

Girls' Education in Turkey: A Provincial Analysis of Private Funding Campaigns

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Abstract

With large disparities in enrollment and completion rates, girls' education is a topic of concern in Turkey. Private funding campaigns have played an important role in combating gender inequality in education. This paper examines the impact of two major private funding campaigns on girls' schooling rates using Turkish provincial level data for 2013 and 2014. Controlling for regional and socio-demographic characteristics our findings show that "Dad, Send Me to School" and "Snowdrops" campaigns have positively influenced girls' schooling rates in primary and lower secondary education across Turkish provinces. The effect is less conclusive for upper secondary education.

JEL Codes: H52, I22, I24, I25

1. Introduction

Girls' education is a vital topic with numerous far-reaching effects. Educating girls improves their health status, lowers birth rates, reduces mother and baby mortality, and promotes economic growth and development (Behrman and Deolalikar 1988; Behrman and Wolfe 1984; Stromquist 1990; Soylu 2011; Dollar and Gatti 1999). The advantages of girls' education range from better health outcomes to higher rates of female participation in the labour force, decreases in female violence rates to family planning and better fertility outcomes. One of the most important objectives of the Millennium Development Goals, and more recently the Sustainable Development Goals has been to increase the enrollment rates primarily for girls who have been

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denied access to education in developing countries. Unfortunately, despite the numerous projects launched to raise enrollment rates, there are still 34.3 million girls of primary school age, 30 million girls of lower secondary school age and 67.4 million girls of upper secondary school age who are out of school (UNESCO Institute for Statistics 2018).

Many developing and middle-income countries experience problems related to access to education, which result in a greater gender enrollment gap. With gender inequalities in education, the prevalence of illiteracy, lower schooling and completion rates and higher school dropouts are more commonly observed among girls. In this paper, we examine the gender inequalities in education by focusing on girls' schooling rates across provinces in Turkey. In reducing gender inequalities in education, private financing has been considered a viable alternative to help increase schooling rates. We address the financing of education by studying the effect of two major private funding campaigns, "Dad, Send Me to School" and "Snowdrops," on girls' education in Turkey. To understand the impact of these campaigns on girls' education, we ask the following question: How have these campaigns – through the provision of scholarships – influenced girls' schooling rates at primary, lower secondary and upper secondary institutions in Turkey? Using provincial data from 2013 and 2014 and controlling for socio-demographic factors influencing schooling rates, our paper studies the effect of these major private funding campaigns on girls' education in Turkey.

This paper combines three strands of literature. First, we discuss the inequalities in education focusing on girls' enrollment rates. Literature on gender inequality and gender gaps in education consists of numerous studies that demonstrate a negative relationship between gender inequality and economic growth (Klasen 2000, 2002; Dollar and Gatti 1999; Moheyuddin 2005; King and Hill 1993, Hill and King 1995; Klasen and Lamanna 2009). Gender inequality in education across studies is shown to influence economic growth through its impact on the average quality and quantity of human capital, its generation of inequality in employment and through its role in increasing fertility and child mortality (Klasen 2000, 2002, 2006; Klasen and Lamanna 2009; Galor and Weil 1996; Lagerlof 2003; King, Klasen, and Porter 2008).

Second, we focus on the factors influencing girls' education. The literature has shown that factors such as lack of funds and lack of roads, political instability and violence, culture, religion, poverty, high unemployment rates, unequal labour market returns, parental education and occupation, poor learning environments, and diseases affect girls' education in many developing countries (Ombati and Ombati 2012; Stimpfle and Stadelmann 2016; Cooray and Potrafke 2011; Glick 2008; Kirdar, Dayioglu, and Koc 2015; Sasmaz *et al.* 2015; Dayioglu, Kirdar, and Tansel 2009). In Turkey, regional factors add to the gender inequality observed in the education system. While girls living in southeastern regions are among the most disadvantaged groups in accessing education, girls in urban areas with less patriarchal families have a higher probability of attending post-primary schooling (Aydagul 2006; Rankin and Aytac

2006). Similarly, traditional views on gender roles, early marriages, as well as gender preference lead to higher dropouts for girls (O'Dwyer, Aksit, and Sands 2010; Soyulu 2011; Erturk and Dayioglu 2004; Caner *et al.* 2016; Alat and Alat 2011).¹ Household and sibling composition also play an important role on girls' education with more boys in the household having a significantly negative effect on girls' lower secondary attainment (Goksel 2008; Glick 2008; Kirdar, Dayioglu, and Koc 2015; Sasmaz *et al.* 2015; Dayioglu, Kirdar, and Tansel 2009).² Furthermore, birth order matters for enrollment, negatively influencing the older children in the family (Rankin and Aytac 2006; Smits and Gunduz – Hosgor 2006).³

Lastly, we look at the influence of funding programs on girls' education. Many developing countries support education through demand side financing mechanisms that range from stipends, scholarships, targeted vouchers or conditional cash transfers (CCTs) to help with costs of schooling such as admissions, exam fees, transportation costs, and uniforms and books (Patrinos 2007; Hill and King 1995). Some examples of developing country demand-side financing include Bangladesh's Food for Education incentive and the Female Stipend Program, Punjab Female School Stipend Program in Pakistan, Japan Fund for Poverty Reduction Scholarship Program in Cambodia and Child Sponsorship Program in Kenya and the Oportunidades cash transfer program in Mexico (Patrinos 2007; Sperling, Winthrop, and Kwauk 2016). These programs have increased girls' school enrollment rates ranging from 2 to 30 percent (Patrinos 2007; Sperling, Winthrop, and Kwauk 2016; Filmer and Shady 2008, 2011; Schultz 2004; Behrman, Sengupta, and Todd 2005; Attanasio, Fitzsimmons, and Gomez 2005; Maluccio and Flores 2005; Glewwe and Olinto 2004; Cardoso and Portela Souza 2004; Chaudhury and Parajuli 2010; Khandker, Pitt, and Fuwa 2003). In their systematic review, Baird *et al.* (2013) show that conditional and unconditional cash transfers increase the probability of students enrolling and attending school in middle-income, lower income and low-income countries. In countries like Bangladesh, Pakistan, and Turkey CCTs have helped reduce gender inequalities in education by closing the gap between school enrollment rates between girls and boys (Fiszbein *et al.* 2009).

We add to the literature by quantitatively examining the importance of private funding campaigns. We do so in a country that depends largely on private expenditure in financing education. We analyze whether the collection of these funds has an impact on girls' enrollment rates across provinces in Turkey. Our contribution is in two ways; we not only discuss the importance of private funding on education in Turkey, but we

¹ Dulger (2004) argues that female dropouts occur at the beginning of grades 3, 4 and 5 when students are thought to have acquired basic reading and writing skills, which are deemed sufficient.

² Birth order and sibling sex composition influence enrollment probabilities more so in poorer households. This highlights the importance of distributing funds to regions where girls' schooling decisions are closely linked to parents' financial resources.

³ Rankin and Aytac (2006) show that the probability of secondary education for both genders becomes slim when there are older males in the household.

also quantify its effect on girls' education by examining the schooling rates across provinces. Controlling for provincial factors, as well as various socio-economic and demographic factors, our results show that both projects have played a significantly positive role for girls' enrollment in primary and lower secondary institutions. The results for secondary education are less conclusive. The inclusion of further socio-economic variables does not alter our benchmark findings. Examining the student per teacher effects, we find that overcrowding of the classrooms does not have an impact on girls' schooling rates. Controlling for poverty rates and female unemployment across regions, we find the former to have a negative and the latter to have a positive effect on girls' primary schooling rates.

The remainder of the paper is structured as follows. In the next section, we provide background on educational policies and reforms implemented, focusing on projects for girls' education in Turkey and discuss the two campaigns. Section 3 describes the data in detail. Section 4 presents the empirical model while section 5 offers a review of the results and robustness checks. Section 5 deliberates the findings and section 6 concludes.

2. Projects on Girls' Education in Turkey and the Two Campaigns

2.1 Review of Educational Policies and Projects in Turkey

Turkey has gone through multiple changes in the education system in hopes of improving access to and equality in education over the last two decades. These changes include construction of schools, recruitment of teachers, social mobilization campaigns, and modifications to education laws (Yazan 2014). The Basic Education Law adopted in 1997 increased compulsory education from five to eight years and aimed to improve the quality of educational instruction and monitoring.⁴ Following its implementation, 1.1 million students enrolled in grades 1 to 8 through a rapid coverage program, increasing primary education from 84.74% in 1997 to 96.49% in 2009 (Aydagul 2007; Kilic 2012). Nevertheless, despite the initial increase in enrollment following the changes implemented under the new compulsory education system, the educational gender gap did not shrink and enrollment numbers in poorer regions of the country did not meet expectations (Kirdar, Dayioglu, and Koc 2015; World Bank 2004). In March 2012, compulsory education increased again in a 4+4+4 format to 12 years. Under this new system, compulsory education currently consists of primary (Grades 1–4), lower secondary (Grades 5–8) and upper secondary levels (Grades 9–12). However, even with the increase in compulsory education for the second time,

⁴ Formal education is free of charge in Turkey under the public school system. Parents have the choice of sending their children to private schools, which are monitored by the Ministry of National Education.

studies have shown that by 2011 Turkey had failed to raise the schooling rate in secondary education to 100% (Sasmaz *et al.* 2015).

To assist in efforts to raise enrollment rates in basic education, the “Education for All” campaign in Turkey started with the introduction of the “Come on Girls, Let’s Go to School (Haydi Kizlar Okula)” project by the Ministry of National Education and UNICEF in 2003. The campaign primarily focused on increasing enrollment of girls aged 6 to 14, reaching out to all 81 provinces by 2006 (Cameli 2007; Yazan 2014). Although the campaign had a statistically significant impact on enrollment rates with some provinces experiencing increases in enrollment up to 19%, the magnitude of it was much smaller than expected (Ergun 2012; Yazan 2014).⁵

Another policy aimed to increase female student attendance was the conditional cash transfer (CCT) program in Turkey. The CCT program began shortly after the 2001 crisis providing cash transfers to the poorest 6% of the population (Duman 2012). Following the “Come on Girls, Let’s Go to School” campaign’s initial success in 2003, the government also offered CCTs to initiate families to send their children to school. The CCTs reached out to almost 856,000 poorest families in three years, helping educate approximately 1.56 million children (Aydagul 2008). By 2006, the enrollment rates had risen up to 10.7% with an increase of 5.4% in girls’ attendance rates (Ucan 2013).

To ease problems in access to education, a busing program was launched in eastern and southeastern parts of Turkey. The project aimed to bus students who lived further than 30 kilometers from schools. With the rise in the number of years of compulsory education, the number of students bused to school increased dramatically from 127,683 in the 1996–1997 academic year to 621,986 in the 1999–2000 academic year, with the largest surge observed in the rural areas across Turkey (Kirdar, Dayioglu, and Koc 2015).

Lastly, the efforts of the private sector in collaboration with the Ministry of National Education played an important role in increasing girls’ enrollment rates in Turkey. These projects aimed to provide girls access to education by tackling some of the biggest obstacles that had been restricting access to education across different regions in Turkey. The private funding mechanisms offered another solution to reducing the gender inequalities widely observed mainly in the poorest regions across the country. We outline the two biggest campaigns in detail below.

⁵ Following the launch of this campaign, the gender disparity had only statistically improved in 5 out of 33 provinces (Buyukozturk 2005; Aydagul 2007). Studies have also stated that the nationwide expansion of the project has in fact led to a reduction in its effectiveness generating an unfortunate decline in enrollment for girls in primary and secondary schools (Gumus and Gumus 2013; Aydagul 2007; Buyukozturk 2005).

2.2 “Dad, Send Me to School” and “Snowdrops” Campaigns

The “Dad, Send Me to School” campaign started in 2005 by the Association for Supporting Contemporary Life and Dogan Group. The goals of the project ranged from financing girls’ education to improving the social quality of life and enhancing social consciousness and structural problems across provinces in Turkey (Tek Girisim 2017). Under financial support, the project builds schools, classrooms and dormitories, and grants scholarships to girls predominantly in grades six, seven and eight (Tek Girisim 2017). It also offers social living spaces in dormitories, travel opportunities and collaborations with universities and the private sector to help girls transition into the labour market following their graduation. The campaign has been successful in raising public awareness to the issue of gender inequality in education and in allocating resources to support girls’ education (Tek Girisim 2017).

Overall, the “Dad, Send Me to School” campaign focused on girls who could not continue their education due to family pressures and financial problems. With the help of numerous private donations from various institutions and individuals, the campaign reached out to more than 10,500 girls deprived of educational opportunities in Turkey. Since its launch, more than 40 million Turkish liras have been collected with 300,000 donors funding girls’ education. These amounts have been used in the construction of 33 girls’ dormitories and 12 schools, and have funded numerous scholarships across different provinces (BBOG 2016).

Currently, the funding necessary to support a girl’s education through this campaign for one academic year is 900 TL (BBOG 2016). To qualify for funding, girls are required to attend school, lack adequate financial sources, and excel in their academic studies with the aim to attend post-secondary institutions. The Association for Supporting Contemporary Life collects private donations through their website and through multiple bank accounts for this campaign. Donors are asked to continue their financial support for four consecutive years to guarantee scholarships through girls’ primary, lower or upper secondary education.⁶

The “Snowdrops” campaign started in 2000 by the Association for Supporting Contemporary Life to help finance girls who, due to their parents’ economic situation, had not been able to attend school. As an extension of the Contemporary Girls of Contemporary Turkey (CGCT) project in 1997, “Snowdrops” began with the hope of bringing equal educational opportunities to boys and girls by providing financial support to help girls continue their education.⁷ The initial goal of reaching out to 5,000 girls was extended to 10,000 in 2007 with the inclusion of Turkcell, a mobile telecom

⁶ A survey conducted to study the impact of the “Dad, Send Me to School” project demonstrates that 93 % of the girls who have been funded through the campaign want to continue their education in comparison to 81 % of the girls in the same age group (BBOG 2015).

⁷ CGCT was established to help economically deprived families send their daughters to school (Kanci 2005; Aydagul 2007). In 1997, the CGCT project started out with a fund to help educate 17 girls in rural parts of Turkey. With its increasing success, the program then reached out to more than 237 girls by 1998 (Turkcell 2007).

operator as the main sponsoring partner.⁸ Through the campaign, the Association for Supporting Contemporary Life and Turkcell work jointly to achieve gender parity in education and contribute to eradicating female illiteracy in Turkey (Turkcell 2007; Turkcell 2016). Apart from being an extensive social responsibility project, the “Snowdrops” campaign has become one of the biggest projects in Turkey. The campaign has been endorsed by the publication of a book summarizing the stories, the changing lives and hopes of the girls who have benefited from the project.⁹

The “Snowdrops” campaign has offered more than 100,000 scholarships. Due to Turkcell’s ongoing contribution to the project, donations are accepted through bank transfers as well as text/SMS messages. Unlike the “Dad, Send Me to School” campaign, “Snowdrops” does not have a target funding range for its scholarships. Donors can contribute any cash amount to the project, which then translates to scholarships for girls in primary, secondary or tertiary education.

Despite their similar goals to help girls continue their education, the two projects have minor differences. First, the “Dad, Send Me to School” campaign supports girls who due to lack of financial resources, beliefs and pressures from their families have had to drop out of school. The project thereby aims to achieve gender equality in primary, secondary and tertiary education. The “Snowdrops” campaign on the other hand, focuses on the provision of equal opportunities in education for girls. Second, “Dad, Send Me to School” relies on private donations sent to bank accounts registered under the Association for Supporting Contemporary Life, whereas “Snowdrops” collects funds through bank accounts as well as through text messages.

The two campaigns have funded more than 40,000 students (CYDD 2016). Although these projects have been running for more than 10 consecutive years, there are no quantitative studies analyzing their impact on girls’ enrollment rates across provinces in Turkey. This paper quantifies the effects of these two large-scale campaigns and evaluates the end-results.¹⁰

3. Data

The provincial data used in this study consist of private funding data and school enrollment rates for 81 provinces in Turkey. Due to the difficulty in collecting private

⁸ Turkcell also supports the program through a mentorship campaign launched in 2004 where volunteer mentors are selected as counselors for the new students.

⁹ Following the launch of the book, a series of concerts took place and an album was released to further assist the campaign (Turkcell 2007). The proceeds from the book and the album helped fund 770 additional girls through 4 years of upper secondary education (Turkcell 2007).

¹⁰ Among the funds collected in support of education by the Association for Supporting Contemporary Life under various campaigns, the “Snowdrops” and “Dad, Send Me to School” projects rank first and second respectively.

funding data, we include in our analysis the two years, 2013 and 2014, for which data were available for both campaigns at the provincial level. Below we discuss the indicators in further detail.

3.1 Girls' Enrollment

To examine girls' enrollment, we employ net schooling rates at primary, lower and upper secondary education. The net schooling rate is the ratio of the number of students of a theoretical age group who are enrolled in a specific level of education to the total population in that age group.¹¹ The data come from the Ministry of National Education and the Turkish Statistical Institute and are at the provincial level. To check for the robustness of our results we also use the number of female students enrolled in primary, lower and upper secondary institutions. Starting with the 2012–2013 academic year, primary education consists of the first four years of the 12-year compulsory education. Lower secondary accounts for the second four years of compulsory education, and upper secondary is composed of the last four years of secondary education and is grouped into general secondary or vocational institutions.

3.2 The Two Private Campaigns for Funding Girls' Education

In measuring the effect of the “Dad, Send Me to School” and “Snowdrops” campaigns, we use the total funds distributed in Turkish liras across 81 provinces. We also examine the number of scholarships provided under each campaign. The data for these campaigns are from the Association for Supporting Contemporary Life.

3.3 Other Control Variables

To examine the relationship between girls' enrollment and the effectiveness of the two major private funding campaigns, we use a number of variables that take into account differences in culture, demographics, and resources across provinces. As a measure of household composition, we use the average size of households. This is computed by the ratio of the total population of households to the total number of households. Previous studies have shown that both sibship and the composition of siblings can influence girls' access to education significantly. Even though data at the provincial level do not offer information regarding the number of siblings or the composition of different households across provinces, the average household size still provides a description of the size of families.

¹¹ We also check for the robustness of our results using gross schooling rates, which measure the total number of students in a specific level of education to the population in the theoretical age group.

To control for household demographics we use the elderly dependency ratio. This helps us account for families living with elders. It is calculated as the ratio between the number of individuals aged “65 and over” per 100 persons at the “15 to 64” age group. We believe that this variable will help us understand whether homecare for the elders in the household is a factor, which discourages girls' enrollment, primarily at the secondary school level. To control for the gender breakdown across different provinces we use the sex ratio, the ratio of males per 100 females. Similarly, in accounting for differences in enrollment patterns across densely versus heavily populated areas, we use population density per square kilometer.

We use the average age of the bride at first marriage to observe whether marriage is a factor that alters girls' educational enrollment decisions. Early marriages result in school dropouts particularly at the secondary level for females. This measure will show whether an increase in marriage age has an influence on girls' schooling at different institutional levels. We also control for the number of doctors per 1,000 people in each province. We believe that this variable will pick up the effects of health care and will indicate whether increased spending on healthcare through a higher number of doctors has any spillover effects on girls' enrollment rates. The number of divorces per 1,000 people is employed as a measure to observe differences in educational enrollment for single versus dual parents.

Agricultural production per capita is used as a proxy for families working in farming and agriculture. Culturally, families engaged in agriculture are perceived to have a lower probability of sending their daughters to school. The daughters of agricultural families are more likely to help with household activities and, as a result, have lower school attendance and higher dropout rates (Rankin and Aytac 2006).¹² This variable is included in the regressions to examine the influence of parents' agricultural employment on girls' access to education. It is measured by the value of agricultural production in 1,000 Turkish liras divided by the total population.

We use road length as a variable to account for the relationship between commuting to school and girls' enrollment rates. This variable measures the length of provincial roads in kilometers. The Turkish Statistical Institute defines provincial roads as provincial highways, which connect rural areas and towns to other townships, to each other and to State roads (Turkish Statistical Institute Transportation Statistics 2019). We believe that the construction of provincial roads may help connect girls, who live in rural neighborhoods without access to schools, to towns that have schools. This variable is also employed as an indicator of regional development and modernization. The number of libraries is used as a measure to account for regional changes to the level of literacy. GDP per capita is included as the main income variable.

¹² The authors find that secondary school attainment of girls and boys in agricultural families is lower, representing a clear trend towards keeping children at home to help with production in farming households. However, agricultural households do not affect the enrollment into primary institutions.

Finally, we construct regional dummies. Turkey has seven geographical regions. To account for differences across regions in Turkey, we include these dummies in our regressions.

4. Empirical Specification

We present an analysis that is based on a model that studies the impact of two largest private funding campaigns on girls' enrollment rates in Turkey. The benchmark model controls for the average differences across 81 provinces. It allows for the examination of the effect of these two campaigns together with other socioeconomic factors on enrollment rates. Our baseline model includes funds from the two projects, control variables and regional dummy variables. The model to be estimated is given as:

$$FEENROL_{i,t} = \alpha_1 + \delta_1 Funding_{i,t} + \sum_{k=1}^{11} \beta_k Controls_{i,t,k} + \sum_{j=1}^7 \theta_j Region_{i,j} + v_{i,t} \quad (1)$$

where the dependent variable in the above equation is the net female schooling rate at primary, lower and upper secondary institutions; $Funding_{i,t}$ is the funding provided by the “Dad, Send Me to School” or “Snowdrops” campaigns; and the control variables are the average household size, population density, GDP per capita, divorces per capita, libraries, agricultural production per capita, road length, average age of bride at first marriage, elderly dependency ratio, sex ratio and doctors per capita. We additionally estimate the model using the number of scholarships. Similarly, we use the logarithm of the number of females enrolled at primary, lower and upper secondary institutions as dependent variables. We include regional dummies to account for differences across regions in Turkey. In the above equation, our focus is on the coefficient of the funding term. We would expect to find positive and significant coefficients for funding and scholarships provided under each campaign.

5. Empirical Results and Robustness Checks

5.1 The Effect of the Two Projects on Net Schooling Rates and Enrollment Levels

Examining the effects of the two projects on primary net schooling rates, our first set of results in Table 2 reveal positive findings for both campaigns.

Columns (1) – (4) show the positive effect of the funds and scholarships provided by the “Dad, Send Me to School” and “Snowdrops” campaigns on primary education. The natural logarithm of GDP per capita is found to have a negative impact on girls' net schooling rate at the primary level. This negative coefficient could be the result of

Table 1
Summary Statistics

VARIABLES	(1)	(2)	(3)	(4)	(5)
	N	Mean	Standard deviation	Min	Max
DSMS Scholarships	162	10.52	11.52	0	60
DSMS Funding	162	7,535	8,084	0	40,320
Snowdrops Scholarships	162	49.95	44.90	4	375
Snowdrops Funding	162	35,789	31,474	3,120	252,000
Students per teacher (Primary)	162	17.44	4.049	11	34
Students per teacher (Lower Secondary)	162	15.99	3.750	9	32
Students per teacher (Upper Secondary)	162	14.52	3.117	8	25
Libraries	162	13.82	8.712	2	42
Population density	162	122.1	304.7	11	2,767
Average household size	162	3.822	1.040	2.700	7.700
Elderly dependency ratio	162	13.72	4.579	4.490	27.24
GDP per capita	162	19,090	6,782	7,829	43,645
Road length	162	785.5	452.0	131	3,144
Sex ratio	162	101.5	4.198	96.89	126.1
Average age at first marriage (bride)	162	23.23	0.997	21.40	26.60
Net primary schooling rate (females)	162	97.46	2.731	80.46	100
Net upper secondary schooling rate (females)	162	78.44	12.79	36.47	98.81
Net lower secondary schooling rate (females)	162	93.95	3.598	76.98	98.41
Number of female students in primary institutions	162	33,195	56,245	1,597	464,973
Number of female students in lower secondary institutions	162	32,863	55,990	1,664	470,899
Number of female students in total upper secondary institutions	162	32,487	59,088	1,964	500,456
Number of female students in general upper secondary institutions	162	17,460	30,596	1,229	263,109
Number of female students in vocational institutions	162	15,026	28,712	512	257,971
Value of agricultural production per capita (in 1,000 TLs)	162	3.545	1.823	0.0528	10.38
Doctors per capita	162	1.484	0.454	0.724	3.197
Divorces per capita	162	1.350	0.619	0.112	2.795
Female unemployment rate	162	9.554	4.728	1.200	24.80
Employment in agriculture (in %)	162	32.95	12.77	0.500	59.50
Employment in service (in %)	162	44.01	8.144	26.40	71.70
Gini coefficient	162	0.351	0.0310	0.304	0.413
Poverty rate	162	16.80	2.691	13	23.50
Consumption expenditure on education (in %)	162	1.672	0.478	0.600	3.300

Table 2 (Continued)

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
Agricultural production per capita	-0.253 (-0.445)	0.0943 (0.135)	0.0432 (0.0745)	-0.192 (-0.341)	0.713 (0.816)	0.890 (0.845)	0.702 (0.799)	0.685 (0.786)	0.171 (0.112)	-0.297 (-0.177)	-0.578 (-0.342)	-0.0871 (-0.0553)
Road length	[0.569] [0.000116]	[0.699] [0.000281]	[0.580] [9.49e-05]	[0.564] [-0.000146]	[0.873] [0.000503]	[1.054] [0.00109]	[0.878] [0.000478]	[0.872] [0.000370]	[1.534] [-0.00375*]	[1.679] [-0.00269]	[1.690] [-0.00387**]	[1.574] [-0.00332*]
Average age at first marriage (bride)	[0.242] [0.0490]	[0.242] [0.000621]	[0.192] [0.000495]	[0.305] [0.000477]	[0.783] [0.000643]	[1.404] [0.000777]	[0.745] [0.000642]	[0.558] [0.486]	[1.975] [0.00190]	[1.242] [0.00216]	[2.096] [0.00185]	[1.914] [0.00173]
Elderly dependency ratio	-0.0643 (-0.760)	0.0299 (0.381)	0.0709 (0.295)	0.00208 (0.00852)	0.318 (1.660)	0.454 (1.216)	0.515 (1.649)	0.486 (1.578)	2.932*** (3.738)	2.809*** (3.410)	2.959*** (3.535)	3.116*** (3.811)
Sex ratio	[0.242] [0.0490]	[0.242] [0.000621]	[0.192] [0.000495]	[0.305] [0.000477]	[0.783] [0.000643]	[1.404] [0.000777]	[0.745] [0.000642]	[0.558] [0.486]	[1.975] [0.00190]	[1.242] [0.00216]	[2.096] [0.00185]	[1.914] [0.00173]
Doctors per capita	0.918* (1.746)	1.460* (1.927)	1.071** (2.014)	1.033* (1.909)	0.259 (0.397)	0.780 (0.905)	0.286 (0.429)	0.342 (0.501)	1.765 (1.261)	2.042 (1.335)	1.595 (1.133)	1.638 (1.196)
Black Sea	[0.242] [0.0490]	[0.242] [0.000621]	[0.192] [0.000495]	[0.305] [0.000477]	[0.783] [0.000643]	[1.404] [0.000777]	[0.745] [0.000642]	[0.558] [0.486]	[1.975] [0.00190]	[1.242] [0.00216]	[2.096] [0.00185]	[1.914] [0.00173]
Aegean	-1.329* (-1.000)	-0.302 (-1.334)	-2.134*** (-1.479)	-2.367*** (-1.709)	-0.179 (0.899)	0.669 (0.481)	-0.104 (1.001)	0.264 (0.883)	-0.654 (0.524)	-0.895 (0.314)	1.674 (1.145)	2.247 (1.527)
Mediterranean	[0.751] [0.059]	[0.885] [0.0698]	[3.058] [0.085]	[3.082] [0.085]	[0.165] [1.085]	[0.604] [1.088]	[0.0995] [0.048]	[0.248] [1.064]	[0.263] [0.262]	[0.379] [2.322]	[0.721] [2.322]	[0.957] [2.322]
Central Anatolia	-2.118* (-1.853)	-0.640 (-0.461)	-2.850*** (-2.650)	-3.110*** (-2.845)	-0.424 (-0.279)	1.626 (0.912)	-0.343 (-0.221)	0.487 (-0.318)	-0.00666 (-0.00211)	2.200 (0.178)	2.817 (0.716)	2.817 (0.943)
	[1.143]	[1.388]	[1.076]	[1.095]	[1.521]	[1.782]	[1.553]	[1.351]	[3.154]	[3.092]	[3.072]	[2.987]

Table 2 (Continued)

<i>Dependent Variables</i>												
VARIABLES	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
Eastern Anatolia	-0.450 (-0.365) [1.231]	-0.732 (-0.468) [1.564]	-0.991 (-0.807) [1.228]	-1.170 (-0.982) [1.191]	1.990 (1.124) [1.771]	2.750 (1.232) [2.231]	2.012 (1.125) [1.788]	1.863 (1.086) [1.715]	-3.965 (-1.219) [3.253]	-3.196 (-0.900) [3.551]	-2.588 (-0.757) [3.418]	-2.134 (-0.656) [3.255]
Southeastern Anatolia	-0.744 (-1.154) [0.645]	-1.093 (-1.305) [0.838]	-1.299* (-1.743) [0.745]	-1.445* (-1.960) [0.737]	2.913*** (2.758) [1.056]	2.925** (2.573) [1.137]	2.966*** (2.858) [1.038]	2.863*** (2.801) [1.022]	0.626 (0.200) [3.137]	0.694 (0.213) [3.251]	2.246 (0.686) [3.271]	2.605 (0.832) [3.131]
Observations	162	128	162	162	162	128	162	162	162	128	162	162
R-squared	0.287	0.377	0.298	0.299	0.571	0.632	0.571	0.573	0.878	0.886	0.871	0.872

Note: t-statistics are in parentheses (*** p<0.01, ** p<0.05, * p<0.1) and clustered robust standard errors at the provincial level are in brackets. Columns (1)–(4) use *net female primary schooling rates*, columns (5)–(8) use *net female lower secondary schooling rates*, and columns (9)–(12) use *net female upper secondary schooling rates* as the dependent variable. *DSMS* is the abbreviation for the “Dad, Send Me to School” campaign. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013–2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

income inequalities across regions, particularly in provinces experiencing large population growth. Doctors per capita is positively significant suggesting that the development of healthcare through increases in the number of doctors available raises girls' schooling rate at the primary level. Columns (5) to (12) display the effects of the two campaigns on net secondary schooling rate. We find that both campaigns do not have a significant impact on girls' lower secondary schooling. Furthermore, the campaigns have a negatively significant effect on girls' upper secondary schooling. This calls for a detailed analysis of enrollment patterns across upper secondary institutions. The average household size is negatively significant at the upper secondary level. This shows that larger families have an adverse impact on girls' secondary school enrollment. This finding is in agreement with the literature, which argues that larger families are more likely to display "son preference" and keep girls out of school to help with home production and house chores. Provinces with higher income per capita display greater levels of enrollment at upper secondary education.¹³ Road length is found to be negatively significant in three out of four columns for girls' upper secondary schooling rate. This shows that parents might be more concerned about sending their daughters to upper secondary institutions despite the compulsory education laws and further regional development as observed by the construction of new provincial roads. This result is in agreement with findings in the literature suggesting that higher levels of compulsory education increase the opportunity cost of sending girls to school when they have greater contribution to home production (Altinok and Aydemir 2015; Levison and Moe 1998; Assaad, Levison, and Ziban 2010).

We also check our results using the number of female students enrolled in primary and secondary institutions as dependent variables.

Taking logarithms of the number of female students enrolled, we find that both scholarships and funds under the two campaigns increase female enrollment at the primary and lower secondary level. In fact, as shown in Table 3, a 10% rise in "Snowdrops" funding brings about a 1.2% increase in the number of girls enrolled in primary and lower secondary education. Population density, average size of the household, divorces per capita and road length are all factors positively influencing the levels of female enrollment in primary and lower secondary education. However, the negative coefficients for the elderly dependency ratio and the sex ratio suggest that gender still plays an important role in girls' enrollment at primary and lower secondary, and that elders living within the household negatively influence girls' education.

Table 4 reports the results for upper secondary enrollment levels. "Snowdrops" funding is the only significant variable, demonstrating that a 10% increase in the funding provided under this campaign can bring a 0.8% increase in girls' upper secondary enrollment.

¹³ Public education is free of charge even at the upper secondary level. However, higher levels of education lead to greater out of pocket expenses, which explains the significantly positive effect of GDP per capita on girls' upper secondary schooling.

Table 3
Campaign Effectiveness on Female Primary and Lower Secondary Enrollment Levels

<i>Dependent Variables</i>		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES		Primary enrollment	Primary enrollment	Primary enrollment	Primary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment
DSMS		0.00551** (2.201) [0.00250]				0.00513** (2.024) [0.00253]			
<i>Scholarships</i>									
DSMS			0.0335 (0.779) [0.0429]				0.0351 (0.814) [0.0431]		
<i>Funding</i>									
Snowdrops				0.00162** (2.100) [0.000773]				0.00157** (2.093) [0.000751]	
<i>Scholarships</i>									
Snowdrops					0.128*** (3.269) [0.0393]				0.121*** (3.112) [0.0390]
<i>Funding</i>									
Population density		0.620*** (5.602) [0.111]	0.555*** (4.518) [0.123]	0.606*** (5.202) [0.116]	0.577*** (4.954) [0.116]	0.624*** (5.596) [0.111]	0.574*** (4.597) [0.125]	0.609*** (5.238) [0.116]	0.582*** (5.004) [0.116]
Average household size		0.254** (2.180) [0.117]	0.270** (2.219) [0.122]	0.259** (2.266) [0.114]	0.232** (2.160) [0.107]	0.263** (2.201) [0.120]	0.289** (2.331) [0.124]	0.267** (2.285) [0.117]	0.242** (2.197) [0.110]

Table 3 (Continued)

VARIABLES		<i>Dependent Variables</i>							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Primary enrollment	Primary enrollment	Primary enrollment	Primary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment
GDP per capita	-0.0167 [-0.112]	-0.0260 [-0.152]	-0.0369 [-0.252]	-0.0345 [-0.248]	-0.0243 [-0.167]	-0.0172 [-0.103]	-0.0439 [-0.305]	-0.0411 [-0.301]	
Divorces per capita	0.165* [0.148]	0.233** [0.171]	0.182* [0.146]	0.161 [0.139]	0.185* [0.146]	0.248** [0.168]	0.201** [0.144]	0.181* [0.137]	
Libraries	(1.684) [0.0978]	(2.065) [0.113]	(1.806) [0.101]	(1.630) [0.0987]	(1.866) [0.0994]	(2.211) [0.112]	(1.994) [0.101]	(1.822) [0.0995]	
Agricultural production per capita	0.0142 [1.502]	0.0293** [2.461]	0.0140 [1.487]	0.0153 [1.580]	0.0147 [1.495]	0.0298** [2.530]	0.0145 [1.480]	0.0157 [1.565]	
Road length	0.00956*** [4.364]	0.00750*** [3.099]	0.00955*** [4.327]	0.00910*** [4.145]	0.00943*** [4.271]	0.00735*** [3.035]	0.000942*** [4.235]	0.000899*** [4.060]	
Average age at first marriage (bride)	0.000219 [-0.0510]	0.000242 [-0.0328]	0.000221 [-0.0530]	0.000219 [-0.0656]	0.000221 [-0.0349]	0.000242 [-0.0159]	0.000222 [-0.0369]	0.000221 [-0.0487]	
	(-0.852) [0.0598]	(-0.453) [0.0723]	(-0.876) [0.0605]	(-1.139) [0.0576]	(-0.599) [0.0582]	(-0.225) [0.0706]	(-0.626) [0.0590]	(-0.863) [0.0564]	

Table 3 (Continued)

<i>Dependent Variables</i>								
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Primary enrollment	Primary enrollment	Primary enrollment	Primary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment
Elderly dependency ratio	-0.0444*** [0.0160]	-0.0558*** (-2.933) [0.0190]	-0.0475*** (-2.712) [0.0175]	-0.0508*** (-2.954) [0.0172]	-0.0375*** (-2.268) [0.0165]	-0.0467*** (-2.399) [0.0195]	-0.0406*** (-2.272) [0.0178]	-0.0435*** (-2.488) [0.0175]
Sex ratio	-0.0249*** (-2.607) [0.00954]	-0.0294*** (-2.484) [0.0118]	-0.0252*** (-2.595) [0.00973]	-0.0260*** (-2.657) [0.00980]	-0.0270*** (-2.866) [0.00940]	-0.0320*** (-2.784) [0.0115]	-0.0274*** (-2.845) [0.00962]	-0.0281*** (-2.886) [0.00973]
Doctors per capita	-0.0153 (-0.174) [0.0880]	-0.0852 (-0.919) [0.0926]	0.000107 (0.00121) [0.0881]	0.00671 (0.0811) [0.0828]	-0.0194 (-0.221) [0.0878]	-0.0871 (-0.961) [0.0907]	-0.00403 (-0.0456) [0.0885]	0.00157 (0.0188) [0.0836]
Black Sea	-0.0307 (-0.162) [0.190]	-0.0301 (-0.142) [0.213]	-0.0765 (-0.418) [0.183]	-0.127 (-0.704) [0.180]	-0.00672 (-0.0361) [0.186]	-0.00580 (-0.0278) [0.208]	-0.0495 (-0.276) [0.179]	-0.0972 (-0.550) [0.177]
Aegean	0.176 (1.318) [0.133]	0.0498 (0.313) [0.159]	0.0800 (0.622) [0.129]	0.0256 (0.191) [0.134]	0.139 (1.062) [0.153]	0.0209 (0.136) [0.153]	0.0489 (0.393) [0.124]	-0.00170 (-0.0131) [0.130]
Mediterranean	0.208 (1.527) [0.137]	0.101 (0.721) [0.140]	0.140 (1.033) [0.136]	0.0900 (0.675) [0.133]	0.153 (1.120) [0.137]	0.0531 (0.391) [0.136]	0.0888 (0.657) [0.135]	0.0419 (0.315) [0.133]

Table 3 (Continued)

<i>Dependent Variables</i>		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Primary enrollment	Primary enrollment	Primary enrollment	Primary enrollment	Primary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment	Lower secondary enrollment
Central Anatolia	-0.0462 (-0.279) [0.165]	-0.0965 (-0.517) [0.187]	-0.134 (-0.832) [0.161]	-0.188 (-1.204) [0.156]	-0.0714 (-0.429) [0.166]	-0.1000 (-0.532) [0.188]	-0.154 (-0.960) [0.161]	-0.205 (-1.311) [0.156]	
Eastern Anatolia	0.142 (0.757) [0.188]	0.111 (0.551) [0.202]	0.0799 (0.407) [0.196]	0.0333 (0.174) [0.192]	0.158 (0.863) [0.183]	0.139 (0.703) [0.198]	0.0980 (0.515) [0.190]	0.0549 (0.296) [0.186]	
Southeastern Anatolia	0.0400 (0.136) [0.294]	0.0510 (0.164) [0.311]	-0.0261 (-0.0868) [0.301]	-0.0607 (-0.208) [0.292]	-0.0136 (-0.0479) [0.283]	-0.00275 (-0.00920) [0.299]	-0.0760 (-0.263) [0.289]	-0.108 (-0.386) [0.280]	
Observations	162	128	162	162	162	128	162	162	
R-squared	0.927	0.926	0.928	0.931	0.925	0.925	0.925	0.929	

Note: t-statistics are in parentheses (***) p<0.01, ** p<0.05, * p<0.1) and clustered robust standard errors at the provincial level are in brackets. Columns (1) – (4) use the natural logarithm of the number of female students in primary institutions, and columns (5) – (8) use the natural logarithm of the number of female students in lower secondary institutions as the dependent variable. *DSMS* is the abbreviation for the “Dad, Send Me to School” campaign. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013–2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

Table 4
Campaign Effectiveness on Female Total Upper Secondary Enrollment Levels

VARIABLES	<i>Dependent Variables</i>			
	(1) Upper secondary enrollment	(2) Upper secondary enrollment	(3) Upper secondary enrollment	(4) Upper secondary enrollment
DSMS <i>Scholarships</i>	0.00239 (0.869) [0.00275]			
DSMS <i>Funding</i>		-0.00904 (-0.209) [0.0431]		
Snowdrops <i>Scholarships</i>			0.00114 (1.583) [0.000721]	
Snowdrops <i>Funding</i>				0.0905** (2.349) [0.0385]
Population density	0.581*** (5.520) [0.105]	0.514*** (4.294) [0.120]	0.563*** (5.207) [0.108]	0.543*** (4.990) [0.109]
Average household size	0.127 (1.283) [0.0988]	0.148 (1.409) [0.105]	0.121 (1.269) [0.0957]	0.102 (1.139) [0.0900]
GDP per capita	0.105 (0.756) [0.138]	0.0963 (0.631) [0.153]	0.0904 (0.671) [0.135]	0.0922 (0.701) [0.131]
Divorces per capita	0.137 (1.486) [0.0921]	0.218** (2.111) [0.103]	0.142 (1.540) [0.0922]	0.127 (1.393) [0.0911]
Libraries	0.0158 (1.503) [0.0105]	0.0319*** (2.754) [0.0116]	0.0154 (1.501) [0.0102]	0.0163 (1.552) [0.0105]
Agricultural production per capita	-0.110 (-1.403) [0.0784]	-0.0735 (-0.891) [0.0825]	-0.0891 (-1.161) [0.0768]	-0.109 (-1.455) [0.0747]
Road length	0.000891*** (4.390) [0.000203]	0.000688*** (3.243) [0.000212]	0.000886*** (4.347) [0.000204]	0.000854*** (4.177) [0.000205]
Average age at first marriage (bride)	0.0313 (0.611) [0.0512]	0.0518 (0.842) [0.0615]	0.0295 (0.575) [0.0513]	0.0207 (0.419) [0.0494]
Elderly dependency ratio	-0.0396** (-2.623) [0.0151]	-0.0502*** (-2.730) [0.0184]	-0.0425*** (-2.701) [0.0157]	-0.0448*** (-2.923) [0.0153]

Table 4 (Continued)

VARIABLES	<i>Dependent Variables</i>			
	(1) Upper secondary enrollment	(2) Upper secondary enrollment	(3) Upper secondary enrollment	(4) Upper secondary enrollment
Sex ratio	-0.0318*** (-3.761) [0.00845]	-0.0356*** (-3.345) [0.0106]	-0.0323*** (-3.885) [0.00833]	-0.0329*** (-3.972) 0.00828 [-0.0277]
Doctors per capita	-0.0466 (-0.572) [0.0813]	-0.131 (-1.621) [0.0808]	-0.0323 (-0.398) [0.0813]	0.00828 (-0.353) [0.0783]
Black Sea	0.0570 (0.301) [0.189]	0.0617 (0.287) [0.215]	0.0354 (0.197) [0.179]	-0.000258 (-0.00146) [0.177]
Aegean	0.166 (1.253) [0.133]	0.0265 (0.181) [0.146]	0.115 (0.950) [0.121]	0.0765 (0.608) [0.126]
Mediterranean	0.190 (1.386) [0.137]	0.0787 (0.575) [0.137]	0.156 (1.191) [0.131]	0.120 (0.926) [0.130]
Central Anatolia	-0.0108 (-0.0724) [0.149]	-0.0696 (-0.411) [0.169]	-0.0564 (-0.399) [0.141]	-0.0945 (-0.680) [0.139]
Eastern Anatolia	0.126 (0.756) [0.166]	0.111 (0.627) [0.177]	0.0877 (0.534) [0.164]	0.0549 (0.337) [0.163]
Southeastern Anatolia	0.0603 (0.239) [0.252]	0.0736 (0.281) [0.262]	0.0250 (0.0991) [0.252]	0.000606 (0.00246) [0.247]
Observations	162	128	162	162
R-squared	0.922	0.927	0.923	0.926

Note: t-statistics are in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$) and clustered robust standard errors at the provincial level are in brackets. Columns (1) – (4) use the natural logarithm of the number of female students in upper secondary institutions. DSMS is the abbreviation for the “Dad, Send Me to School” campaign. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013–2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

To further understand the enrollment patterns at the upper secondary level, we run our funding and scholarship variables along with our controls on girls' vocational school and general upper secondary school enrollment levels to find that only “Snowdrops” scholarships and funds play a positive effect on girls' general secondary enrollment. Neither campaign has a significant impact on enrollment at the vocational school level. The results reported in Table 5 are consistent with our previous findings.

Table 5
 Campaign Effectiveness on Female Upper Secondary Enrollment Levels (Vocational vs. General Institutions)

VARIABLES	Dependent Variables							
	(1) General upper secondary enrollment	(2) General upper secondary enrollment	(3) General upper secondary enrollment	(4) General upper secondary enrollment	(5) Vocational upper secondary enrollment	(6) Vocational upper secondary enrollment	(7) Vocational upper secondary enrollment	(8) Vocational upper secondary enrollment
DSMS <i>Scholarships</i>	0.00341 (1.127) [0.00303]				0.00116 (0.424) [0.00274]			
DSMS <i>Funding</i>		0.0163 (0.350) [0.0467]				-0.0403 (-0.966) [0.0418]		
Snowdrops <i>Scholarships</i>			0.00177** (2.362) [0.000749]				0.000381 (0.496) [0.000769]	
Snowdrops <i>Funding</i>				0.120*** (2.792) [0.0429]				0.0559 (1.359) [0.0411]
Population density	0.510*** (4.476) [0.114]	0.461*** (3.565) [0.129]	0.481*** (4.106) [0.117]	0.461*** (3.898) [0.118]	0.657*** (6.282) [0.105]	0.573*** (4.906) [0.117]	0.653*** (6.067) [0.108]	0.632*** (5.850) [0.108]
Average household size	0.144 (1.304) [0.110]	0.165 (1.379) [0.120]	0.134 (1.245) [0.108]	0.113 (1.114) [0.101]	0.104 (1.133) [0.0916]	0.123 (1.304) [0.0942]	0.104 (1.169) [0.0891]	0.0870 (1.033) [0.0842]
GDP per capita	-0.00475 (-0.0318) [0.149]	0.00690 (0.0414) [0.167]	-0.0265 (-0.183) [0.145]	-0.0211 (-0.150) [0.141]	0.246* (1.691) [0.146]	0.201 (1.286) [0.157]	0.242* (1.681) [0.144]	0.239* (1.680) [0.142]

Table 5 (Continued)

VARIABLES		<i>Dependent Variables</i>							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	General upper secondary enrollment	0.243**	0.297**	0.250**	0.231**	-0.00120	0.119	0.00227	-0.00887
Divorces per capita		(2.351) [0.103]	(2.564) [0.116]	(2.447) [0.102]	(2.250) [0.103]	(-0.0128) [0.0940]	(1.123) [0.106]	(0.0240) [0.0949]	(-0.0956) [0.0928]
Libraries		0.0157 (1.482)	0.0303** (2.523)	0.0150 (1.473)	0.0164 (1.552)	0.0167 (1.544)	0.0350*** (3.090)	0.0166 (1.546)	0.0169 (1.572)
Agricultural production per capita		[0.0106] -0.119	[0.0120] -0.0807	[0.0102] -0.0871	[0.0106] -0.116	[0.0108] -0.101	[0.0113] -0.0611	[0.0107] -0.0929	[0.0108] -0.101
Road length		(-1.369) [0.0867]	(-0.874) [0.0923]	(-1.042) [0.0836]	(-1.415) [0.0823]	(-1.316) [0.0765]	(-0.766) [0.0798]	(-1.198) [0.0776]	(-1.353) [0.0744]
Average age at first marriage (bride)		0.000842*** (3.835)	0.000634*** (2.697)	0.000835*** (3.781)	0.000795*** (3.610)	0.000936*** (4.883)	0.000734*** (3.821)	0.000936*** (4.859)	0.000913*** (4.697)
Elderly dependency ratio		[0.000220] 0.0788	[0.000235] 0.0931	[0.000221] 0.0759	[0.000220] 0.0648	[0.000192] -0.0279	[0.000192] 0.00576	[0.000193] -0.0284	[0.000194] -0.0345
		(1.420)	(1.380)	(1.350)	(1.205)	(-0.558)	(0.0989)	(-0.569)	(-0.709)
		[0.0555] -0.0385**	[0.0674] -0.0474**	[0.0563] -0.0432**	[0.0537] -0.0453***	[0.0500] -0.0428***	[0.0583] -0.0553***	[0.0500] -0.0436***	[0.0487] -0.0462***
		(-2.372) [0.0162]	(-2.345) [0.0202]	(-2.502) [0.0173]	(-2.663) [0.0170]	(-2.663) [0.0161]	(-3.011) [0.0184]	(-2.645) [0.0165]	(-2.918) [0.0158]

Table 5 (Continued)

VARIABLES		<i>Dependent Variables</i>							
		(1) General upper secondary enrollment	(2) General upper secondary enrollment	(3) General upper secondary enrollment	(4) General upper secondary enrollment	(5) Vocational upper secondary enrollment	(6) Vocational upper secondary enrollment	(7) Vocational upper secondary enrollment	(8) Vocational upper secondary enrollment
Sex ratio		-0.0316*** (-3.410) [0.00926]	-0.0346*** (-2.868) [0.0121]	-0.0325*** (-3.536) [0.00918]	-0.0330*** (-3.636) [0.00907]	-0.0351*** (-3.996) [0.00878]	-0.0373*** (-4.079) [0.00863]	-0.0352*** (-4.158) [0.00862]	-0.0358*** (-4.158) [0.00862]
Doctors per capita		-0.0126 [0.00926]	-0.0808 [0.0101]	0.0101 [0.00918]	0.0118 [0.00907]	-0.0862 [0.00878]	-0.191** [0.00863]	-0.0822 [0.00862]	-0.0738 [0.00862]
Black Sea		(-0.135) [0.0935]	(-0.852) [0.0949]	(0.110) [0.0919]	(0.132) [0.0894]	(-1.048) [0.0822]	(-2.432) [0.0785]	(-0.978) [0.0841]	(-0.912) [0.0810]
Aegean		0.00642 (0.0317)	0.00912 (0.0396)	-0.0250 (-0.130)	-0.0711 (-0.372)	0.109 (0.587)	0.122 (0.587)	0.0994 (0.563)	0.0761 (0.439)
Mediterranean		0.172 (1.297)	0.0686 (0.716)	0.0948 (0.989)	0.0501 (0.666)	0.147 (1.283)	-0.0369 (-0.238)	0.126 (0.956)	0.0945 (0.695)
Central Anatolia		0.140 (1.297)	[0.154] (0.103)	[0.124] (0.131)	[0.129] (0.870)	[0.144] (1.93)	[0.155] (0.0425)	[0.131] (0.178)	[0.136] (0.152)
Eastern Anatolia		0.182 (1.297)	0.103 (0.716)	0.0989 (0.989)	0.0666 (0.666)	0.193 (1.283)	0.0425 (0.295)	0.178 (1.250)	0.152 (0.668)
		-0.0231 (-0.139)	-0.0363 (-0.198)	-0.0906 (-0.585)	-0.137 (-0.908)	-0.00827 (-0.0560)	-0.114 (-0.676)	-0.0275 (-0.195)	-0.0565 (-0.399)
		[0.166] 0.0968	[0.183] 0.0653	[0.155] 0.0394	[0.150] 0.00230	[0.148] 0.144	[0.168] 0.155	[0.141] 0.130	[0.142] 0.101
		[0.185] (0.524)	[0.203] (0.322)	[0.188] (0.210)	[0.188] (0.0122)	[0.175] (0.823)	[0.177] (0.875)	[0.169] (0.766)	[0.168] (0.605)

Table 5 (Continued)

VARIABLES		<i>Dependent Variables</i>							
		(1) General upper secondary enrollment	(2) General upper secondary enrollment	(3) General upper secondary enrollment	(4) General upper secondary enrollment	(5) Vocational upper secondary enrollment	(6) Vocational upper secondary enrollment	(7) Vocational upper secondary enrollment	(8) Vocational upper secondary enrollment
Southeastern Anatolia		0.118 (0.442) [0.267]	0.122 (0.427) [0.286]	0.0655 (0.239) [0.275]	0.0372 (0.140) [0.265]	-0.0199 (-0.0810) [0.246]	0.0190 (0.0776) [0.244]	-0.0344 (-0.145) [0.238]	-0.0545 (-0.230) [0.237]
Observations		162	128	162	162	162	128	162	162
R-squared		0.908	0.912	0.911	0.914	0.922	0.929	0.922	0.924

Note: t-statistics are in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ and clustered robust standard errors at the provincial level are in brackets. Columns (1) – (4) use the natural logarithm of the number of female students in vocational upper secondary institutions, and columns (5) – (8) use the natural logarithm of the number of female students in general upper secondary institutions as the dependent variable. *DSMS* is the abbreviation for the “Dad, Send Me to School” campaign. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013 – 2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

5.2 Classroom Effects

In light of our benchmark results and given the difficulty in finding control variables affecting girls' schooling, we believe that examining classroom factors is important in understanding girls' schooling decisions across provinces. To do so we include the number of students per teacher to account for overcrowding effects at the primary, lower and upper secondary levels. The number of students per teacher is obtained from the Turkish Statistical Institute and is at the provincial level.

The results from Table 6 show that at the primary and secondary levels, the number of students per teacher does not have a significant impact on girls' schooling rate. We do not observe a significant effect of overcrowding. The rest of the results from Table 6 mirror those from our benchmark estimations in Table 2.

5.3 Other Robustness Checks

Due to the overlapping period of the two projects, we also estimate their effect on girls' enrollment rates including both projects simultaneously. Regressing the funding and scholarships provided by the two campaigns on primary, lower secondary and upper secondary enrollment rates, our results show that "Dad, Send Me to School" funds and "Snowdrops" scholarships have positive and significant effect on girls' primary schooling, while "Dad, Send Me to School" scholarships and funds have a negatively significant impact on girls' upper secondary schooling. The results, not reported here, show similarities to the benchmark findings from Table 2.¹⁴ Including the scholarships or the funding provided by both campaigns simultaneously does not change our benchmark findings.

As a final robustness check, we include further controls to account for labour market conditions, government spending on education and income inequality across provinces. To measure the former, we use the percentage of employment in agriculture and service as well as the female unemployment rate. The first two variables control for the percentage of employment in agriculture and service across provinces. Agriculture is a primary income source for families from rural parts of Turkey. We believe that the inclusion of this variable offers more information on the structure of employment across provinces. The female unemployment rate helps capture the difficulties women face in the labour market. Higher unemployment rates might be an unfortunate signal for families who are considering pulling their daughters out of secondary education to help with home production and chores. In measuring government spending on education, we use the percentage of consumption expenditure on education. To account for income inequalities across provinces we include the Gini coefficient and the poverty rate in our regressions. Unfortunately, due to the lack of data at the provincial level, the variables discussed above are obtained at the sub

¹⁴ The results are available upon request.

Table 6
Campaign Effectiveness with Classroom Effects

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
DSMS	0.0424*** (3.422) [0.0124]				-0.0103 (-0.530) [0.0194]				-0.156*** (-3.618) [0.0430]			
Scholarships												
DSMS		1.048*** (4.917) [0.213]				0.197 (0.766) [0.257]				-2.025*** (-3.391) [0.597]		
Funding												
Snowdrops			0.0142*** (4.284) [0.00332]				-1.22e-05 (-0.00256) [0.00479]				-0.0313** (-2.368) [0.0132]	
Scholarships												
Snowdrops				0.784*** (2.949) [0.266]			0.224 (0.776) [0.289]					-1.805** (-2.472) [0.730]
Funding												
Population density	-0.357 (-0.344) [1.038]	0.465 (0.362) [1.285]	-0.514 (-0.520) [0.988]	-0.579 (-0.627) [0.923]	1.060 (0.762) [1.392]	2.087 (1.186) [1.759]	1.018 (0.734) [1.386]	0.905 (0.678) [1.335]	-1.209 (-0.615) [1.966]	-1.107 (-0.497) [2.230]	-1.196 (-0.584) [2.046]	-0.998 (-0.493) [2.024]
Average household size	-0.351 (-0.251) [1.402]	0.127 (0.0882) [1.459]	-0.324 (-0.520) [0.988]	-0.456 (-0.627) [0.923]	-1.337 (-1.040) [1.286]	-0.760 (-0.512) [1.485]	-1.370 (-1.078) [1.270]	-1.431 (-1.136) [1.260]	-4.890** (-2.176) [2.247]	-4.691** (-1.998) [2.347]	-5.330** (-2.160) [2.468]	-5.034** (-2.037) [2.471]
GDP per capita	-4.313 (-4.313) [0.101]	-3.312*** (-3.344) [0.990]	-4.527*** (-4.409) [1.027]	-4.469*** (-4.586) [0.975]	0.924 (0.771) [1.199]	1.011 (0.837) [1.209]	0.910 (0.755) [1.204]	0.859 (0.709) [1.212]	8.912*** (3.176) [2.806]	7.438** (2.519) [2.952]	9.353*** (3.226) [2.900]	9.176*** (3.149) [2.913]
Divorees per capita	1.608 (1.280) [1.256]	0.782 (0.655) [1.193]	1.736 (1.430) [1.214]	1.624 (1.378) [1.178]	1.866 (1.259) [1.482]	1.604 (1.172) [1.368]	1.830 (1.265) [1.447]	1.794 (1.250) [1.431]	0.556 (0.259) [2.146]	1.138 (0.539) [2.113]	-0.0458 (-0.0209) [2.189]	0.234 (0.106) [2.101]
Libraries	0.011 (0.317) [0.0350]	-0.039 (-0.643) [0.210]	0.00742 (0.210) [0.0353]	0.0195 (-0.590) [0.0531]	-0.00561 (-0.126) [0.0444]	-0.0828 (-1.187) [0.0697]	-0.00800 (-0.177) [0.0452]	-0.00853 (-0.185) [0.0462]	0.0325 (0.362) [0.0898]	-0.0142 (-0.110) [0.0906]	0.0285 (0.314) [0.0328]	0.00273 (0.0282) [0.0833]

Table 6 (Continued)

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
Agricultural production per capita	-0.0375 [-0.0753]	0.371 (0.563)	0.239 (0.476)	0.0300 (0.0619)	0.759 (0.799)	0.921 (0.823)	0.727 (0.785)	0.705 (0.756)	0.195 (0.125)	-0.289 (-0.168)	-0.552 (-0.326)	-0.0631 (-0.0396)
Road length	[0.499] [-2.35e-05 (-0.0446)]	[0.659] [0.000146 (0.230)]	[0.501] [-3.73e-05 (-0.0693)]	[0.486] [-0.000287 (-0.364)]	[0.950] [0.000446 (0.708)]	[1.119] [0.00105 (1.425)]	[0.926] [0.000484 (0.689)]	[0.932] [0.000347 (0.528)]	[1.568] [-0.00377* (-1.974)]	[1.721] [-0.00269 (-1.237)]	[1.694] [-0.00391e** (-2.092)]	[1.592] [-0.00333* (-1.910)]
Average age at first marriage (bride)	[0.000527] [0.188]	[0.000634] [0.139]	[0.000539] [0.164]	[0.000510] [0.106]	[0.000630] [0.546]	[0.000740] [0.482]	[0.000630] [0.537]	[0.000658] [0.501]	[0.00191] [2.947***]	[0.00217] [2.814***]	[0.00187] [2.987***]	[0.00174] [3.134***]
Elderly dependency ratio	[0.271] [-0.192]	[0.328] [-0.0529]	[0.275] [-0.222]	[0.283] [-0.227]	[0.356] [0.0654]	[0.422] [0.280]	[0.357] [0.0592]	[0.351] [0.0419]	[0.808] [0.218]	[0.870] [0.356]	[0.871] [0.261]	[0.851] [0.268]
Sex ratio	[0.274] [-0.0703 (-1.321)]	[0.245] [-0.0865 (-1.383)]	[0.235] [-0.0744 (-1.362)]	[0.330] [-0.0760 (-1.368)]	[0.376] [-0.105 (-1.356)]	[0.333] [-0.107 (-1.114)]	[0.323] [-0.108 (-1.405)]	[0.431] [-0.112 (-1.464)]	[0.459] [-0.347 (-1.177)]	[0.480] [-0.285 (-1.549)]	[0.472] [-0.347 (-1.549)]	-0.345 (-1.489) [-0.232]
Doctors per capita	[0.888 (1.624)]	[1.422* (1.861)]	[1.038* (1.871)]	[1.001* (1.774)]	[0.257 (0.394)]	[0.0965] (0.907)	[0.0776] (0.424)	[0.0664] (0.499)	[0.209] [1.782]	[0.242] [2.049]	[0.224] [1.614]	[0.232] [1.652]
Students per teacher (primary)	[0.547] [0.121]	[0.764] [0.146]	[0.555] [0.115]	[0.564] [0.126]	[0.653] [0.126]	[0.853] [0.126]	[0.659] [0.126]	[0.680] [0.126]	[1.263] [1.411]	[1.312] [1.561]	[1.158] [1.419]	[1.194] [1.383]
Students per teacher (lower secondary)	[0.819] [0.148]	[1.027] [0.142]	[0.780] [0.147]	[0.852] [0.148]	[0.0509 (0.312)]	[0.0446 (0.290)]	[0.0389 (0.242)]	[0.0236 (0.152)]				
Students per teacher (upper secondary)									0.0465 (0.150)	0.0155 (0.0440)	0.0873 (0.233)	0.0498 (0.146)

Table 6 (Continued)

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
Black Sea	-0.609 (-0.684)	-0.997 (-1.002)	-0.978 (-1.115)	-1.250 (-1.309)	1.116 (1.119)	0.663 (0.595)	1.164 (1.257)	1.032 (1.081)	1.288 (0.530)	0.756 (0.316)	2.551 (1.163)	3.200 (1.529)
Aegean	[0.891] -1.152	[0.951] -0.0547	[0.877] -1.937**	[0.956] -2.150**	[0.997] -0.0685	[1.131] 0.765	[0.926] 0.00861	[0.952] -0.192	[2.429] -0.617	[2.390] -0.879	[2.192] 1.791	[2.093] 2.318
Mediterranean	(1.283) [0.897]	(0.582) [0.940]	(-2.267) [0.855]	(-2.298) [0.936]	(-0.0586) [1.170]	(0.647) [1.182]	(0.00703) [1.225]	(-0.158) [1.214]	(-0.244) [2.52]	(-0.363) [2.422]	(0.737) [2.429]	(0.953) [2.432]
Central Anatolia	-2.125*** (-2.718)	-1.145 [0.824]	-2.676*** [0.521]	-2.922*** [0.787]	-0.881 [1.193]	-0.128 [1.264]	-0.807 [1.251]	-0.953 [0.769]	0.512 [2.162]	0.712 [2.046]	2.302 [2.023]	2.889 [1.970]
Eastern Anatolia	-1.957 (-1.598)	-0.429 [0.306]	-2.672** (-2.314)	-2.912** (-2.451)	-0.337 (-0.196)	1.678 (0.880)	-0.251 (1.837)	-0.427 (-0.237)	0.0335 (0.0104)	0.564 (0.178)	2.318 (0.719)	2.890 (0.924)
Southeastern Anatolia	[1.225] -0.256	[1.402] -0.435	[1.155] -0.789	[1.188] -0.948	[1.721] 2.085	[1.906] 2.855	[1.834] 2.103	[1.798] 1.920	[3.228] -3.914	[3.174] -3.169	[3.226] -2.458	[3.128] -2.058
Observations	162	128	162	162	162	128	162	162	162	128	162	162
R-squared	0.291	0.383	0.302	0.304	0.572	0.632	0.571	0.573	0.878	0.886	0.871	0.872

Note: t-statistics are in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ and clustered robust standard errors at the provincial level are in brackets. Columns (1) – (4) use *net female primary schooling rates*, columns (5) – (8) use *net female lower secondary schooling rates*, and columns (9) – (12) use *net female upper secondary schooling rates* as the dependent variable. *DSMS* is the abbreviation for the “Dad, Send Me to School” campaign. *Students per teacher* is the ratio of the number of students to teachers at each institutional level. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013–2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

regional level (NUTS 2). In order to use the sub regional data with our provincial sample, we match our provinces with the larger regions that are reported under the sub regional level. Furthermore, for some of our variables, like the Gini coefficient, data is only available for the 2014 period. Under the assumption that the Gini coefficient does not change drastically from one year to the next, we create a time invariant measure of the Gini coefficient and the poverty rates from the regional level data for 2014.

The results from Table 7 show that both campaigns and funds are positively significant on girls' primary schooling and negatively significant on girls' upper secondary schooling. The poverty rate is negative, but mainly not significant for primary and upper secondary schooling; however, it is negatively significant for lower secondary schooling, highlighting the importance of poverty rates in undermining girls' education at the lower secondary level. Female unemployment rate is found to be negatively significant for the "Snowdrops" campaign, suggesting that higher unemployment rates lead to more enrollment at the primary level.

6. Discussion

The results in this paper show that both campaigns have been successful in achieving higher primary and lower secondary enrollment for girls during the short time frame that we analyze. However, the findings for the upper secondary level suggest that further analysis must be conducted to understand the dynamics for girls' enrollment at secondary institutions. A more detailed investigation into the level of enrollment across different institutions tells a similar story; campaigns have a significantly positive impact on primary and lower secondary education, whereas the impact is subdued at the upper secondary level. An analysis using gross schooling rates instead also yields similar results, with the campaigns having a positive impact on primary and lower secondary, and a negative impact on upper secondary enrollment.

In trying to understand whether the negative effect is rooted in the choice towards vocational institutions at the upper secondary level, our regressions using enrollment levels suggest that this is not the case. One possible explanation for the small but negative impact of the campaigns on upper secondary education could be the calculation of the schooling rate by the Turkish Statistical Institute. Another possibility could be the lack of monitoring from the two campaigns, which can lead to school dropouts despite the distribution of funds. Even with the changes in the compulsory education system over the years, parents have had the ability to homeschool their children under certain conditions (Ucan 2013). To avoid absenteeism and school dropouts, Article 56 of National Education enforces 15 Turkish liras in sanctions per

Table 7
Campaign Effectiveness with Additional Control Variables

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
DSMS	0.0439*** (3.144) [0.0140]				-0.00891 (-0.486) [0.0183]				-0.159*** (-3.950) [0.0404]			
DSMS		1.037*** (4.827) [0.215]				0.159 (0.648) [0.245]				-2.178*** (-3.676) [0.593]		
Snowdrops			0.0172*** (5.266) [0.00326]				0.00212 (0.486) [0.00436]				-0.0293** (-2.332) [0.0126]	
Snowdrops				0.905*** (3.485) [0.260]			0.346 (1.170) [0.296]					-1.738** (-2.512) [0.692]
Population density	-0.397 (-0.374) [1.062]	0.306 (0.242) [1.265]	-0.729 (-0.715) [1.020]	-0.715 (-0.773) [0.924]	1.097 (0.729) [1.504]	1.926 (1.089) [1.769]	0.974 (0.653) [1.413]	0.829 (0.587) [1.413]	-1.299 (-0.717) [1.813]	-1.435 (-0.704) [2.039]	-1.216 (-0.650) [1.871]	-1.117 (-0.602) [1.856]
Average household size	0.203 (1.160) [1.263]	0.828 (0.587) [1.410]	0.213 (0.173) [1.235]	0.154 (0.133) [1.163]	-1.003 (-0.599) [1.674]	-0.403 (-0.211) [1.910]	-1.079 (-0.652) [1.654]	-1.160 (-0.715) [1.622]	-2.973 (-1.205) [2.466]	-2.900 (-1.079) [2.687]	-3.445 (-1.277) [2.698]	-3.283 (-1.207) [2.720]
GDP per capita	-4.022*** (-3.028) [1.328]	-3.005*** (-2.682) [1.120]	-4.056*** (-2.996) [1.354]	-4.135*** (-3.149) [1.313]	0.599 (0.375) [1.598]	0.575 (0.408) [1.411]	0.608 (0.381) [1.595]	0.580 (0.369) [1.573]	10.185*** (3.422) [2.974]	8.407** (2.538) [3.131]	10.31*** (3.287) [3.137]	10.46*** (3.333) [3.139]
Divorees per capita	2.004 (1.514) [1.324]	1.508 (0.998) [1.374]	2.214* (1.729) [1.281]	2.054 (1.663) [1.235]	2.350 (1.404) [1.673]	2.549 (1.504) [1.695]	2.304 (1.418) [1.621]	2.239 (1.397) [1.602]	2.096 (0.948) [2.211]	3.447 (1.451) [2.375]	1.310 (0.584) [2.243]	1.622 (0.718) [2.260]
Librantes	0.0160 (0.522) [0.0305]	-0.000284 (-0.0573) [0.0496]	0.0212 (0.703) [0.0301]	0.0305 (0.172) [0.0284]	0.00934 (0.213) [0.0438]	-0.0221 (-0.352) [0.0628]	0.00796 (0.178) [0.0449]	0.0113 (0.254) [0.0444]	0.0684 (0.766) [0.0968]	0.107 (0.788) [0.136]	0.0476 (0.514) [0.0925]	0.0299 (0.348) [0.0859]
Agricultural production per capita	-0.177 (-0.277) [0.640]	0.216 (0.729) [0.774]	0.125 (0.611) [0.937]	-0.0899 (-0.144) [0.625]	0.913 (0.961) [0.950]	1.116 (1.020) [1.094]	0.920 (0.977) [0.942]	0.893 (0.947) [0.944]	0.112 (0.0795) [1.407]	0.0247 (0.0160) [1.549]	-0.579 (-0.372) [1.557]	-0.212 (-0.143) [1.484]

Table 7 (Continued)

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
Road length	3.13e-05 (0.0655)	4.23e-06 (0.00717)	-2.48e-05 (-0.0493)	-0.000273 (-0.541)	0.000306 (0.509)	0.000671 (1.093)	0.000276 (0.452)	0.000148 (0.228)	-0.004648** (-2.660)	-0.00419* (-1.716)	-0.004688** (-2.351)	-0.00417** (-2.174)
Average age at first marriage (bride)	0.0814 (0.280)	0.113 (0.000590)	0.0600 (0.210)	0.000502 (-0.0879)	0.563 (1.433)	0.560 (1.234)	0.553 (1.410)	0.508 (1.318)	3.356*** (3.855)	3.395*** (3.519)	3.348*** (3.606)	3.522*** (3.903)
Elderly dependency ratio	[0.290] -0.178	[0.357] -0.0531	[0.286] -0.223	[0.292] -0.214	[0.393] 0.114	[0.454] 0.311	[0.392] 0.0998	[0.386] 0.0846	[0.870] 0.386	[0.965] 0.478	[0.929] 0.412	[0.903] 0.411
Sex ratio	(-0.643) [0.276]	(-0.181) [0.293]	(-0.824) [0.270]	(-0.846) [0.360]	(0.316) [0.301]	(0.780) [0.399]	(0.276) [0.362]	(0.241) [0.351]	(0.940) [0.411]	(1.071) [0.447]	(0.899) [0.458]	(0.896) [0.459]
Doctors per capita	-0.0579 (-1.176)	-0.0669 (-1.112)	-0.0684 (-1.354)	-0.0642 (-1.301)	-0.0917 (-1.305)	-0.0842 (-0.907)	-0.0959 (-1.381)	-0.0993 (-1.441)	-0.333 (-1.640)	-0.234 (-0.971)	-0.332 (-1.497)	-0.336 (-1.483)
Employment in Agriculture	[0.0492] 1.201*	[0.0601] 1.655*	[0.0506] 1.480**	[0.0494] 1.405**	[0.0703] 0.634	[0.0928] 0.955	[0.0695] 0.704	[0.0689] 0.777	[0.203] 2.913**	[0.241] 3.087**	[0.222] 2.650**	[0.226] 2.709**
Employment in Service	(1.962) [0.612]	(1.887) [0.877]	(2.385) [0.621]	(2.228) [0.631]	(0.898) [0.705]	(0.982) [0.973]	(0.978) [0.720]	(1.026) [0.757]	(2.317) [1.257]	(2.043) [1.511]	(2.024) [1.310]	(2.138) [1.267]
Gini coefficient	0.0462 (1.607)	0.0480 (1.485)	0.0463 (1.587)	0.0448 (1.630)	0.00133 (0.0293)	0.000811 (0.0202)	0.0011 (0.0245)	0.000373 (0.0401)	0.0918 (0.957)	0.0922 (0.108)	0.0903 (0.905)	0.0933 (0.940)
Poverty rate	(-0.795) 8.984	(-0.866) 2.722	(-1.281) 7.677	(-1.147) 8.223	(-0.862) 21.85	(-1.426) 13.65	(-0.923) 20.74	(-0.951) 19.86	(-1.229) 41.37	(-1.279) 36.30	(-0.827) 38.00	(-0.920) 37.86
Consumption	(0.576) [15.60]	(0.196) [3.92]	(0.511) [15.02]	(0.566) [14.52]	(1.043) [20.95]	(0.769) [17.75]	(1.008) [20.57]	(0.995) [19.96]	(1.322) [31.30]	(1.164) [31.19]	(1.112) [34.18]	(1.127) [33.59]
	(-1.414) [0.149]	(-1.124) [0.118]	(-1.765) [0.178]	(-1.610) [0.127]	(-1.708) [0.166]	(-1.805) [0.178]	(-1.720) [0.180]	(-1.753) [0.180]	(-1.496) [0.296]	(-1.849) [0.331]	(-1.167) [0.327]	(-1.204) [0.327]
	0.636	0.551	0.608	0.811	0.684	0.782	0.688	0.764	1.699	1.680	1.789	1.402

Table 7 (Continued)

VARIABLES	Dependent Variables											
	(1) Primary schooling rate	(2) Primary schooling rate	(3) Primary schooling rate	(4) Primary schooling rate	(5) Lower secondary schooling rate	(6) Lower secondary schooling rate	(7) Lower secondary schooling rate	(8) Lower secondary schooling rate	(9) Upper secondary schooling rate	(10) Upper secondary schooling rate	(11) Upper secondary schooling rate	(12) Upper secondary schooling rate
expenditure on education	(1.160)	(0.745)	(1.100)	(1.419)	(1.042)	(0.949)	(1.043)	(1.123)	(1.170)	(1.018)	(1.206)	(0.963)
Female	[0.548]	[0.739]	[0.553]	[0.571]	[0.657]	[0.824]	[0.660]	[0.680]	[1.452]	[1.650]	[1.483]	[1.456]
unemployment	0.0800	0.0844	0.100*	0.0898*	0.0254	0.0915	0.0282	0.0296	-0.106	-0.0567	-0.139	-0.124
Black Sea	(1.551)	(1.484)	(1.933)	(1.803)	(0.350)	(2.124)	(0.390)	(0.417)	(-0.702)	(-0.358)	(-0.849)	(-0.750)
	[0.0516]	[0.0508]	[0.0519]	[0.0498]	[0.0727]	[0.0754]	[0.0723]	[0.0710]	[0.151]	[0.159]	[0.164]	[0.165]
	-1.386	-1.841	-1.834**	-2.150**	0.755	0.310	0.801	0.645	-0.951	-1.345	0.412	1.048
	(-1.549)	(-1.634)	(-2.066)	(-2.299)	(0.631)	(0.213)	(0.698)	(0.541)	(-0.381)	(-0.521)	(0.179)	(0.473)
	[0.895]	[1.127]	[0.887]	[0.935]	[1.197]	[1.457]	[1.193]	[2.498]	[2.582]	[2.301]	[2.301]	[2.215]
Aegean	-2.520***	-1.695	-3.554***	-3.805***	-1.300	-0.940	-1.276	-1.520	-4.178	-5.292*	-1.521	-0.915
	(-2.741)	(-1.485)	(-4.131)	(-3.983)	(-1.003)	(-0.672)	(-1.026)	(-1.161)	(-1.537)	(-1.780)	(-0.609)	(-0.372)
	[0.919]	[1.141]	[0.860]	[0.955]	[1.296]	[1.400]	[1.244]	[1.309]	[2.718]	[2.974]	[2.496]	[2.457]
Mediterranean	-2.285**	-1.153	-2.617***	-2.983***	-0.771	0.222	-0.642	-0.733	0.924	1.455	2.491	3.154
	(-2.338)	(-1.045)	(-2.858)	(-3.285)	(-0.596)	(0.170)	(-0.507)	(-0.586)	(0.324)	(0.502)	(0.951)	(1.249)
	[0.977]	[1.103]	[0.916]	[0.908]	[1.292]	[1.307]	[1.267]	[1.252]	[2.856]	[2.898]	[2.620]	[2.526]
Central Anatolia	-2.706**	-1.177	-3.531***	-3.832***	-1.014	0.971	-0.963	-1.170	-1.398	-1.383	0.913	1.369
	(-2.169)	(-0.786)	(-2.938)	(-3.118)	(-0.592)	(0.515)	(-0.544)	(-0.661)	(-0.397)	(-0.384)	(0.268)	(0.476)
	[1.248]	[1.497]	[1.202]	[1.229]	[1.714]	[1.884]	[1.769]	[1.771]	[3.524]	[3.603]	[3.407]	[3.298]
Eastern Anatolia	-0.812	-0.671	-1.251	-1.490	2.018	3.373	2.059	1.929	-6.872*	-4.790	-5.562	-5.071
	(-0.699)	(-0.437)	(-1.050)	(-1.267)	(-1.187)	(1.599)	(1.182)	(1.119)	(-1.895)	(-1.225)	(-1.470)	(-1.373)
	[1.163]	[1.536]	[1.192]	[1.177]	[1.700]	[2.109]	[1.743]	[1.724]	[3.627]	[3.910]	[3.784]	[3.694]
Southeastern Anatolia	-0.955	-0.893	-1.397	-1.697*	2.477**	3.085**	2.538**	2.399**	0.467	1.142	1.896	2.492
	(-1.135)	(-0.837)	(-1.503)	(-1.825)	(2.147)	(2.472)	(2.241)	(2.113)	(0.139)	(0.317)	(0.537)	(0.744)
	[0.842]	[1.067]	[0.929]	[0.930]	[1.154]	[1.248]	[1.132]	[1.135]	[3.347]	[3.603]	[3.532]	[3.352]
Observations	162	128	162	162	162	128	162	162	162	128	162	162
R-squared	0.309	0.400	0.331	0.330	0.593	0.657	0.593	0.596	0.889	0.896	0.880	0.882

Note: t-statistics are in parentheses (**p<0.01, ***p<0.001) and clustered robust standard errors at the provincial level are in brackets. Columns (1) – (4) use *net/female primary schooling rates*, columns (5) – (8) use *net/female lower secondary schooling rates*, and columns (9) – (12) use *net/female upper secondary schooling rates* as the dependent variable. *DSMS* is the abbreviation for the “Dad, Send Me to School” campaign. The regressions are estimated over 81 provinces and 2 years. The estimation period in our regressions is 2013–2014. The regressions use the natural logarithm of GDP per capita, the natural logarithm of population density, and the natural logarithm of the value of agricultural production per capita. The dummy variable for the Marmara region is dropped as the base category. The above estimations include a constant term, which is not reported here.

day of any school dismissal (MEB 2019).¹⁵ Nevertheless, given that most families who refrain from sending their daughters to school are low-income households, it is unlikely that the sanctions provide a binding mechanism for school enrollment or completion. Unfortunately, due to the lack of data, we are unable to capture the effect of the changes in the Turkish education system on girls’ enrollment rates. The new education reform has increased years of compulsory education; however, given the limitations of sanctions, parents under the new system can keep their children out of school following the completion of the first or second four years of schooling. This option, if exercised, could also explain the decline in enrollment rates at the upper secondary level in our analysis.

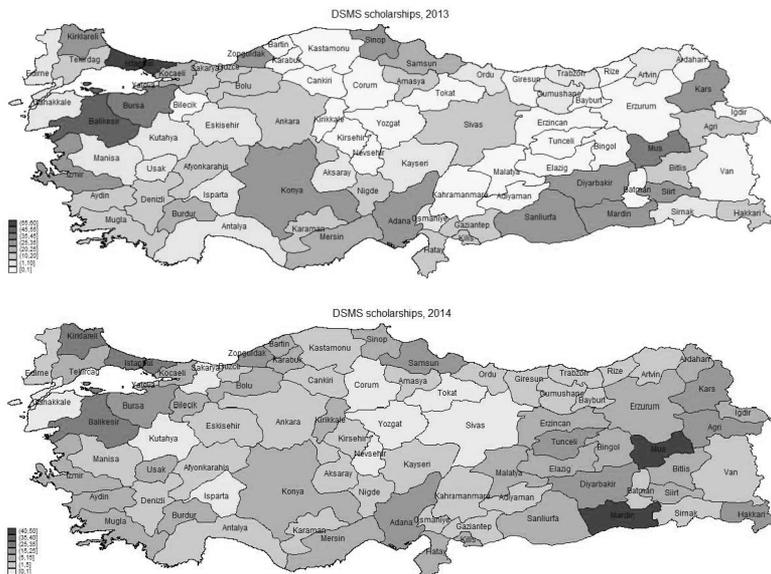


Figure 1: Geographical Heat Maps for the “Dad, Send Me to School” Campaign

¹⁵ Monetary penalties are applicable for the first two violations for parents who do not comply with the compulsory schooling laws. Larger sums of 500 liras have been imposed on families who do not send their children to school (Ergun 2012). The third and fourth violations carry the risk of incarceration for up to 6 months (Kirdar, Dayioglu, and Koc 2015).

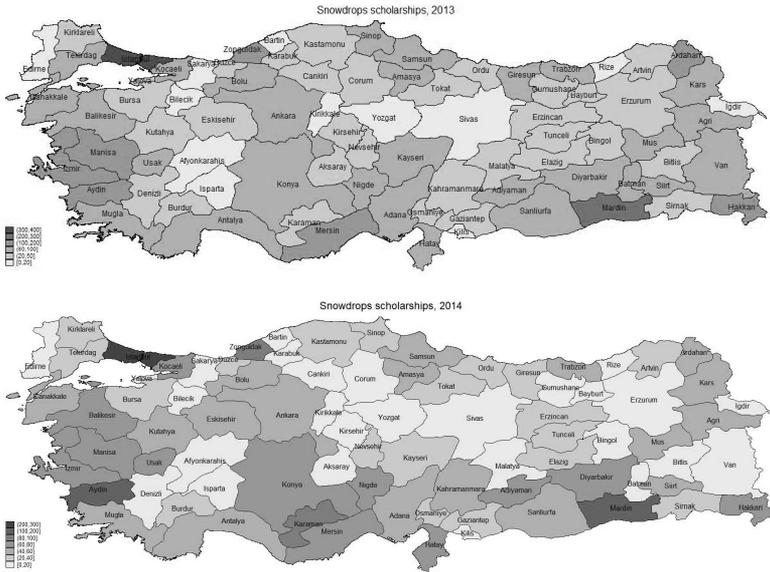


Figure 2: Geographical Heat Maps for the “Snowdrops” Campaign

An examination of the geographical heat maps for the “Dad, Send Me to School” and “Snowdrops” projects reveals minor changes across years in the number of scholarships provided. The “Snowdrops” campaign, as shown by the more significant empirical results, has provided a larger number of scholarships across Turkey. The “Dad, Send Me to School” campaign, on the other hand, is more restricted in the amount of funds that it has been able to offer during the two years in which we conduct the analysis. Although large provinces like Istanbul have obtained more scholarships, provinces in the southeastern parts of Turkey also receive funds and scholarships. The internal migration patterns across provinces in Turkey result in larger populations in the three biggest provinces. As income inequalities across provinces grow, the number of girls applying for scholarships under these two projects from wealthier provinces also increase, which can be observed in our data.

With the limitations in monitoring enrollment and the possibility that the sanctions in place may not be binding, the educational reform that has increased the years of compulsory education in Turkey could have led to more potential school dropouts. Although this is beyond the scope of our analysis, an argument could be made that the increasing dropout rates due in part to the reform may influence private funding campaigns and how the funds are distributed across provinces. The current data used in this study does not offer the opportunity to control for the educational reform on the private funding campaigns, nor do we have provincial data on girls’ school dropout rates. However, an examination of our summary statistics table shows that funds do

not necessarily go to regions with lower primary or secondary schooling rates. Considering that the dropout rates have a significantly high (negative) correlation with schooling rates, a similar argument could be made regarding the relationship between funding and regions with high dropout rates. The funding mechanisms for both campaigns run independently from the provincial needs and necessities. Through the two campaigns, the funds, which are collected from donations in Turkey and abroad, are directed to scholarships for girls in need, or to the construction of schools, classrooms and dormitories. An analysis on the effect of these campaigns on school dropout rates across provinces is beyond the reach of our paper, however, the examination of education reform on private funding campaigns and school dropout rates is an important avenue for future research.

Since the launch of these two projects, different media channels including TV stations, newspapers as well as a mobile telecom operator have supported the Association for Supporting Contemporary Life in its mission to fund female students, promote girls' education and eradicate female illiteracy across Turkish provinces. One of the main contributors to the "Dad, Send Me to School" campaign, Dogan Group, sold a national newspaper that was instrumental for the campaign. Following the sale of this newspaper, Milliyet, the Association for Supporting Contemporary Life and Dogan Group reached a new protocol in 2011 for the continuation of support in funding the "Dad, Send Me to School" campaign (CYDD 2015). This agreement played a critical point in this project; "Dad, Send Me to School" campaign lost an important publicity aspect, which previously was making its call for funding and outcomes of these funds more visible. However, the campaign put additional efforts to collaborate with celebrities to introduce commercials that were aired on numerous channels to reach out to a wider public in anticipation of further funds. Given our current data coverage, we are unable to capture the effect of the sale of Milliyet on total funds collected or on the scholarships provided for girls' education. However, it is important to acknowledge that this event may have changed the progression of the campaign, forcing the Association for Supporting Contemporary Life to find alternate means to continue its funding efforts.¹⁶

Over the last number of years, Turkey has been able to improve the educational attainment of its population with the share of young adults without upper secondary education falling by 16% (OECD Education GPS 2018). Nevertheless, the 75% graduation rate from upper secondary is still concerning, in comparison to the OECD average of 86% (OECD Country Note 2019). Additionally, 6% of Turkish students are grade repeaters with girls being more likely to repeat a grade at the lower secondary level, leading to the highest share of female repeaters across all OECD countries (OECD Education GPS 2018).¹⁷ This could be one of the reasons why we observe negative effects of the campaigns on the upper secondary schooling rate, but insig-

¹⁶ We thank the anonymous referee for raising this point.

¹⁷ Girls constitute 58% of all repeaters at the lower secondary level in Turkey (OECD Education GPS 2018).

nificant effects for the upper secondary enrollment level. In equalizing access to upper secondary education across genders, Turkey has to find ways of supporting over-age girls who remain at a disadvantage in enrollment and completion of secondary education (UNESCO Institute for Statistics 2018).

Recent statistics from the OECD show that public expenditure in education as a percentage of GDP has increased by 24% since 2010 (OECD Country Note 2019). Much of this increase in public expenditure is directed towards tertiary education, which calls the financing of primary and secondary education into question (OECD Country Note 2019). Private sources account for 25% of total spending on primary and secondary education, more than twice the OECD average (OECD Country Note 2019). This accentuates the role of private sources such as non-governmental organizations (NGO) in education financing. NGOs like the Association for Supporting Contemporary Life have played an important role in girls' education. Financial restraints, monitoring, scaling of the programs and their effectiveness and the lack of coordination between NGOs and governments are among some of the challenges that affect the outreach of NGO programs in education. Although not easy, tackling these issues will help NGOs such as the Association for Supporting Contemporary Life achieve the desired outcomes from their funding programs on girls' education.

7. Concluding Remarks

As the role of private sources continues to grow in education expenditure, private funding campaigns become increasingly important in the context of education. In this paper, we have analyzed the impact of two major funding campaigns on girls' education across Turkish provinces. Over the last two decades, the "Dad, Send Me to School" and "Snowdrops" campaigns have played a vital role in highlighting the inequalities in access to education, and promoting education for girls who have been deprived the opportunity for various reasons. In understanding the importance of these two campaigns, we have examined whether private funding, channeled mainly towards girls' primary and secondary education through the provision of scholarships, has led to an increase in schooling rates across Turkish provinces.

Controlling for regional, socio-demographic characteristics and other factors that affect education, our results show that the private funding provided under the two campaigns has positively influenced girls' schooling rates at primary and lower secondary institutions. Our findings yield mixed results for upper secondary schooling, which calls for a more in-depth analysis of the choice between schools at this level of education. Examining the effects of student overcrowding, we find that the student per teacher ratio does not have a significant impact on girls' primary or secondary schooling. Looking at the enrollment levels across primary and secondary institutions, both campaigns display positive and significant effects at the primary and lower secondary level. Nevertheless, the impact of these campaigns on upper sec-

ondary institutions is small and mainly insignificant. With the inclusion of further control variables to account for regional characteristics as well as inequalities, the poverty rate is shown to have a negative impact, whereas heightened female unemployment rates have a positive impact on girls' primary schooling.

The results overall demonstrate the importance of private funding for achieving gender equality in education. However, the findings for upper secondary education are somewhat less optimistic. More detailed private funding data would facilitate studying this issue in detail and help resolve this ambiguity. Our regressions have included various controls to account for cultural, demographic and social factors that are influential in girls' schooling decisions. Nevertheless, given the provincial structure of the analysis, we are not able to fully capture household effects and control for family specific factors such as sibship composition, son preference, family income and employment, and other cultural and social effects. A detailed survey analysis would help eliminate some of these issues and aid in understanding differences in primary and secondary school enrollment. Similarly, due to the limited time series availability of the data, we cannot control for the effect of the educational reform in compulsory education on girls' enrollment rates. A longer time series dataset will help control for this effect and would guide us in our analysis of how these private campaigns influence girls' enrollment pre and post educational reform.

Private funding for education, particularly girls' education, will continue to be at center stage in Turkey. Although media attention has subsided, the two campaigns continue to collect funds to enhance opportunities for girls' education. In moving forward, the two projects can focus more on keeping girls at school during their upper secondary education; a result which has not been fully achieved in light of our results. The campaigns, by doing so, could succeed in implementing gender equality in secondary education, which continues to be a big mission for Turkey. A future step could include getting girls into tertiary education. As more data become available, the findings from this paper could be extended to include the cultural, geographic and ethnic influences of these two large-scale campaigns on girls' enrollment rates, with a specific focus on secondary education. Further examination could also be carried out to better understand the impact of these campaigns on upper secondary and tertiary education. Additionally, an analysis of completion rates at the provincial level will help observe the full effect of these campaigns on girls' educational achievements.

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