reduce displaying prosocial behavior. As we discussed before, education may affect individuals' preferences. Individuals may become more civic minded and prosocial, or they may become more self-centered and decrease time spent in prosocial activity. We examine whether education affects individual preferences by analyzing time spent in leisure and sport activity. Hence, we expect that if the additional years of schooling allows individuals to increase engagement in leisure and sport activity, then individuals might reduce time spent in prosocial activity.

Table 7 shows the effects of education on leisure and sport activity. Column (1), (2), and (3) show the results derived from OLS regressions and column (2), (4), and (6) report the results from IV regressions. We first analyze the effects of education on time spent in leisure and sport activity. OLS estimates in the first row of Table 7 shows that for males, there is a positive statistically insignificant correlation between education and time spent in leisure and sport activity. Consistent with OLS results, the results derived from IV regressions indicate that middle school completion as a result of the educational reform leads to a rise in time spent in leisure and sports activities by 370 minutes. However, for males, we do not observe any significant causal impact of education on the frequency of leisure and sport activity, number of leisure and sports activities, leisure and sport activity participation. In particular, the causal effect of education is positive but statistically insignificant for all estimation intervals. We also find positive significant correlation between education and the frequency of leisure and sport activity and the number of leisure and sport activity. OLS estimates in the last row of Table 7 indicates that there is positive but insignificant correlation between education and the leisure and sport activity participation. Moreover, our results report that for females, there is no significant causal impact of education on leisure and sport activity outcomes, except for the frequency of prosocial activity.

Overall, we conclude that increased education induced by the change in compulsory schooling reform leads to a rise in male time spent in leisure and sport activity. This result supports our idea that an increase in time spent in leisure and sport activity may reduce time spent in prosocial activity.

TABLE 7. The Effects of Education on Leisure and Sport Activity

DEPENDENT VARIABLES	(1) Whole Sample OLS	(2) Whole Sample IV	(3) Males OLS	(4) Males IV	(5) Females OLS	(6) Females IV
Time Spent in Leisure and Sport Activity	21.145**	137.905	21.657	369.482*	19.059	-106.501
	(10.063)	(117.847)	(16.114)	(201.640)	(11.743)	(166.305)
Frequency of Leisure and Sport Activity	6.757***	9.875	7.033***	3.958	6.749***	15.711*
	(0.417)	(6.031)	(0.764)	(9.977)	(0.526)	(8.024)
Number of Leisure and Sport Activities	2.489***	0.990	2.588***	0.749	2.422***	1.294
	(0.076)	(1.257)	(0.122)	(1.843)	(0.095)	(1.730)
Leisure and Sport Activity Participation	0.002	-0.056	0.003	-0.034	0.003	-0.081
	(0.003)	(0.053)	(0.005)	(0.062)	(0.004)	(0.076)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *Leisure and Sport Activity Participation* is a dummy variable that takes the value 1 if individual attends at least one leisure or sport activities among thirty-four activities in the last four weeks, and 0, otherwise. *The number of Leisure and Sport Activities* is a dependent variable that represents the total number of leisure and sport activities attended by the respondent in the last four weeks. *The frequency of leisure and sport activity* is a dependent variable that represents the total frequency of each leisure and sport activities attended by the respondent in the last four weeks. *Time spent in leisure and sport activity* (*in minutes*) is a dependent variable that indicates the total time spent in each leisure and sport activity attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, i.e. at least eight years of schooling; and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male; and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

7. ROBUSTNESS CHECKS

In this section, we make several additional analyses to test the robustness of our results. First, we generate three alternative prosocial activity outcome measures: *i*) prosocial activity number index, *ii*) prosocial activity frequency index, and *iii*) prosocial activity time index. Table B.6. in Appendix B confirms our main findings in Section 5.

Second, we conduct a placebo test to investigate whether our results are due to the change in Turkish Compulsory Schooling law. We restrict our sample to individuals born between 1980 and 1985, where the corresponding age ranges from 29 to 35. Individuals in this sample are not exposed to the reform. To examine the effects of placebo reform on the prosocial behavior, we construct a dummy variable, *placebo reform*, that takes value 1 if the individual was born in 1983 and after, and 0 otherwise. The Panel A of Table B.7. in Appendix B shows that the placebo compulsory schooling reform has no significant effect on the educational attainment of individuals. The coefficient of the placebo reform is small, and F-statistics of the first stage of IV regressions are not different from zero. The Panel B of Table B.7. in Appendix B displays the results derived from the reduced form regressions and reports that the placebo reform has no significant effect on prosocial behavior. As a result, the placebo test confirms our main findings are due to the change in the compulsory schooling law.

Third, we check the robustness of our results by using the alternative estimation windows. In our main analysis, we restrict our sample to those born between 1979 and 1993 (i.e. a 7-year window). Therefore, we re-estimate our model by narrowing the window of cohorts 6-year window, 5-year window, and 4-year window, i.e., restricting the sample to cohorts of 1980-1992, 1981-1991, and 1982-1990. Table B.8. in Appendix B shows the results for the cohorts of 1980-1992 and reports that the point estimates are very similar to the estimates reported in Table 3. Table B.9. and Table B.10. in Appendix B presents the results for the cohorts of 1981-1991 and the cohorts of 1982-1990, respectively. As we expect, when the sample size gets smaller, the statistical significance level of estimates becomes lower than what we found for the larger sample. However, these results are in line with our main results reported in Table 3.

Fourth, we use alternative identification strategies, namely *IV-Tobit* and *Reduced Form*, to check the validity of our main identification method discussed in section 4. Table B.11. a. and Table B.11. b. in Appendix B reports results derived from Tobit and IV-Tobit regressions. Table B.12. in Appendix B presents the results derived from Reduced Form Regressions. Overall, the results derived from IV-Tobit and Reduced Form Regressions confirms the robustness of our results.

Fifth, we make alternative model specifications to test the validity of our model design. We cluster standard errors at birth cohort level by survey year.[20] Table B.13. in Appendix B presents that for males, education significantly reduce time spent in prosocial activity, but the statistical significance level of estimates becomes lower than what we found in our main analysis. We also estimate our model by including the 1986 birth cohort and assigning the variable, *Reform*, to the value of 0.50 and 0.33 for the birth cohort 1986. Table B.14. in Appendix B reports the results when we include the 1986 birth cohort. Table B.15. and Table B.16. in Appendix B displays the results when we assign *Reform* to the value of 0.50 and 0.33, respectively. As a result, we show that these modifications do not change our main results.

Sixth, we test whether our results are due to the differences in background characteristics between the treatment and control groups. First of all, we investigate whether the marital status affects the engagement in prosocial activity. Table B.17. in Appendix B shows that the negative causal effects of education on male prosocial behavior are not due to the marital status. We also study whether employment status has any impact on the engagement in prosocial activity. Table B.18. in Appendix B displays that our results are not due to the differences in the proportion of employed individuals in the treatment and control groups.[21]

8. CONCLUSION

We examine the causal effect of education on prosocial behavior defined as volunteering and helping activities by using the instrumental variable method where we utilize an extension in compulsory schooling in Turkey as an instrument for education. Using the Turkish Time Use Survey, we find that men decrease time spent in prosocial activity by 779 minutes over a period of four weeks. We do not find any significant effects of education on female prosocial behavior.

We further investigate the causal channels through which education translates into lower levels of engagement in prosocial behavior. First, we find that the increased education level, due to the change in compulsory schooling reform, improves the labor market outcomes of individuals. Our results show that for males, education increases the probability of earning higher wages and hours worked. Moreover, we observe that the negative effects of education on prosocial behavior are more pronounced for employed males. Hence, we suggest that for males, the increase in hours worked might lead to a decrease in time spent in prosocial activity.

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[20] Clustering standard errors at birth year by survey year generates 24 clusters as there are 12 regions and 2 survey years. Although the number of clusters is not large enough to get accurate inference, it provides us to check the robustness of our results.

[21] Note that the increased education does not have any significant causal impact on marital status and employment.

Second, we find evidence that education might have affected preferences for leisure, perhaps by enhancing individualism and self-centrism. We find that education increases the time spent in leisure and sports activity for men.

Hence, we conclude that increased education level had a causal negative impact on prosocial behavior in terms of time spent in helping and volunteering activities by improving labor market outcomes as men increased work hours and also by influencing preferences as they also increased time spent in leisure and sport activity.

Volunteer sector is a considerable economic force in the world (OECD, 2015; Salamon et al. 2018). In addition to its economic significance, volunteering performs important social functions by promoting social integration, civic participation and sentiments of altruism. Our findings have important consequences for the volunteering sector as education levels rise, more people join the labor force and increase work hours in many countries.

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TABLE A.1. Prosocial Activities in Individual Questionnaire

Voluntary Activity (*working for volunteer groups*)	Helping Activity (*helping to someone else outside the household*)
• social welfare groups • sport clubs • political groups and clubs • youth clubs • security/first aid groups • environmental groups • justice/human right groups • local community associations and regional solidarity groups • art and hobby groups • professional solidarity associations • school council • adult education groups • helping a place of worship (mosque building, cleaning, repair etc.) • other unspecified voluntary activities	• preparing food • cleaning home • washing or ironing clothes • gardening • caring for pet • caring for child • caring for disabled patient • paying bills • transporting a child to school, kinder garden etc. • transporting an adult to shopping center, hospital etc. • doing one's shopping • repairing house • repairing home appliance • repairing or fixing furniture • washing car • providing educational training • doing health related activities (blood pressure, measuring sugar, needless, etc.) • other unspecified helping activities

TABLE A.2. Leisure and Sport Activities in Individual Questionnaire

Leisure Activity	Sport Activity
• going to cinema • going to theatre • going to concert • going to ballet • going to exhibition or museum • going to library • watching sport competition • visiting relatives • visiting friends • going to fair, kermess or festivals • going to picnic • reading books • reading magazines and newspapers • watching TV • listening radio • going to cafes • going to internet cafes • going to shopping malls • solving puzzles • making nature walk • using social media • doing handcraft • doing other unspecified leisure activities	• cycling • swimming • running • skiing • playing football • playing basketball • playing volleyball • judo or karate • rowing or sailing or surfing • doing sports with equipment • doing other unspecified sport activities

TABLE A.3. Primary Activities in the Diary of Time Use Survey

ACTIVITY	SUB-HEADING OF ACTIVITY
Personal Care	• Sleeping • Eating • Other Personal Care
Employment	• Main Job and Second Job • Activities Related to Employment
Study	• Unspecified Study • School or University • Free Time Study
Household and Family Care	• Unspecified Household and Family Care • Food Management • Household Upkeep • Making and Care for Textiles • Gardening and Pet Care • Construction and Repairs • Shopping and Services • Household Management • Child Care • Help an Adult Family Member
Voluntary Works and Meetings	• Organizational Work • Informal Help to Other Households • Participatory Activities
Social Life and Entertainment	• Social Life • Entertainment and Culture • Resting-Time out
Sports and Outdoor Activities	• Physical Exercise • Productive Exercise • Sports-Related Activities
Hobbies and Computing	• Art and Hobbies • Computing • Games
Mass Media	• Reading • TV, Video, and DVD • Radio and Recordings
Travel and Unspecified Time Use	• Other or Unspecified Travel • Travelling to or from work • Travelling to school /university or from work • Travelling related to shopping / child care / household care • Travelling related to voluntary works and meetings • Travelling related to social life • Travelling related to other leisure time • Travelling related to changing locality • Filling diary of TUS/ unspecified leisure activities / Other unspecified time use

TABLE A.4. The Definition of Variables

VARIABLE	DEFINITION
Reform	A dummy variable that takes the value 1 if the respondent was born after 1986, and 0, otherwise.
Sex	A dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise.
Re-centered Birth Year$_{tre}$	A control variable that is jointly determined by the re-centered birth year (birth year-1986) and the dummy variable, Reform, that takes the value 1 for the respondent in the treatment group.
Re-centered Birth Year$_{cont}$	A control variable that is jointly determined by the re-centered birth year (birth year-1986) and the dummy variable, Reform, that takes the value 0 for the respondent in the control group.
Marital Status	A dummy variable that takes the value 1 if the respondent is single, i.e., the respondent has never been married or the respondent is divorced or widowed, and 0, otherwise.
Middle School Completion	A dummy variable that takes the value 1 if the respondent completes at least middle school; i.e. at least eight years of schooling, and 0, otherwise.
High School Completion	A dummy variable that takes the value 1 if the respondent completes at least high school, i.e. at least twelve years of schooling, and 0, otherwise.
University Completion	A dummy variable that takes the value 1 if the respondent completes at least university, i.e. at least sixteen years of schooling, and 0, otherwise.
Prosocial Activity Participation	A dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activity among thirty-two activities in the last four weeks, and 0, otherwise.
Number of Prosocial Activities	An outcome variable that represents how many voluntary and helping activities the respondent attends in the last four weeks. It is calculated by summing up the value of thirty-two dummy variables for each voluntary and helping activities attended by the respondent in the last four weeks.
Frequency of Prosocial Activity	An outcome variable that shows how often respondent attends voluntary and helping activities in the last four weeks. It is defined as total frequency of each voluntary and helping activities attended by the respondent in the last four weeks.
Time Spent in Prosocial Activity	An outcome variable that represents how much time the respondent spents while participating in the voluntary and helping activities in the last four weeks. It is calculated by summing up time spent in each voluntary and helping activities attended by the respondent in the last four weeks.
Prosocial Activity Number Index	A z-score constructed by averaging the z-scores of thirty-two dummy variables for each voluntary and helping activities attended by the respondent in the last four weeks.

Prosocial Activity Frequency Index	A z-score constructed by averaging the z-scores of the frequency of each voluntary and helping activities attended by the respondent in the last four weeks.
Prosocial Activity Time Index	A z-score constructed by averaging the z-scores of time spent in each voluntary and helping activities attended by the respondent in the last four weeks.
Leisure and Sport Activity Participation	A dummy variable that takes the value 1 if the respondent attends at least one leisure or sport activity among thirty-four activities in the last four weeks, and 0 otherwise.
Number of Leisure and Sport Activities	An outcome variable that represents how many leisure and sport activities that the respondent attends in the last four weeks. It is calculated by summing up the value of thirty-four dummy variables for each leisure and sport activities attended by the respondent in the last four weeks.
Frequency of Leisure and Sport Activity	An outcome variable that shows how often the respondent attends leisure and sport activity in the last four weeks. The frequency of the leisure and sport activity is defined as the total frequency of each leisure and sport activities attended by the respondent in the last four weeks.
Time Spent in Leisure and Sport Activity	An outcome variable that indicates total time spent in each leisure and sport activity. It is defined as total time spent in each leisure and sport activities attended by the respondent in the last four weeks.
Voluntary Activity Participation	A dummy variable that takes the value 1 if the respondent attends at least one voluntary activity among fourteen voluntary activities in the last four weeks, and 0, otherwise.
Number of Voluntary Activities	An outcome variable that represents how many voluntary activities the respondent attends in the last four weeks. It is calculated by summing up the value of fourteen dummy variables for each voluntary activity attended by the respondent in the last four weeks.
Frequency of Voluntary Activity	An outcome variable that shows how often respondent attends voluntary activities in the last four weeks. It is defined as total frequency of each voluntary activity attended by the respondent in the last four weeks.
Time Spent in Voluntary Activity	An outcome variable that represents how much time the respondent spends while participating in voluntary activities in the last four weeks. It is calculated by summing up time spent in each voluntary activity attended by the respondent in the last four weeks.
Helping Activity Participation	A dummy variable that takes the value 1 if the respondent attends at least one helping activity among eighteen helping activities in the last four weeks, and 0, otherwise.
Number of Helping Activities	An outcome variable that represents how many helping activities the respondent attends in the last four weeks. It is calculated by summing up the value of eighteen dummy variables for each voluntary activity attended by the respondent in the last four weeks.

Frequency of Helping Activity	An outcome variable that shows how often respondent attends helping activities in the last four weeks. It is defined as the total frequency of each helping activity attended by the respondent in the last four weeks.
Time Spent in Helping Activity	An outcome variable that represents how much time the respondent spends while participating in helping activities in the last four weeks. It is calculated by summing up time spent in each helping activity attended by the respondent in the last four weeks.
Employment	A dummy variable that takes the value 1 if the respondent works for one hour with/without receiving payment during the last week or the respondent is temporarily unemployed, and, 0 otherwise.
Hours Worked	An outcome variable that represents worker's total hours worked in a week at the main job and side job.
High Wage	A dummy variable that takes the value 1 if monthly/daily paid respondent's wage group is in the higher wage groups, and it takes the value 0 if monthly/daily paid respondents' wage group is in the lowest wage group. High-Wage group consists of the wage group 2, 3, 4, and 5. Low-Wage group is the lowest wage group, i.e., the wage group 1. (*Wage group 1*: 0-1080 Turkish Liras (TL), *Wage group 2*: 1081-1550 Turkish Liras (TL), *Wage Group 3*: 1551-2170 Turkish Liras (TL), *Wage Group 4*: 2171-3180 Turkish Liras (TL), and *Wage Group 5*: 3181 Turkish Liras (TL), and higher.)

TABLE A.5. Exposure to 1997 Compulsory Schooling Law in the 2014-2015 Survey Years

Exposure to the Law	Year of Birth	Age in 2014	Age in 2015
Yes	1999	15	16
Yes	1998	16	17
Yes	1997	17	18
Yes	1996	18	19
Yes	1995	19	20
Yes	1994	20	21
Yes	1993	21	22
Yes	1992	22	23
Yes	1991	23	24
Yes	1990	24	25
Yes	1989	25	26
Yes	1988	26	27
Yes	1987	27	28
Uncertain	1986	28	29
No	1985	29	30
No	1984	30	31
No	1983	31	32
No	1982	32	33
No	1981	33	34
No	1980	34	35
No	1979	35	36
No	1978	36	37
No	1977	37	38
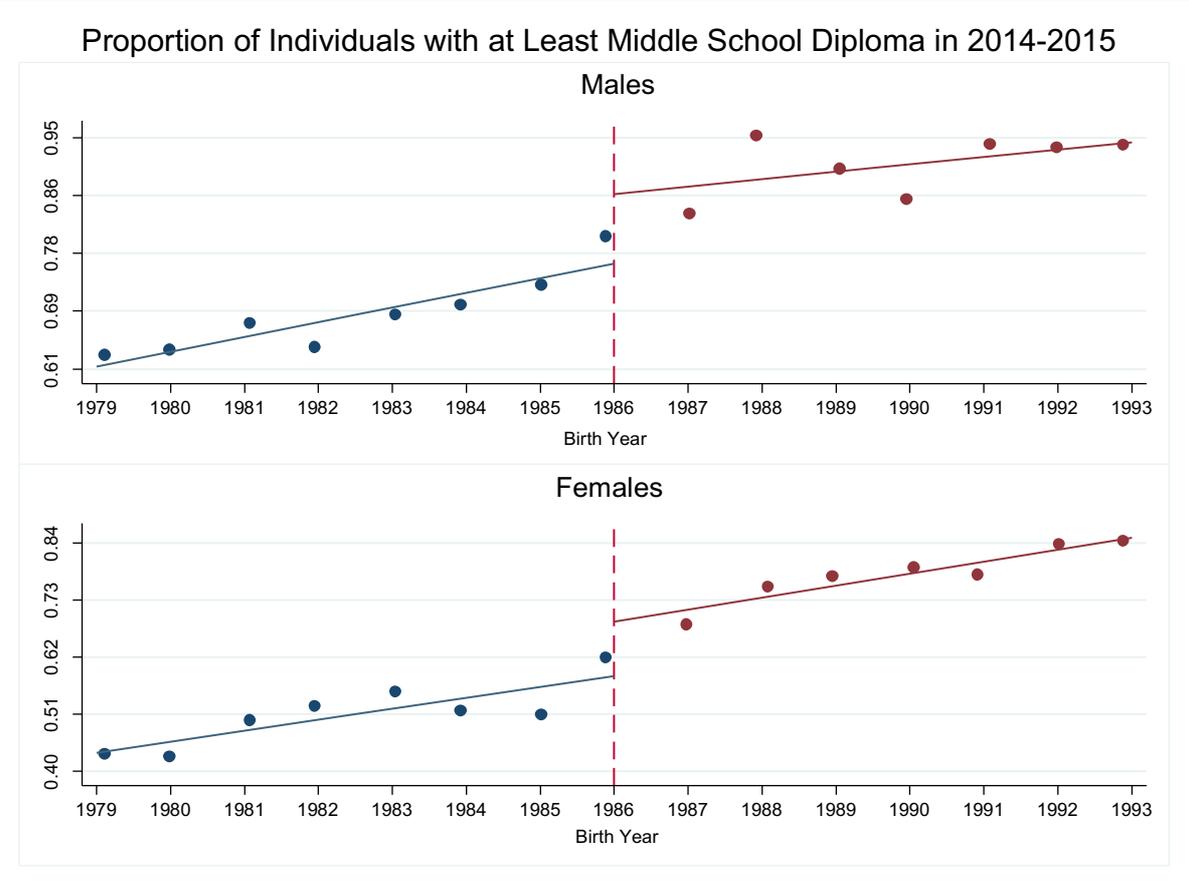
Figure 1: Proportion of individuals with at least middle school diploma in 2014-2015 by birth cohorts 1979 to 1993
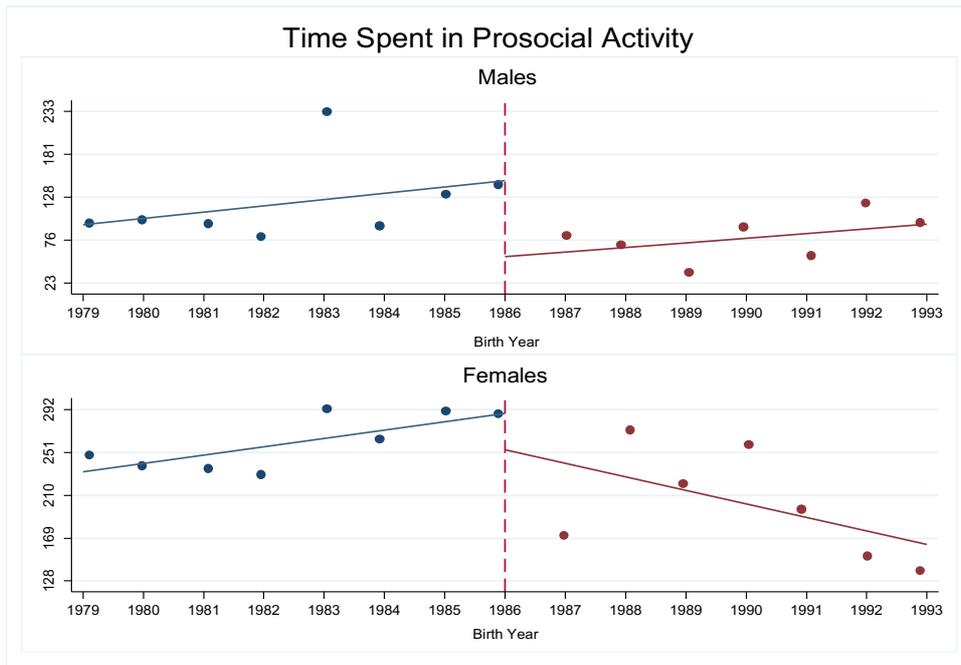
Figure 2: Average Time Spent in Prosocial Activity by birth cohorts 1979-1993
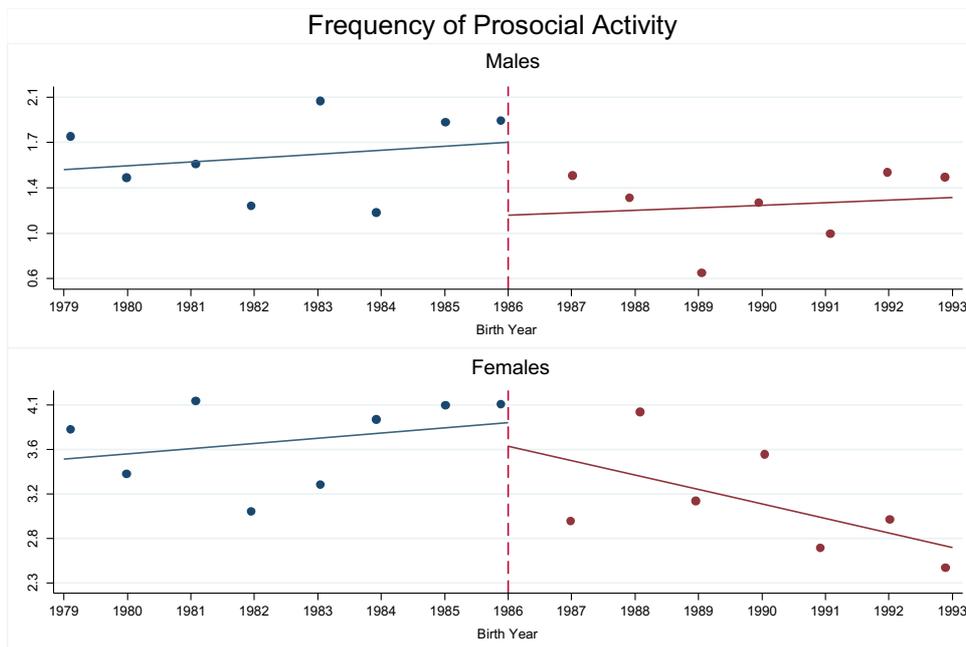

Figure 3: Average Frequency of Prosocial Activity by birth cohorts 1979-1993
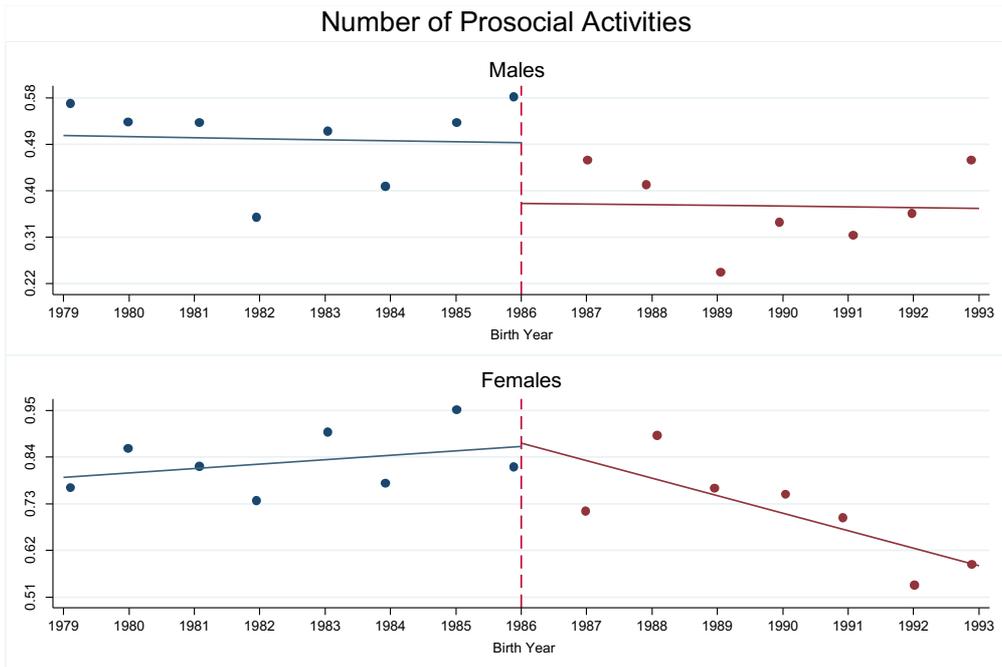
Figure 4: Average Number of Prosocial Activities by birth cohorts 1979-1993
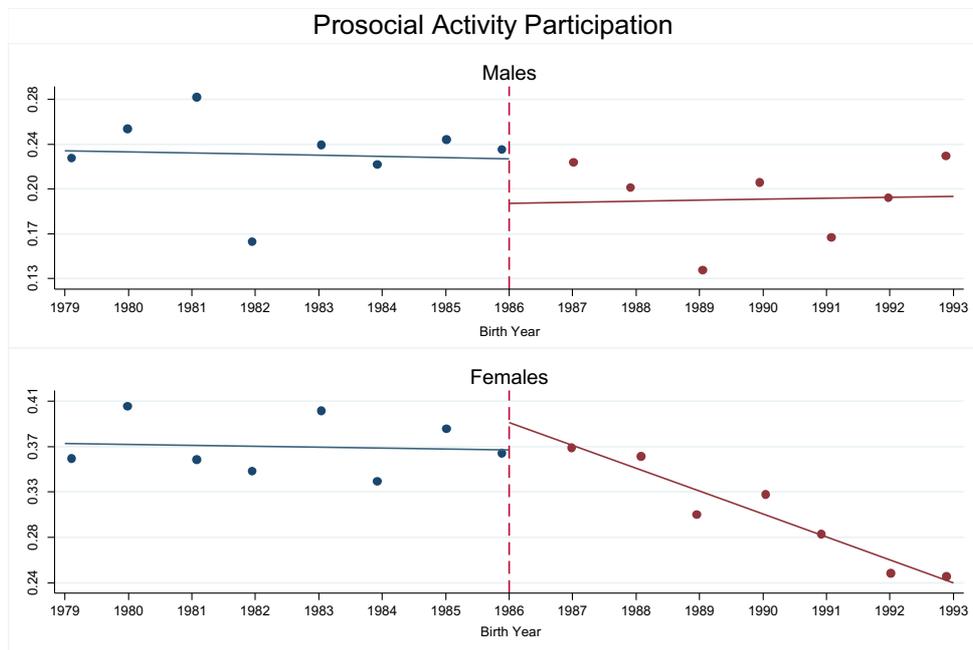
Figure 5: Average Prosocial Activity Participation by birth cohorts 1979-1993

TABLE B.1. Descriptive Statistics (cont'd)

VARIABLES	Males			Females		
	All	Treatment	Control	All	Treatment	Control
PANEL A: Voluntary Activity	(1)	(2)	(3)	(4)	(5)	(6)
Time Spent in Voluntary Activity	15.46	7.933	21.77	16.25	13.83	18.28
	(239.2)	(77.01)	(316.5)	(236.9)	(199.8)	(264.0)
Frequency of Voluntary Activity	0.198	0.137	0.249	0.123	0.0969	0.146
	(1.762)	(1.191)	(2.124)	(1.267)	(0.887)	(1.514)
Number of Voluntary Activities	0.0557	0.0428	0.0666	0.0352	0.0344	0.0358
	(0.273)	(0.217)	(0.311)	(0.215)	(0.208)	(0.221)
Voluntary Activity Participation	0.0474	0.0397	0.0538	0.0301	0.0295	0.0305
	(0.213)	(0.195)	(0.226)	(0.171)	(0.169)	(0.172)
PANEL B: Helping Activity						
Time Spent in Helping Activity	83.97	69.86	95.80	215.0	188.7	237.0
	(404.4)	(332.7)	(455.7)	(701.4)	(683.8)	(715.3)
Frequency of Helping Activity	1.207	1.070	1.323	3.294	3.009	3.532
	(4.254)	(4.074)	(4.397)	(8.852)	(8.531)	(9.108)
Number of Helping Activities	0.379	0.328	0.423	0.739	0.676	0.792
	(0.994)	(0.906)	(1.060)	(1.337)	(1.318)	(1.351)
Helping Activity Participation	0.194	0.173	0.213	0.328	0.298	0.353
	(0.396)	(0.378)	(0.409)	(0.470)	(0.457)	(0.478)
Observations	2,870	1,309	1,561	3,128	1,424	1,704

Notes: Table shows the mean, standard deviation, and the number of observations from 2014-2015 Turkish Time Use Survey data. Column (1), (2), and (3) report the results for males and column (4), (5) and (6) displays the results for females. The treatment group consists of individuals born between 1987 and 1993, and the control group consists of those born between 1979 and 1985. The 1986 cohort is excluded. Panel A of Table B.1. displays descriptive statistics for the voluntary activity participation, the number of voluntary activities, frequency of voluntary activity, and time spent in voluntary activity. Panel B of Table B.1. reports descriptive statistics for helping activity participation, number of helping activities, frequency of helping activity, and time spent in helping activity. Voluntary activity consists of activities such as working for volunteer groups (*social welfare groups, sport clubs, political groups, youth clubs, security/first-aid groups, environmental groups, local community associations and regional solidarity groups, art and hobby groups, professional solidarity associations, school council, adult education groups, and helping a place of worship*). Helping activity is composed of activities such as helping to someone else outside the household (*preparing food, cleaning home, washing or ironing clothes, gardening, caring for pet, caring for child, caring for disabled patient, paying bills, transporting a child to school, kinder garden etc., transporting an adult to shopping center, hospital etc., doing one's shopping, repairing house, repairing home appliance, repairing or fixing furniture, washing car, providing educational training, doing health-related activities (blood pressure, measuring sugar, needless, etc.), other unspecified helping activities*). Standard deviations are in the parenthesis.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.2. The Effects of Compulsory Schooling Reform on Education

VARIABLES	(1) High School Completion — Whole Sample	(2) Males	(3) Females	(4) University Completion — Whole Sample	(5) Males	(6) Females
Reform	0.030	0.025	0.034	0.035	0.031	0.039
	(0.028)	(0.042)	(0.036)	(0.026)	(0.036)	(0.035)
Sex	0.109***			0.026**		
	(0.013)			(0.012)		
Re-centered Birth Year$_{tre}$	0.007	-0.005	0.019***	-0.020***	-0.031***	-0.008
	(0.004)	(0.006)	(0.006)	(0.004)	(0.005)	(0.006)
Re-centered Birth Year$_{cont}$	0.018***	0.020***	0.015***	0.022***	0.024***	0.020***
	(0.004)	(0.007)	(0.005)	(0.004)	(0.005)	(0.005)
Constant	0.435***	0.639***	0.497***	0.310***	0.416***	0.243***
	(0.044)	(0.063)	(0.049)	(0.037)	(0.057)	(0.036)
Observations	5,998	2,870	3,128	5,998	2,870	3,128
R-squared	0.067	0.038	0.084	0.032	0.032	0.041
F-statistics	1.122	0.353	0.882	1.810	0.764	1.245

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. The dependent variable, *High School Completion,* is a dummy variable that takes the value 1 if the individual completes at least high school, and 0, otherwise. The dependent variable, *University Completion,* is a dummy variable that takes the value 1 if the individual completes at least university, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively. *Source*: 2014-2015 Turkish Time Use Survey

TABLE B.3. The Effects of Education on Voluntary Behaviour

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		Males		Females	
VARIABLES	OLS	IV	OLS	IV	OLS	IV
Time Spent in Voluntary Activity	-1.660	-157.270	4.664	-216.610	-7.188	-85.817
	(7.794)	(106.262)	(10.568)	(143.065)	(10.054)	(139.988)
Frequency of Voluntary Activity	0.064	-0.798	0.137*	-0.843	0.006	-0.730
	(0.046)	(0.814)	(0.078)	(1.424)	(0.053)	(0.841)
Number of Voluntary Activities	0.032***	-0.039	0.040***	-0.061	0.023***	0.000
	(0.007)	(0.108)	(0.015)	(0.173)	(0.007)	(0.146)
Voluntary Activity Participation	0.021***	0.021	0.025**	0.018	0.017**	0.034
	(0.006)	(0.087)	(0.012)	(0.131)	(0.007)	(0.120)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The voluntary activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary activity among fourteen activities in the last four weeks, and 0, otherwise. *The number of voluntary activities* is a dependent variable that represents the total number of voluntary activities attended by the respondent in the last four weeks. *The frequency of voluntary activity* is a dependent variable that represents the total frequency of each voluntary activity attended by the respondent in the last four weeks. *Time spent in voluntary activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary activity attended by the respondent in the last four weeks. Voluntary activity consists of activities such as working for volunteer groups (*social welfare groups, sport clubs, political groups, youth clubs, security/first-aid groups, environmental groups, local community associations and regional solidarity groups, art and hobby groups, professional solidarity associations, school council, adult education groups, and helping a place of worship*). *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.4. The Effects of Education on Helping Behaviour

VARIABLES	(1) Whole Sample OLS	(2) IV	(3) Males OLS	(4) IV	(5) Females OLS	(6) IV
Time Spent in Voluntary Activity	-4.246	-433.731	19.901	-562.523**	-23.199	-317.750
	(15.619)	(266.526)	(23.840)	(284.260)	(25.731)	(422.169)
Frequency of Voluntary Activity	0.043	-2.590	0.624***	-3.618	-0.408	-2.084
	(0.227)	(3.243)	(0.192)	(2.870)	(0.351)	(5.401)
Number of Voluntary Activities	0.094**	-0.481	0.192***	-0.536	0.011	-0.464
	(0.037)	(0.551)	(0.041)	(0.659)	(0.050)	(0.862)
Voluntary Activity Participation	0.037**	-0.083	0.065***	-0.344	0.012	0.180
	(0.014)	(0.200)	(0.017)	(0.273)	(0.019)	(0.290)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The helping activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one helping activity among eighteen activities in the last four weeks, and 0, otherwise. *The number of helping activities* is a dependent variable that represents the total number of helping activities attended by the respondent in the last four weeks. *The frequency of helping activity* is a dependent variable that represents the total frequency of each helping activity attended by the respondent in the last four weeks. *Time spent in helping activity (in minutes)* is a dependent variable that indicates the total time spent in each helping activity attended by the respondent in the last four weeks. *Helping activity* is composed of activities such as helping to someone else outside the household (preparing food, cleaning home, washing or ironing clothes, gardening, caring for pet, caring for child, caring for disabled patient, paying bills, transporting a child to school, kinder garden etc., transporting an adult to shopping center, hospital etc., doing one's shopping, repairing house, repairing home appliance, repairing or fixing furniture, washing car, providing educational training, doing health-related activities (blood pressure, measuring sugar, needless, etc.), other unspecified helping activities). *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.5. The Effects of Education on Prosocial Behavior: Wage Groups

	(1)	(2)	(3)	(4)	(5)	(6)
	High-Wage Group			**Low-Wage Group**		
VARIABLES	**Whole Sample**	**Males**	**Females**	**Whole Sample**	**Males**	**Females**
PANEL A: Reduced Form Regressions						
Time Spent in Prosocial Activity	-64.390	-99.397	32.701	-150.937**	-104.980*	-305.199*
	(63.647)	(63.908)	(105.936)	(68.089)	(60.123)	(159.919)
Frequency of Prosocial Activity	-0.175	-0.572	0.957	-0.953	-0.436	-2.570
	(0.610)	(0.653)	(0.993)	(0.897)	(0.808)	(1.569)
Number of Prosocial Activities	0.047	-0.093	0.403*	-0.073	-0.016	-0.254
	(0.136)	(0.169)	(0.233)	(0.144)	(0.159)	(0.277)
Prosocial Activity Participation	0.024	-0.039	0.168**	-0.006	0.028	-0.101
	(0.042)	(0.054)	(0.073)	(0.048)	(0.061)	(0.078)
PANEL B: First Stage Results						
Middle School Completion	0.083***	0.085**	0.086**	0.214***	0.203***	0.236***
	(0.032)	(0.038)	(0.038)	(0.048)	(0.058)	(0.084)
F-statistics	6.807	4.990	5.112	19. 905	12. 109	7.832
Observations	1,609	1,169	440	1,170	755	415

Notes: The sample consists of monthly/daily paid individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. Panel A of Table B.5. presents the effects of education on prosocial behavior for the respondents in the high-wage and low-wage groups. Panel B of Table B.5. displays the results derived from the first stage regressions, where *MiddleSchool* is a dependent variable. *High-Wage* group consists of the wage group 2, 3, 4, and 5. *Low-Wage* group is the lowest wage group, i.e., the wage group 1. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, i.e., at least eight years of schooling, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey.

TABLE B.6. The Effects of Education on Prosocial Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
DEPENDENT VARIABLES	OLS	IV	OLS	IV	OLS	IV
Prosocial Activity Time Index	0.003	-0.243**	0.021**	-0.324*	-0.010	-0.165
	(0.007)	(0.121)	(0.010)	(0.173)	(0.010)	(0.144)
Prosocial Activity Frequency Index	0.018**	-0.148	0.046***	-0.189	-0.003	-0.118
	(0.008)	(0.120)	(0.011)	(0.182)	(0.010)	(0.142)
Prosocial Activity Number Index	0.085***	-0.268	0.141***	-0.306	0.037*	-0.239
	(0.017)	(0.279)	(0.027)	(0.448)	(0.020)	(0.385)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. Prosocial Activity Number Index, Prosocial Activity Frequency Index, and Prosocial Activity Time Index are dependent variables. *Prosocial Activity Number Index* is the z-score constructed by averaging z-scores of thirty-two dummy variables for each voluntary and helping activities attended by the respondent in the last four weeks. *Prosocial Activity Frequency Index* is the z-score constructed by averaging z-scores of frequencies of thirty-two voluntary and helping activities attended by the respondent in the last four weeks. *Prosocial Activity Time Index* is the z-score constructed by averaging z-scores of time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, i.e., at least eight years of schooling, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.7. The Effects of Placebo Reform on Prosocial Behavior

	(1)	(2)	(3)
VARIABLES	**Whole Sample**	**Males**	**Females**
PANEL A: First Stage			
Middle School Completion	0.027	0.035	0.027
	(0.040)	(0.050)	(0.054)
F-statistics	0.0001	1.997	1.496
PANEL B: Reduced Form Regressions			
Time Spent in Prosocial Activity	54.677	94.362	28.982
	(56.180)	(82.245)	(65.955)
Frequency of Prosocial Activity	-0.398	-0.174	-0.411
	(0.446)	(0.666)	(0.708)
Number of Prosocial Activity	-0.137	-0.092	-0.138
	(0.108)	(0.152)	(0.123)
Prosocial Activity Participation	-0.043	-0.026	-0.044
	(0.036)	(0.050)	(0.045)
Observations	2,760	1,331	1,429

Notes: The sample consists of individuals born between 1980 and 1985, where the corresponding age is range from 29 to 35. Panel A of Table B.7. displays the results derived from the first stage regressions, where *MiddleSchool* is a dependent variable. Panel B of Table B.7. presents the results from reduced form regressions, where the prosocial activity participation, number of prosocial activities, frequency of prosocial activity, and time spent in prosocial activity are dependent variables. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, i.e., at least eight years of schooling, and 0, otherwise. *The Placebo Reform* is a dummy variable that takes value 1 if individual was born in 1983 and after, and 0 otherwise. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activity among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondents in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. The control variables include the survey year fixed effects, region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.8. The Effects of Education on Prosocial Behavior: 6-year estimation window

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-12.516	-700.579*	17.703	-830.349**	-39.112	-600.220
	(20.077)	(366.702)	(28.438)	(421.321)	(32.794)	(504.539)
Frequency of Prosocial Activity	-0.012	-4.603	0.641***	-5.109	-0.538	-4.847
	(0.266)	(4.315)	(0.239)	(4.031)	(0.404)	(6.522)
Number of Prosocial Activities	0.096**	-0.399	0.198***	-0.388	0.003	-0.522
	(0.040)	(0.681)	(0.048)	(0.856)	(0.055)	(0.998)
Prosocial Activity Participation	0.042***	0.032	0.062***	-0.144	0.022	0.150
	(0.014)	(0.230)	(0.019)	(0.332)	(0.020)	(0.331)
Observations	5,116	5,116	2,442	2,442	2,674	2,674

Notes: The sample consists of individuals born between *1980 and 1992*, where the corresponding age is range from *22 to 35*. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activity among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.9. The Effects of Education on Prosocial Behavior: 5-year estimation window

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		Males		Females	
	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-10.089	-627.130**	25.443	-663.564*	-43.025	-635.932
	(22.887)	(315.468)	(32.164)	(373.324)	(37.362)	(471.742)
Frequency of Prosocial Activity	-0.017	-2.676	0.640**	-3.389	-0.556	-2.672
	(0.298)	(3.916)	(0.280)	(4.116)	(0.450)	(5.811)
Number of Prosocial Activities	0.108**	-0.560	0.184***	-0.329	0.030	-0.885
	(0.043)	(0.607)	(0.054)	(0.885)	(0.060)	(0.866)
Prosocial Activity Participation	0.047***	-0.015	0.057***	-0.079	0.032	-0.006
	(0.015)	(0.211)	(0.021)	(0.341)	(0.021)	(0.288)
Observations	4,271	4,271	2,058	2,058	2,213	2,213

Notes: The sample consists of individuals born between *1981 and 1991*, where the corresponding age is range from *23 to 34*. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.10. The Effects of Education on Prosocial Behavior: 4-year estimation window

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
DEPENDENT VARIABLES	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-8.275	-723.488*	38.897	-584.217	-51.022	-961.287
	(27.346)	(399.720)	(39.679)	(447.283)	(44.996)	(631.518)
Frequency of Prosocial Activity	-0.081	-6.483	0.674**	-3.663	-0.727	-10.562
	(0.352)	(4.720)	(0.333)	(4.791)	(0.553)	(7.162)
Number of Prosocial Activities	0.109**	-0.917	0.201***	-0.669	0.018	-1.414
	(0.048)	(0.727)	(0.064)	(1.000)	(0.066)	(1.088)
Prosocial Activity Participation	0.045**	-0.165	0.068***	-0.469	0.021	-0.007
	(0.017)	(0.258)	(0.025)	(0.400)	(0.023)	(0.359)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between *1982 and 1990*, where the corresponding age is range from *24 to 33. The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.11.a. The Effects of Education on Prosocial Behavior: Marginal Effects

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
	TOBIT	IV-TOBIT	TOBIT	IV-TOBIT	TOBIT	IV-TOBIT
Time Spent in Prosocial Activity	30.786**	-340.409	47.841***	-695.866*	9.865	-35.988
	(14.360)	(255.065)	(17.607)	(397.377)	(22.438)	(332.681)
Frequency of Prosocial Activity	0.442	-0.423	0.727***	-18.890	0.970	0.377
	(0.186)	(2.882)	(0.195)	(13.371)	(0.286)	(4.433)
Number of Prosocial Activities	0.135	-0.411	0.204	-0.937	0.097	0.055
	(0.037)	(0.561)	(0.048)	(0.877)	(0.286)	(0.821)
Prosocial Activity Participation	0.053***	-0.107	0.076***	-0.417	0.034	0.177
	(0.148)	(0.218)	(0.021)	(0.379)	(0.021)	(0.326)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.11.b. The Effects of Education on Prosocial Behavior

VARIABLES	(1) Whole Sample TOBIT	(2) Whole Sample IV-TOBIT	(3) Males TOBIT	(4) Males IV-TOBIT	(5) Females TOBIT	(6) Females IV-TOBIT
Time Spent in Prosocial Activity	125.978**	-1,268.618	250.965***	-2,525.274*	33.688	-122.797
	(58.749)	(895.561)	(91.589)	(1,339.233)	(76.653)	(1,134.092)
Frequency of Prosocial Activity	1.702**	-8.977	3.546***	-18.890	0.312	1.215
	(0.714)	(10.386)	(0.937)	(13.271)	(0.920)	(14.243)
Number of Prosocial Activities	0.472***	-1.405	0.933***	-3.644	0.193	0.158
	(0.130)	(1.887)	(0.218)	(3.140)	(0.149)	(2.365)
Prosocial Activity Participation	0.175***	-0.346	0.328***	-1.556	0.090	0.468
	(0.049)	(0.705)	(0.089)	(1.309)	(0.055)	(0.855)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.12. The Effects of Education on Prosocial Behavior: Reduced Form Regressions

VARIABLES	(1) Whole Sample	(2) Males	(3) Females
Time Spent in Prosocial Activity	-72.269**	-99.705**	-46.630
	(34.060)	(41.033)	(48.541)
Frequency of Prosocial Activity	-0.414	-0.571	-0.325
	(0.428)	(0.420)	(0.639)
Number of Prosocial Activities	-0.063	-0.076	-0.054
	(0.071)	(0.095)	(0.101)
Prosocial Activity Participation	-0.012	-0.040	0.014
	(0.025)	(0.036)	(0.035)
Observations	5,998	2,870	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.13. The Effects of Education on Prosocial Behavior

DEPENDENT VARIABLES	(1) Whole Sample OLS	(2) IV	(3) Males OLS	(4) IV	(5) Females OLS	(6) IV
Time Spent in Prosocial Activity	-5.907	-591.001**	24.564	-779.132*	-30.386	-403.567
	(13.917)	(293.179)	(16.950)	(402.882)	(20.849)	(380.374)
Frequency of Prosocial Activity	0.107	-3.388	0.761***	-4.461	-0.402	-2.814
	(0.164)	(3.124)	(0.145)	(4.202)	(0.256)	(4.704)
Number of Prosocial Activities	0.126***	-0.519	0.232***	-0.598	0.035	-0.463
	(0.033)	(0.512)	(0.035)	(0.715)	(0.047)	(0.880)
Prosocial Activity Participation	0.048***	-0.097	0.069***	-0.311	0.028	0.124
	(0.012)	(0.195)	(0.016)	(0.255)	(0.017)	(0.251)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activity among thirty-two activities in the last four weeks, and 0 otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at *birth year by survey year*. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.14. The Effects of Education on Prosocial Behavior

DEPENDENT VARIABLES	(1) Whole Sample	(2)	(3) Males	(4)	(5) Females	(6)
	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-6.132	-851.923**	30.758	-1,089.958**	-34.691	-675.656
	(16.891)	(355.520)	(23.740)	(455.623)	(27.866)	(522.151)
Frequency of Prosocial Activity	0.101	-6.419	0.795***	-7.527*	-0.414	-6.254
	(0.226)	(3.966)	(0.208)	(4.395)	(0.345)	(6.468)
Number of Prosocial Activities	0.121***	-1.043	0.236***	-1.488	0.026	-0.768
	(0.037)	(0.660)	(0.045)	(0.959)	(0.049)	(1.047)
Prosocial Activity Participation	0.041***	-0.225	0.067***	-0.471	0.019	-0.044
	(0.013)	(0.214)	(0.018)	(0.337)	(0.018)	(0.352)
Observations	6,406	6,406	3,076	3,076	3,330	3,330

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between *1987 and 1993*, and takes the value 0 if the individual was born between *1979 and 1986*. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.15. The Effects of Education on Prosocial Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
DEPENDENT VARIABLES	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-5.679	-586.403*	30.711	-784.428**	-33.994	-388.020
	(16.895)	(306.621)	(23.727)	(342.789)	(27.875)	(448.933)
Frequency of Prosocial Activity	0.105	-3.253	0.794***	-4.389	-0.407	-2.541
	(0.226)	(3.550)	(0.208)	(3.425)	(0.345)	(5.663)
Number of Prosocial Activities	0.121***	-0.503	0.236***	-0.581	0.028	-0.467
	(0.037)	(0.592)	(0.045)	(0.738)	(0.049)	(0.905)
Prosocial Activity Participation	0.041***	-0.092	0.067***	-0.312	0.020	0.132
	(0.013)	(0.200)	(0.018)	(0.288)	(0.018)	(0.302)
Observations	6,406	6,406	3,076	3,076	3,330	3,330

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. *Reform takes the value 0.5 if the respondent was born in 1986.* The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.16. The Effects of Education on Prosocial Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
DEPENDENT VARIABLES	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-5.679	-622.381**	30.711	-835.836**	-33.994	-422.783
	(16.895)	(304.540)	(23.727)	(335.536)	(27.875)	(455.004)
Frequency of Prosocial Activity	0.105	-3.829	0.794***	-5.055	-0.407	-3.185
	(0.226)	(3.627)	(0.208)	(3.443)	(0.345)	(5.823)
Number of Prosocial Activities	0.121***	-0.576	0.236***	-0.811	0.028	-0.408
	(0.037)	(0.597)	(0.045)	(0.729)	(0.049)	(0.938)
Prosocial Activity Participation	0.041***	-0.100	0.067***	-0.346	0.020	0.140
	(0.013)	(0.203)	(0.018)	(0.284)	(0.018)	(0.318)
Observations	6,406	6,406	3,076	3,076	3,330	3,330

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activi*ty is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. *Reform takes the value 0.33 if the respondent was born in 1986*. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.17. The Effects of Education on Prosocial Behavior

VARIABLES	(1) Whole Sample OLS	(2) Whole Sample IV	(3) Males OLS	(4) Males IV	(5) Females OLS	(6) Females IV
Time Spent in Prosocial Activity	3.424	-592.673*	33.092	-784.104**	-21.346	-396.679
	(18.384)	(305.224)	(24.892)	(352.320)	(29.317)	(414.684)
Frequency of Prosocial Activity	0.255	-3.352	0.828***	-4.451	-0.160	-3.056
	(0.235)	(3.567)	(0.222)	(3.538)	(0.358)	(5.225)
Number of Prosocial Activities	0.165***	-0.507	0.260***	-0.536	0.083	-0.511
	(0.039)	(0.593)	(0.048)	(0.772)	(0.052)	(0.840)
Prosocial Activity Participation	0.064***	-0.091	0.083***	-0.280	0.045**	0.092
	(0.014)	(0.201)	(0.018)	(0.297)	(0.019)	(0.276)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of prosocial activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, sex, *marital status*, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Marital Status* is a dummy variable that equals 1 if the respondent is single, and 0 otherwise. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey

TABLE B.18. The Effects of Education on Prosocial Behavior

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample		**Males**		**Females**	
	OLS	IV	OLS	IV	OLS	IV
Time Spent in Prosocial Activity	-0.014	-589.945**	24.008	-767.836**	-16.542	-403.591
	(18.136)	(300.536)	(25.077)	(334.101)	(29.949)	(452.840)
Frequency of Prosocial Activity	0.201	-3.393	0.757***	-4.388	-0.193	-2.731
	(0.241)	(3.534)	(0.219)	(3.365)	(0.376)	(5.718)
Number of Prosocial Activities	0.136***	-0.519	0.229***	-0.574	0.062	-0.457
	(0.039)	(0.588)	(0.046)	(0.733)	(0.054)	(0.918)
Prosocial Activity Participation	0.054***	-0.097	0.069***	-0.308	0.040**	0.134
	(0.014)	(0.201)	(0.018)	(0.284)	(0.019)	(0.309)
Observations	5,998	5,998	2,870	2,870	3,128	3,128

Notes: The sample consists of individuals born between 1979 and 1993, where the corresponding age is range from 21 to 36. *The prosocial activity participation* is a dummy variable that takes the value 1 if the respondent attends at least one voluntary or helping activities among thirty-two activities in the last four weeks, and 0, otherwise. *The number of prosocial activities* is a dependent variable that represents the total number of voluntary and helping activities attended by the respondent in the last four weeks. *The frequency of prosocial activity* is a dependent variable that represents the total frequency of each voluntary and helping activities attended by the respondent in the last four weeks. *Time spent in prosocial activity (in minutes)* is a dependent variable that indicates the total time spent in each voluntary and helping activities attended by the respondent in the last four weeks. *MiddleSchool* is a dummy variable that takes the value 1 if the individual completes at least middle school, and 0, otherwise. *Reform* is a dummy variable that takes the value 1 if the individual was born between 1987 and 1993, and takes the value 0 if the individual was born between 1979 and 1985. The 1986 cohort is excluded. The control variables include the survey year fixed effects, the region of residence fixed effects, *employment*, sex, re-centered birth year$_{tre}$, and re-centered birth year$_{cont}$. *Sex* is a dummy variable that takes the value 1 if the gender of the respondent is male, and 0 otherwise. *Employment* is a dummy variable that takes the value 1 if the respondent works for one hour with/without receiving payment during the last week, and 0 otherwise. Standard errors are clustered at region by birth cohort level. ***, **, * indicate significance at %1, %5, and %10, respectively.
Source: 2014-2015 Turkish Time Use Survey