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Free Textbooks and Long-term Outcomes: Evidence from Turkey

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Free Textbooks and Long-term Outcomes: Evidence from Turkey *

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Abstract

Access to resources significantly influences academic success, particularly for students facing disadvantages. This study, focusing on females, examines the effects of a reform in Turkey that provided free school textbooks to all students. Using primary school enrollment eligibility cutoffs and implementing a Regression Discontinuity design, I find that providing free textbooks in primary school improves females' likelihood of completing high school. In terms of labor market outcomes, I find that females are more likely to be in employment and less likely to be out of labor force. Additionally, males are also less likely to be out of labor force. There is no impact on earnings, nor on the socio-economic classification of the job.

JEL classifications: I12, I21, I26, J13

Keywords: Textbooks, Access to Resources, Returns to Education, Earnings, Employment

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1 Introduction

Educational attainment significantly impacts many of the later life outcomes.¹ There is evidence that educational attainment is significantly influenced by the availability and quality of resources, whether they be parental resources (Rege *et al.*, 2011; Bulman *et al.*, 2021; Barr *et al.*, 2022) or those provided by schools (Rockoff, 2004; Rivkin *et al.*, 2005). These monetary and non-monetary resources play a crucial role in shaping students' academic skills and, consequently, their future life outcomes such as labor market and health outcomes.² The impact of resources is a key factor contributing to intergenerational inequalities, as parents with greater resources can offer their children better opportunities, resulting in improved academic and labor market achievements (Dahl & Lochner, 2012; Bleakley & Ferrie, 2016; Bastian & Micheltore, 2018). Recognizing the crucial role that educational resources play in leveling the playing field, governments are increasingly implementing programs to improve access to educational resources, aiming to reduce these disparities and improve the outcomes of disadvantaged students.

This paper focuses on individuals in Turkey and examines the impact of a specific reform, particularly addressing one of the challenges faced by parents in the academic context: access to textbooks. The reform was implemented in the 2003/4 academic year in Turkey and introduced free distribution of school textbooks in primary schools. There were no eligibility criteria and all students received these textbooks free of charge. Notably, this reform aimed to achieve a dual objective: first, to alleviate financial burdens on parents related to their children's education, and second, to standardize the study material used in classrooms. The overarching goal was to ensure equal access to high-quality educational materials, especially benefiting individuals who may have previously faced difficulties obtaining them. This inclusivity targeted those from low-income families and individuals residing in rural areas, aiming to create a more uniform and accessible educational experience.

Annually, students in Turkey (prior to the reform) and many other countries are required to purchase or borrow books to facilitate their learning across various subjects.³ Textbooks play a

¹See Card (1999) for labor market outcomes, Silles (2009) for health, Low (2024) for fertility and Becker (1973); Low (2024) for marriage.

²The array of outcomes that is affected by parental and school monetary, time, and non-monetary resources are many such as personality traits (Akee *et al.*, 2018), cognitive and non-cognitive skills (Todd & Wolpin, 2007; Bono *et al.*, 2016), crime (Akee *et al.*, 2010).

³In 2022, the mean household spending on educational books were \$22.48 which constitutes an important part of monthly income. Calculation based on the Household Consumption Survey. The mean is for the households that have at least one child who is of primary schooling age. This figure does not include textbooks as there is no information about spending on textbooks. If textbooks were included, the mean would be higher. To put the number into context, minimum wage in 2022 in Turkey was \$331.55.

crucial role in education by providing organized and comprehensive information about the subjects taught in school. They serve as primary learning materials, used both within the classroom and for self-directed learning outside it, while teachers frequently assign homework based on textbook content. In addition to their role in formal instruction, textbooks function as valuable reference materials for students during revisions. This allows students to engage in self-directed learning at their own pace, gaining a deeper understanding of the material. However, despite their importance, access to textbooks is not always easy, particularly for individuals from low-income families or those residing in more rural areas. This accessibility challenge shows the importance of addressing barriers to ensure equitable access to this essential learning material.

To evaluate the effects of free textbook provision on the long-term outcomes for females, I analyze data from the 2024 Turkish Labor Force Statistics Micro Dataset. This nationally representative survey offers in-depth insights into how the free textbook reform impacts various adult outcomes. The dataset includes information about individuals' academic attainment as well as their labor market outcomes. In terms of labor market outcomes, it includes information on wages as well as the type of job that the individuals hold, including their socio-economic classification. The richness of the dataset enables a detailed examination of the effects stemming from the free textbook policy 20 years after the policy was implemented.

To assess the effects of the free textbook reform on individuals' long-term outcomes, I employ a Regression Discontinuity design, which uses birth dates to determine school enrollment eligibility. This approach enables a precise evaluation of the reform's impact by considering the specific age cutoff of school admissions. For the analysis, I implement a donut design due to the possibility that some students may not start school in the year that they are supposed to.

The results indicate that females who received free textbooks in primary school are more likely to complete high school by 5.2ppt, this corresponds to 9.5% of the control group variation for females. There is no impact on males, or females' likelihood of completing university. In terms of labor market outcomes, I find that females are 3.5ppt more likely to be in employment and 3.6ppt less likely to be out of labor force. The effect sizes correspond to 10% and 7.2% of the control group mean for females, respectively. For males, there is no employment effect but as females, they are also less likely to be out of labor force and the impact size is 3.7ppt. I find no impact on earnings, nor on the socio-economic classification of the job that the individuals hold. Together, these results suggest the program improved the education received by females

which then translated into their employment outcomes.

This paper contributes to the literature on the long-term returns to educational resources. Existing work on textbook provision has focused predominantly on short-run academic performance, with mixed findings. [Glewwe *et al.* \(2009\)](#) find no impact of textbook provision on test scores, a null result they attribute in part to the fact that the textbooks were written in English, which was the third language of the students in their sample. [Holden \(2016\)](#) study a program in which schools received funding to purchase educational materials, finding school-level improvements in test scores, though it remains unclear whether these effects are driven by textbooks specifically or by other uses of the funding. [Falisse *et al.* \(2024\)](#) take a different approach, using incentives to encourage students to make greater use of already freely available textbooks, and find improvements in test scores and higher rates of passing school leaving exams. Whether any of these short-run performance gains translate into higher attainment or labor market returns remains an open question, particularly if employers reward credentials over skills. This paper provides the first evidence on the long-run consequences of textbook access, showing that the program improves academic attainment which then improves the individuals, especially females, labor market outcomes 20 years after the implementation of the policy.

2 Institutional Context and the Reform

Turkey, classified as an upper-middle-income developing country, has maintained formal control of its education system under the National Ministry of Education since the establishment of the republic in 1923. The ministry is responsible for implementing reforms, setting policies, and designing the curriculum as well as recruiting teachers in the country, and there are no regional differences in curriculum, etc. The current education system mandates 12 years of compulsory schooling; however, this was not always the case: There have been several reforms increasing the mandatory schooling age, the most recent one being in 2012.

In the beginning of the academic year 2003/4, a significant reform was introduced by the National Ministry of Education, making school textbooks freely accessible to *all* primary school students, regardless of whether they attended public or private schools. The average cost of one book (including the development of the content) for the period between 2003/4 and 2009/10

academic years was \$1.1.⁴(MEB, 2009) Prior to this reform, students were required to purchase or borrow the textbooks used in their classes. The cost of buying books privately was not too high (they were about \$5-\$15, depending on the course and the quality of the material) but it presented a financial challenge for some families, particularly those with lower incomes. Additionally, acquiring books posed greater difficulties for residents of rural areas, especially those in remote and underserved regions.

The new reform aimed to address these challenges by alleviating financial burdens on students and their families related to educational investments. Furthermore, it sought to standardize the *teaching* of the curriculum.⁵ The reform, therefore, not only aimed to make education more financially accessible but also sought to ensure a more equitable distribution of educational resources and teaching materials by providing quality books to all students.

The Turkish education system, like many others globally, employs an age-based cutoff for school admission eligibility. According to Turkish regulations, students start school in the fall semester of the year that they turn 6. This setup creates a notable discontinuity centered around January 1st, offering a natural experiment for researchers to implement Regression Discontinuity Designs (RDD) to examine the impact of policies on student outcomes.

High school admissions in Turkey follow two distinct pathways: entry into elite schools (Anatolian and science high schools) requires a standardized entrance exam developed and administered by the National Ministry of Education, while admission to non-selective general or vocational high schools requires no exam and is based solely on residential proximity. At the university level, all students regardless of which high school pathway they followed must sit standardized exams developed and administered by the Student Examination, Selection, and Placement Center, with university places allocated centrally based on achieved grades.⁶ In both cases, the standardized exams are entirely independent of in-class assessments, which are prepared and graded by individual teachers.

⁴The total cost of the project for 2003/4-2009/10 was 1,266,085,166 Turkish Lira and 767,342,133 books were provided for free. On September 1st, 2009, 1 US dollar = 1.5043 Turkish Lira.

⁵While the National Ministry of Education designs the curriculum, which is mandatory for all schools, including private institutions, teachers had the flexibility to choose different textbooks to deliver the curriculum as they saw fit. This variance in teaching materials contributed to inequalities in the learning experience, as students from lower-income backgrounds and those residing in rural areas encountered greater difficulty accessing more effective educational materials.

⁶The one exception is vocational high school graduates who wish to continue in their field at a community college, who may do so without an exam. All other community college applicants must take the same standardized exam used for university admissions.

3 Data and Descriptive Statistics

The analysis draws on the 2024 Labor Force Statistics Datasets, which employs a stratified two-stage cluster sampling design. In the first stage, blocks are selected using probability proportional to size (PPS) sampling from the National Address Database, separately for urban areas, rural areas with municipal organisation, and villages. In the second stage, households are systematically selected within each sampled block, with the household at the sampled address defined as the final sampling unit. The data includes information about all the individuals living in that address.

The resulting dataset has information from over 585,000 individuals and 195,000 households. The dataset contains rich information on individuals' personal characteristics, educational attainment, and labor market activities. Crucially for the empirical strategy, it records exact birth dates, which I use to assign individuals to treatment and control groups. On the academic side, the data capture the highest completed level of education as well as current enrollment status. For labor market outcomes, the dataset provides detailed earnings information alongside job characteristics such as contract type, occupation, and employment sector (public, private, self-employed, or employer). This richness allows me to trace the long-run effects of the free textbook reform on both educational attainment and labor market trajectories.

3.1 Descriptive Statistics

[Table 1](#) presents the results for differences in educational attainment and labor market outcomes, separately by gender for the whole sample as well as the estimation sample, i.e. the sample which I run the analysis.

[Table 1](#) indicates that females are less likely to complete all stages of employment. When we look at the estimation sample, however, we see that the differences between female and male individuals for associate degree (2 years of university) and undergraduate degree are very close to 0 and are not statistically different. The gender gap in education observed in Turkey is different from patterns typically found in high-income and upper-middle-income countries, where women often achieve higher educational levels than men ([OECD, 2015](#)). In Turkey, several factors contribute to this reversed gender gap. One significant factor is the influence of traditional gender norms. [Rankin & Aytaç \(2006\)](#) show that patriarchal family structures often discour-

Table 1: Descriptive Statistics

	All			Estimation Sample		
	All	Female	Male	All	Female	Male
Primary School	0.76 (0.43)	0.71 (0.45)	0.81*** (0.39)	0.91 (0.29)	0.87 (0.34)	0.96*** (0.20)
High School	0.32 (0.47)	0.28 (0.45)	0.35*** (0.48)	0.62 (0.49)	0.58 (0.49)	0.66*** (0.47)
Associate Degree	0.15 (0.35)	0.14 (0.34)	0.15*** (0.36)	0.36 (0.48)	0.35 (0.48)	0.37*** (0.48)
Undergraduate Degree	0.10 (0.30)	0.09 (0.29)	0.11*** (0.31)	0.27 (0.44)	0.25 (0.43)	0.29*** (0.45)
Employed	0.39 (0.49)	0.22 (0.41)	0.58*** (0.49)	0.57 (0.49)	0.34 (0.47)	0.82*** (0.38)
Not in Labor Force	0.37 (0.48)	0.51 (0.50)	0.23*** (0.42)	0.29 (0.45)	0.50 (0.50)	0.06*** (0.23)
Earnings	24875.95 (16513.07)	23110.69 (16274.48)	25781.74*** (16561.37)	28449.76 (16219.49)	27115.34 (16443.97)	29135.47*** (16060.48)
ln(Earnings)	10.03 (0.65)	9.91 (0.71)	10.09*** (0.61)	10.17 (0.57)	10.08 (0.65)	10.22*** (0.52)
High SES	0.09 (0.28)	0.06 (0.24)	0.11*** (0.31)	0.21 (0.41)	0.16 (0.37)	0.26*** (0.44)
Medium SES	0.15 (0.36)	0.11 (0.32)	0.19*** (0.39)	0.23 (0.42)	0.18 (0.38)	0.28*** (0.45)
Low SES	0.13 (0.34)	0.07 (0.25)	0.20*** (0.40)	0.22 (0.42)	0.10 (0.30)	0.36*** (0.48)
N	585923	299298	286625	39218	20219	18999

Notes: Source: Turkish Labor Statistics Dataset. Primary school graduation constitutes of 8 years of schooling, high school graduation constitutes of 3 or 4 years of schooling on the top of primary school education. Comparable sample consists of individuals who are likely to be in the sample of analysis. Stars represent the difference between male and female individuals. The differences between male and female individuals were tested using t-test. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

age girls from pursuing education beyond the compulsory level, with families prioritizing boys' schooling over girls' due to traditional beliefs about gender roles and expectations which is further extended by [Caner et al. \(2016\)](#), who show that gender roles also impact girls' education, limiting their access to higher education in favor of domestic responsibilities in Turkey. Women are expected to take on the bulk of household chores, leading to a higher opportunity cost for families when deciding to send daughters, rather than sons, to school. Thus, the traditional division of labor within families further contributes to the educational gender gap in favor of boys.

In terms of labor market outcomes, as in other countries, the females are far less likely to be employed. They also earn lower than their male counterparts. Comparing the overall sample and the estimation sample, we see that men in the estimation sample are much more likely to be

in employment than men in overall sample but the difference between females in two samples are not that different. This shows that the younger generations are much more likely to be in employment but this is mainly driven by males as opposed to females.

4 Empirical Strategy

This paper aims to analyze the impact of providing free textbooks on various outcomes, including education, marriage, fertility, and health. In a setting where free textbooks were distributed to randomly selected students, while others continued buying or borrowing them, we would have clear control and treatment groups. However, this is not the case here, as the reform was implemented nationwide simultaneously. The Turkish education system offers a useful framework for this setting, as it employs a specific cutoff date for school enrollment. According to Turkish regulations, children begin school in September of the year they turn 6, allowing researchers to use January 1st as a cutoff date for a Regression Discontinuity Design using primary school enrollment timing to evaluate the effects of policies that were implemented at once.

Using the enrollment rules, I implement a sharp RD design around the enrollment cutoff date. As primary school attendance until the age of 14 is required by law, all students who were in primary school in 2003/4 academic year received these textbooks for at least 1 year. Optimal bandwidth selection method (such as [Calonico *et al.* \(2014\)](#)) choose the bandwidth at 41 months before and after the cutoff. However, there were other reforms that might impact individuals if I choose this cutoff⁷. Given the different policies, I choose my treatment and control group as large as possible, 3 years before the reform for my control group and 2 years after the reform for my treatment group. This approach also ensures the RD design is not confounded by other reforms. In Appendix, I show the falsification tests, RD plots and results with alternative cutoffs and most of the time. The only change with different bandwidths is in the high school graduation which has a negative coefficient.

Given that students in Turkey begin school in the year they turn 6, the treatment group comprises individuals born between January 1990 and December 1991 (those who were 12-13). These individuals received free textbooks for at least one year due to the reform. In contrast,

⁷For example, using 3-year window would include individuals who have exposed to a reform in high school duration which increased high school from 3 years to 4 years, or using a 4-year window would also include individuals who were exposed to compulsory schooling reform which mandated 8 years of compulsory schooling rather than 5 years of schooling.

the control group is composed of those born between January 1988 and December 1989 (those who were 14-16) who did not benefit from the reform in primary school. However, some parents may send their children to school later than the rules state as documented in [Kirdar *et al.* \(2018\)](#). There is also evidence from the literature that late birth registrations are possible and these late registrations often result in newborns being registered as they are born in January ([Torun & Tumen, 2017](#)). For example, if a child was born in December of the previous year, they may be registered as born in January, which might also result in incorrect birth year registration. In order to deal with this ‘fuzzy’ school starting date, I exclude individuals who were born between July 1989 and June 1990 from the analysis sample.⁸ To estimate the effects of the reform, I use the following empirical specification:

$$y_i = \beta_0 + \beta_1 T_i + \beta_2 f(M) + \beta_3 \mathbf{X}_i + \epsilon_i \quad (1)$$

where y_i is the outcome variable, T_i is the exposure dummy, $f(M)$ is the functional form of running variable which is the month of birth and is re-centered around January 1990. As the bandwidth is small, use of linear function form is better than using the square distance from January 1990 as there is a risk of overfitting with quadratic functions ([Kirdar *et al.*, 2018](#)). Finally \mathbf{X}_i is the vector of controls which includes the location, how long they have been living there as well as maternal education.

5 Results

5.1 Impacts on Education Outcomes

As the reform’s primary goal is to reduce barriers to education, I first provide evidence on how free textbooks influence the academic attainment. [Table 2](#) presents the impact of ever being exposed to free textbooks, using RDD.

The results in [Table 2](#) indicate that providing free textbooks has a positive impact on high school graduation (column 3). Those exposed to the policy are 3.4ppt more likely to complete their high school education. In column 4, I present the heterogeneity of this effect by gender. Column 4 shows that the effect is mainly driven by the females. Females who are exposed to free

⁸Results are similar when these individuals are included in the analysis, which indicates that starting school later is not common enough to pose problems for the analysis.

Table 2: Impact of Free Textbooks on Academic Attainment

	Primary School		High School		Associate Degree (2-3 years)		Undergraduate Degree or Higher	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exposed	-0.010 (0.009)	-0.010 (0.009)	0.034** (0.016)	0.014 (0.017)	0.003 (0.016)	-0.012 (0.017)	-0.003 (0.015)	-0.024 (0.016)
Female	-0.096*** (0.003)	-0.096*** (0.004)	-0.085*** (0.005)	-0.099*** (0.007)	-0.031*** (0.005)	-0.042*** (0.006)	-0.036*** (0.005)	-0.050*** (0.006)
Exposed × Female		-0.000 (0.006)		0.038*** (0.011)		0.029*** (0.011)		0.041*** (0.010)
Observations	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089
Control Mean	0.91		0.60		0.33		0.24	
SD	(0.29)		(0.49)		(0.47)		(0.43)	
Female Mean		0.86		0.55		0.31		0.22
SD		(0.34)		(0.50)		(0.46)		(0.41)
Male Mean		0.95		0.65		0.35		0.27
SD		(0.21)		(0.48)		(0.48)		(0.44)
Impact on Female		-0.011 (0.010)		0.052*** (0.017)		0.017 (0.017)		0.017 (0.015)

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

textbooks are 5.2ppt more likely to complete their high school education. The effect size is strong, it is 9.5% of the mean which is a medium size effect. The effect size is also half of the gender gap in high school completion rates which shows that the reform can actually mitigate the gender gap in attainment as well. There is no impact beyond high school completion. Further analysis on the heterogeneity by exposure duration in [Appendix Table A2](#) show some suggestive evidence that 1-year exposure might have an impact on females' university graduation but beyond that, there is no heterogeneity by exposure duration.

5.2 Impacts on Labor Market Outcomes

As there is some evidence that free textbooks improved individuals, especially females, high school completion likelihood, this positive effect might translate into labor market outcomes as firms might value individuals' high school diplomas. Even if there was no measurable effects on formal educational attainment, free textbook provision may nonetheless generate meaningful improvements in labor market outcomes through skill accumulation. A growing body of evidence documents that academic (and cognitive and non-cognitive) skills developed during

schooling translate directly into labor market returns, independently of the credentials attained (Heckman *et al.*, 2006). There is also evidence that students' test scores improve when students are encouraged to use their textbooks (Falisse *et al.*, 2024).

Table 3 presents estimates of the effect of free textbook provision on labor market outcomes, with Panel A covering the full sample and Panel B restricting to the employed subsample. The full-sample results in Panel A reveal that female exposure to free textbooks significantly increases the likelihood of employment, with the gender gap in treatment effects being statistically significant. Additionally, both male and female individuals who received free textbooks are less likely to be out of the labor force, suggesting that access to free primary school textbooks has lasting effects on labor force participation more than two decades later. These findings indicate that the program's benefits extend well beyond its intended academic objectives.

Table 3: Impact of Free Textbooks on Labor Market Outcomes

	Employed		Not in LF		ln(Earnings)		High SES		Medium SES		Low SES	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>Panel A: Full Sample</i>												
Exposed	0.028* (0.015)	0.021 (0.016)	-0.036*** (0.014)	-0.037*** (0.014)	0.276 (0.168)	0.242 (0.179)	0.004 (0.014)	-0.004 (0.015)	0.019 (0.015)	0.023 (0.016)	0.011 (0.014)	0.012 (0.015)
Female	-0.490*** (0.005)	-0.495*** (0.006)	0.447*** (0.004)	0.447*** (0.005)	-3.626*** (0.055)	-3.650*** (0.069)	-0.102*** (0.005)	-0.107*** (0.006)	-0.100*** (0.005)	-0.097*** (0.006)	-0.259*** (0.005)	-0.258*** (0.006)
Exposed × Female		0.014 (0.010)		0.001 (0.009)		0.066 (0.113)		0.015 (0.009)		-0.008 (0.010)		-0.003 (0.009)
Observations	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089
Control Mean	0.58		0.28		4.59		0.20		0.23		0.23	
SD	(0.49)		(0.45)		(5.07)		(0.40)		(0.42)		(0.42)	
Female Mean		0.35		0.50		2.85		0.15		0.18		0.11
SD		(0.48)		(0.50)		(4.54)		(0.36)		(0.39)		(0.31)
Male Mean		0.83		0.05		6.43		0.26		0.28		0.36
SD		(0.37)		(0.22)		(4.95)		(0.44)		(0.45)		(0.48)
Impact on		0.035**		-0.036**		0.308*		0.011		0.015		0.009
Female		(0.016)		(0.015)		(0.175)		(0.014)		(0.015)		(0.014)
<i>Panel B: Employed Only</i>												
Exposed					0.058 (0.195)	0.054 (0.202)	-0.014 (0.021)	-0.026 (0.022)	0.006 (0.022)	0.010 (0.022)	0.008 (0.021)	0.017 (0.022)
Female					0.446*** (0.066)	0.441*** (0.083)	0.079*** (0.008)	0.066*** (0.009)	0.081*** (0.008)	0.086*** (0.010)	-0.161*** (0.007)	-0.151*** (0.009)
Exposed × Female						0.014 (0.136)		0.038** (0.016)		-0.012 (0.016)		-0.026* (0.015)
Observations					17,324	17,324	17,324	17,324	17,324	17,324	17,324	17,324
Control Mean					7.89		0.31		0.33		0.36	
SD					(4.26)		(0.46)		(0.47)		(0.48)	
Female Mean						8.24		0.37		0.39		0.24
SD						(3.90)		(0.48)		(0.49)		(0.43)
Male Mean						7.73		0.28		0.31		0.41
SD						(4.40)		(0.45)		(0.46)		(0.49)
Impact on						0.068		0.011		-0.002		-0.009
Female						(0.211)		(0.024)		(0.024)		(0.023)

Notes: Source: Turkish Labor Statistics Dataset. Panel A includes all the individuals, Panel B includes only those working. In Panel A, for ln(Earnings), 0 has been imputed for those who are not in employment. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Turning to earnings and job characteristics, the academic gains from free textbook provision may translate into broader labor market returns through improved skills, higher productivity, or access to higher-status occupations. Columns 5 through 12 examine these margins. Across both the full and employed samples, I find no significant effect on occupational socioeconomic classification. For earnings, however, there is a positive effect for females in the full sample by 6.8% of the control group standard deviation, though the difference relative to males is not statistically significant. Notably, this positive earnings effect dissipates in Panel B, suggesting that the full-sample result is largely driven by the extensive margin, that is, by individuals who entered employment as a result of free textbook provision, rather than by wage gains among those already employed. Further analysis on the heterogeneity by exposure duration in [Appendix Table A3](#) and [Appendix Table A4](#) show no heterogeneity by exposure duration in the impacts of being employed and being in labor force as the confidence intervals for the 1-year and 2-year exposure coefficients overlap.

6 Additional Analysis and Robustness Checks

6.1 Pre-Trends and Placebo Checks

A potential concern when using an RDD approach that use school enrollment cutoffs as the threshold is the presence of time trends in the outcome variables. If such trends exist and they are in the same direction as the impacts, they could mistakenly be interpreted as effects of the reform rather than just natural changes over time or if these trends are in the opposite direction of the anticipated effects of the reforms, the results might show no impact while the impacts would indeed exist.

To further analyze, I conduct a placebo experiment by setting the reform cutoff date to two years before the actual reform. This way, both the "placebo treatment" and "placebo control" groups consist of individuals who were unaffected by the reform. By doing this, I can examine whether any trends are present and, if so, whether they are strong enough to produce false significant results in my analysis. The results of the placebo policy experiment are presented in [Appendix Table A5](#) through [Appendix Table A7](#). The tables show no trends in the labor market outcomes and some negative trends in the educational attainment outcomes which might

underestimate the results. This shows that the results are not driven by the pre-trends.

6.2 Choice of Bandwidth

Bandwidth selection is a crucial aspect of any RD design, as it influences the reliability and precision of the estimated effects. Narrower bandwidths typically produce more credible estimates by focusing on individuals closer to the cutoff, but they also reduce the number of observations, especially when working with survey data rather than administrative records. Since this paper employs a sharp RD design, it is important to assess the sensitivity of the results to different bandwidth choices.

The results obtained from the analysis using alternative bandwidth sizes (3-, 4-, 5-, and 8-year) are reported in [Appendix Table A8](#). This table indicates that there are minor differences between the results obtained with these alternative bandwidths and the main results.⁹ Overall, these results suggest that while there are minor differences in the coefficients regarding the impact of free textbooks on long-term outcomes, most of the differences are not statistically significant. Where significant variations do exist, the effects remain consistent in the results derived from the smaller bandwidth analysis, reinforcing the robustness of the findings.

7 Conclusion

Educational attainment is significantly shaped by the quality and accessibility of resources, whether provided by parents or schools. This study analyzes the effects of a reform implemented in 2003/4 in Turkey, where free textbooks were provided to all primary school students. Leveraging representative survey data, I implement a sharp regression discontinuity design with a donut hole setting around the enrollment date. The findings reveal that the reform positively impacts individuals' high school completion and their labor market outcomes, especially those of females.

The results have important policy implications, highlighting the potential of interventions that address educational barriers. The results show the substantial and far-reaching impacts achievable through relatively low-cost government interventions. With a cost of \$1.1 per book for the government as opposed to \$5 per book when bought privately, the reform led to low-

⁹Significant changes in high school completion are due to the 1997 reform that extended compulsory schooling to 8 years.

cost impacts in the long-term outcomes of the individuals. By strategically targeting constraints that hinder access to education, policymakers have the potential to bring about positive, lasting changes in individuals' lives. In particular, the findings suggest that addressing financial and resource-related barriers can contribute to individuals' long-term outcomes. As governments consider strategies to promote equal access to education, this study provides valuable insights into the multifaceted and enduring benefits that well-targeted low-cost interventions can yield.

In today's world, persistent challenges exist for certain students who struggle with limited access to crucial study materials and resources essential for academic success. This research emphasizes the critical need for governments to increase their investments in education. To promote the long-term prospects of the upcoming generation, targeted efforts are required to mitigate barriers hindering access to educational resources. By addressing these challenges, governments can pave the way for improved outcomes and brighter future outcomes for individuals across the spectrum.

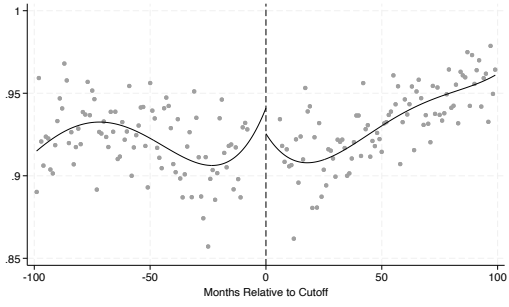
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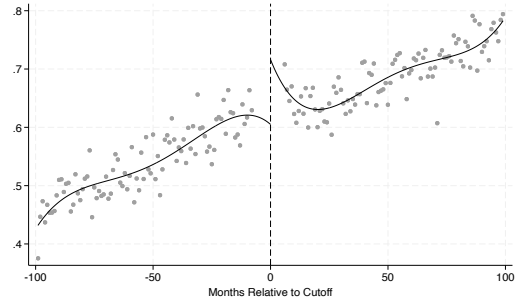
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Online Appendix

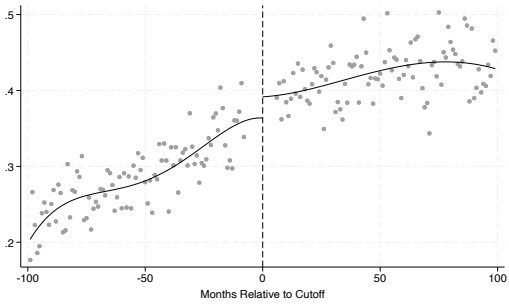
Figure A1: RD Plots



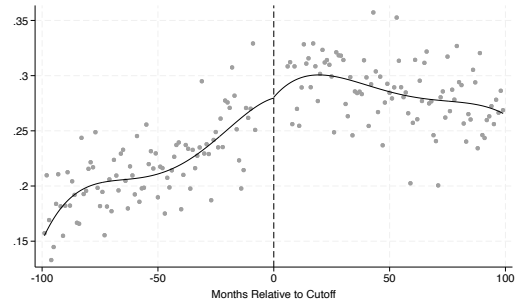
(a) Primary School



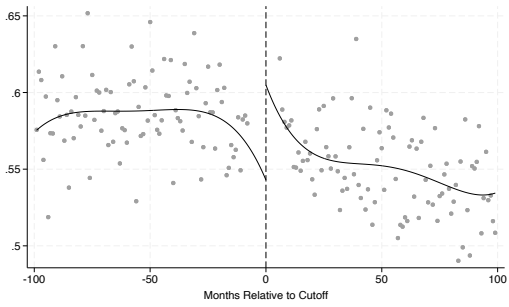
(b) High School



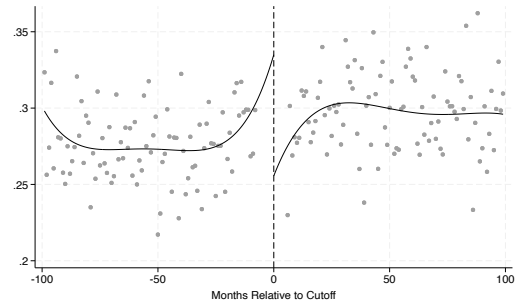
(c) Associate Degree



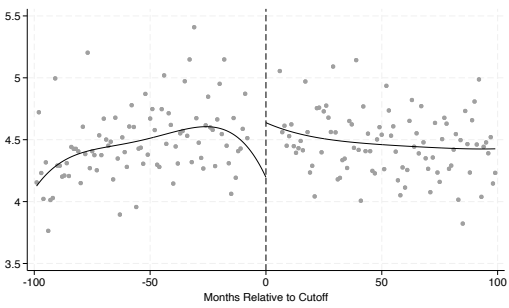
(d) University Degree



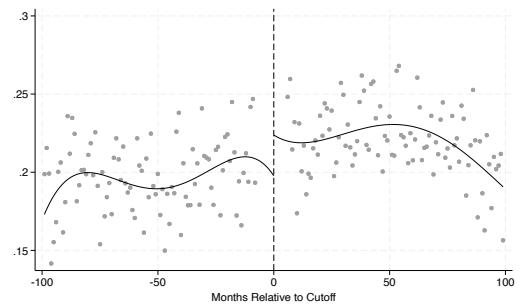
(e) Employed



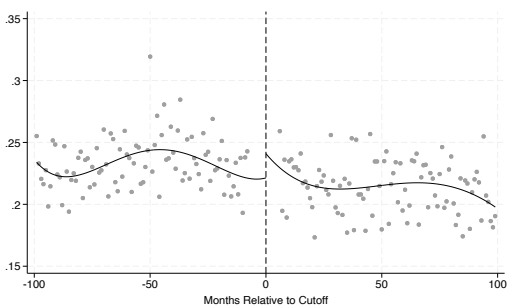
(f) Not in Labor Force



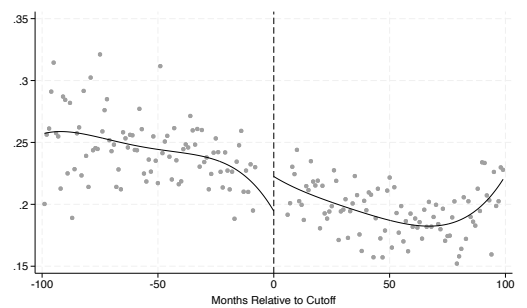
(g) Earnings



(h) High SES



(i) Medium SES



(j) Low SES

Table A1: Falsification Tests

	Primary School		High School		Associate Degree (2-3 years)		Undergraduate Degree or Higher		Years in the City	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exposed	0.006 (0.011)	0.012 (0.012)	0.006 (0.005)	0.007 (0.005)	0.001 (0.002)	0.001 (0.003)	0.003 (0.002)	0.003 (0.002)	-0.540 (0.417)	-0.697 (0.443)
Female	-0.059*** (0.003)	-0.055*** (0.004)	-0.005*** (0.001)	-0.005*** (0.002)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.112 (0.138)	-0.224 (0.179)
Exposed × Female		-0.013* (0.007)		-0.002 (0.003)		-0.001 (0.002)		0.000 (0.001)		0.301 (0.280)
Observations	30,412	30,412	30,412	30,412	30,412	30,412	30,412	30,412	14,741	14,741

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A2: Heterogeneity of Impacts by Exposure Duration - Educational Attainment

	Primary School		High School		Associate Degree (2-3 years)		Undergraduate Degree or Higher	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1-year	-0.015 (0.010)	-0.013 (0.010)	0.038** (0.017)	0.027 (0.019)	0.008 (0.017)	-0.022 (0.019)	0.005 (0.016)	-0.034* (0.018)
2-year	-0.028* (0.017)	-0.029* (0.017)	0.047* (0.027)	0.023 (0.028)	0.019 (0.027)	0.010 (0.028)	0.026 (0.025)	0.013 (0.026)
Female	-0.096*** (0.003)	-0.096*** (0.004)	-0.085*** (0.005)	-0.099*** (0.007)	-0.031*** (0.005)	-0.042*** (0.006)	-0.036*** (0.005)	-0.050*** (0.006)
1-year × Female		-0.004 (0.010)		0.020 (0.017)		0.056*** (0.017)		0.075*** (0.015)
2-year × Female		0.001 (0.007)		0.046*** (0.013)		0.017 (0.012)		0.025** (0.011)
Observations	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089
Control Mean	0.91		0.60		0.33		0.24	
SD	(0.29)		(0.49)		(0.47)		(0.43)	

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A3: Heterogeneity of Impacts by Exposure Duration - Labor Market Outcomes

	Employed		Not in LF		ln(Earnings)		High SES		Medium Ses		Low SES	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1-year	0.018 (0.016)	-0.003 (0.017)	-0.029** (0.015)	-0.016 (0.014)	0.245 (0.178)	-0.005 (0.203)	-0.010 (0.015)	-0.008 (0.017)	0.026* (0.016)	0.010 (0.018)	0.010 (0.014)	0.009 (0.017)
2-year	-0.008 (0.026)	-0.009 (0.026)	-0.010 (0.023)	-0.016 (0.023)	0.165 (0.278)	0.229 (0.288)	-0.048** (0.023)	-0.060** (0.024)	0.045* (0.025)	0.059** (0.025)	0.009 (0.022)	0.012 (0.023)
Female	-0.490*** (0.005)	-0.495*** (0.006)	0.447*** (0.004)	0.447*** (0.005)	-3.626*** (0.055)	-3.651*** (0.069)	-0.102*** (0.005)	-0.107*** (0.006)	-0.100*** (0.005)	-0.097*** (0.006)	-0.259*** (0.005)	-0.258*** (0.006)
1-year × Female		0.040** (0.016)		-0.025* (0.014)		0.483*** (0.177)		-0.005 (0.015)		0.031** (0.015)		0.003 (0.014)
2-year × Female		0.001 (0.012)		0.013 (0.010)		-0.126 (0.127)		0.024** (0.011)		-0.027** (0.011)		-0.005 (0.011)
Observations	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089	30,089
Control Mean	0.58		0.28		4.59		0.20		0.23		0.23	
SD	(0.49)		(0.45)		(5.07)		(0.40)		(0.42)		(0.42)	

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A4: Heterogeneity of Impacts by Exposure Duration - Labor Market Outcomes (for Employed)

	ln(Earnings)		High SES		Medium Ses		Low SES	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1-year	0.132 (0.208)	0.044 (0.224)	-0.034 (0.022)	-0.022 (0.024)	0.028 (0.023)	0.015 (0.024)	0.006 (0.022)	0.007 (0.024)
2-year	0.320 (0.329)	0.352 (0.331)	-0.084** (0.035)	-0.106*** (0.036)	0.085** (0.037)	0.096** (0.038)	-0.001 (0.035)	0.010 (0.036)
Female	0.446*** (0.066)	0.441*** (0.083)	0.079*** (0.008)	0.066*** (0.009)	0.082*** (0.008)	0.086*** (0.010)	-0.161*** (0.007)	-0.151*** (0.009)
1-year × Female		0.268 (0.207)		-0.034 (0.024)		0.040 (0.025)		-0.006 (0.022)
2-year × Female		-0.111 (0.156)		0.074*** (0.018)		-0.038** (0.019)		-0.036** (0.016)
Observations	17,324	17,324	17,324	17,324	17,324	17,324	17,324	17,324
Control Mean	7.89		0.31		0.33		0.36	
SD	(4.26)		(0.46)		(0.47)		(0.48)	

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A5: Pre-Trend Checks on Academic Outcomes

	Primary School		High School		Associate Degree (2-3 years)		Undergraduate Degree or Higher	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Placebo	-0.049*** (0.014)	-0.053*** (0.014)	-0.086*** (0.022)	-0.084*** (0.023)	-0.032 (0.022)	-0.035 (0.023)	0.016 (0.021)	0.011 (0.022)
Female	-0.088*** (0.004)	-0.092*** (0.005)	-0.068*** (0.006)	-0.065*** (0.009)	-0.004 (0.006)	-0.006 (0.009)	-0.001 (0.006)	-0.006 (0.008)
Placebo × Female		0.008 (0.007)		-0.005 (0.012)		0.005 (0.012)		0.009 (0.011)
Observations	21,611	21,611	21,611	21,611	21,611	21,611	21,611	21,611
Impact on Female		-0.045*** (0.015)		-0.088*** (0.023)		-0.030 (0.023)		0.020 (0.021)

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A6: Pre-Trend Checks on Labor Market Outcomes

	Employed		Not in LF		ln(Earnings)		High SES		Medium Ses		Low SES	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Placebo	-0.005 (0.021)	-0.008 (0.021)	0.013 (0.019)	0.013 (0.019)	0.184 (0.228)	0.283 (0.238)	-0.013 (0.019)	-0.003 (0.020)	0.008 (0.020)	0.006 (0.021)	-0.011 (0.018)	-0.015 (0.020)
Female	-0.484*** (0.006)	-0.487*** (0.008)	0.444*** (0.005)	0.443*** (0.007)	-3.501*** (0.066)	-3.401*** (0.093)	-0.107*** (0.006)	-0.097*** (0.008)	-0.090*** (0.006)	-0.093*** (0.008)	-0.262*** (0.005)	-0.266*** (0.008)
Placebo × Female		0.006 (0.012)		0.002 (0.010)		-0.199 (0.129)		-0.020* (0.011)		0.005 (0.011)		0.007 (0.011)
Observations	21,611	21,611	21,610	21,610	21,611	21,611	21,611	21,611	21,611	21,611	21,611	21,611
Impact on Female		-0.002 (0.022)		0.014 (0.021)		0.084 (0.235)		-0.023 (0.020)		0.011 (0.021)		-0.007 (0.018)

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A7: Pre-Trend Checks on Labor Market Outcomes (for Employed)

	ln(Earnings)		High SES		Medium Ses		Low SES	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Placebo	0.464*	0.527*	-0.019	-0.021	0.018	0.015	0.001	0.007
	(0.264)	(0.269)	(0.030)	(0.030)	(0.030)	(0.031)	(0.029)	(0.029)
Female	0.711***	0.826***	0.099***	0.095***	0.088***	0.081***	-0.186***	-0.176***
	(0.075)	(0.108)	(0.009)	(0.013)	(0.009)	(0.013)	(0.008)	(0.012)
Placebo × Female		-0.230		0.007		0.013		-0.021
		(0.150)		(0.018)		(0.019)		(0.016)
Observations	12,181	12,181	12,181	12,181	12,181	12,181	12,181	12,181
Impact on		0.297		-0.014		0.028		-0.014
Female		(0.279)		(0.033)		(0.033)		(0.031)

Notes: Source: Turkish Labor Statistics Dataset. Odd columns present the impacts on all individuals while even columns present heterogeneity analysis. Mean and standard deviation are for control groups (all, female, male). All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-side specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Table A8: Alternative Bandwidth on Academic Outcomes

	3-Year			4-Year		5-Year		8-Year	
	Main	Alternative	Difference	Alternative	Difference	Alternative	Difference	Alternative	Difference
Primary Schhol									
All	-0.010 (0.009)	-0.007 (0.007)	-0.003 (0.006)	0.000 (0.006)	-0.011 (0.007)	-0.001 (0.005)	-0.010 (0.008)	-0.006* (0.003)	-0.004 (0.009)
For Females	-0.011 (0.010)	-0.004 (0.008)	-0.006 (0.006)	0.004 (0.007)	-0.014* (0.007)	0.002 (0.006)	-0.013 (0.008)	0.004 (0.004)	-0.015 (0.009)
For Males	-0.010 (0.009)	-0.011 (0.007)	0.000 (0.006)	-0.004 (0.006)	-0.006 (0.008)	-0.004 (0.005)	-0.006 (0.008)	-0.017*** (0.003)	0.007 (0.009)
High School									
All	0.034** (0.016)	-0.000 (0.013)	0.034*** (0.010)	-0.016 (0.010)	0.050*** (0.013)	-0.027*** (0.008)	0.061*** (0.014)	-0.024*** (0.006)	0.057*** (0.015)
For Females	0.052*** (0.017)	0.018 (0.014)	0.034*** (0.010)	0.004 (0.011)	0.048*** (0.013)	0.002 (0.009)	0.050*** (0.014)	0.018*** (0.007)	0.034** (0.016)
For Males	0.014 (0.017)	-0.020 (0.014)	0.034*** (0.010)	-0.038*** (0.011)	0.052*** (0.013)	-0.059*** (0.009)	0.073*** (0.015)	-0.067*** (0.007)	0.081*** (0.016)
Associate Degree									
All	0.003 (0.016)	0.012 (0.012)	-0.009 (0.010)	0.010 (0.010)	-0.007 (0.013)	0.012 (0.008)	-0.009 (0.014)	0.033*** (0.006)	-0.030** (0.015)
For Females	0.017 (0.017)	0.029** (0.013)	-0.012 (0.010)	0.032*** (0.010)	-0.015 (0.013)	0.040*** (0.009)	-0.023 (0.014)	0.078*** (0.006)	-0.061*** (0.015)
For Males	-0.012 (0.017)	-0.007 (0.013)	-0.005 (0.010)	-0.013 (0.010)	0.001 (0.013)	-0.017* (0.009)	0.005 (0.014)	-0.014** (0.006)	0.002 (0.015)
Undergraduate Degree									
All	-0.003 (0.015)	0.011 (0.011)	-0.014 (0.009)	0.018** (0.009)	-0.020* (0.012)	0.028*** (0.007)	-0.031** (0.013)	0.038*** (0.005)	-0.040*** (0.014)
For Females	0.017 (0.015)	0.034*** (0.012)	-0.017* (0.009)	0.041*** (0.009)	-0.024** (0.012)	0.056*** (0.008)	-0.039*** (0.013)	0.079*** (0.006)	-0.062*** (0.014)
For Males	-0.024 (0.016)	-0.012 (0.012)	-0.011 (0.009)	-0.007 (0.010)	-0.016 (0.012)	-0.002 (0.008)	-0.021 (0.013)	-0.005 (0.006)	-0.018 (0.014)
Employed									
All	0.028* (0.015)	0.017 (0.012)	0.011 (0.009)	0.003 (0.009)	0.025** (0.012)	-0.000 (0.008)	0.028** (0.013)	-0.010* (0.006)	0.038*** (0.014)
For Females	0.035** (0.016)	0.019 (0.013)	0.016* (0.009)	0.005 (0.010)	0.029** (0.012)	0.004 (0.009)	0.030** (0.013)	0.006 (0.006)	0.029* (0.015)
For Males	0.021 (0.016)	0.016 (0.012)	0.005 (0.010)	-0.000 (0.010)	0.021* (0.013)	-0.005 (0.008)	0.026* (0.014)	-0.027*** (0.006)	0.048*** (0.015)
Not in Labor Force									
All	-0.036*** (0.014)	-0.027** (0.011)	-0.010 (0.008)	-0.009 (0.008)	-0.027** (0.011)	-0.002 (0.007)	-0.035*** (0.012)	0.012** (0.005)	-0.049*** (0.013)
For Females	-0.036** (0.015)	-0.024* (0.012)	-0.012 (0.008)	-0.004 (0.010)	-0.032*** (0.011)	0.004 (0.008)	-0.040*** (0.012)	0.010* (0.006)	-0.046*** (0.013)
For Males	-0.037*** (0.014)	-0.030*** (0.011)	-0.007 (0.009)	-0.014* (0.008)	-0.022* (0.012)	-0.009 (0.007)	-0.028** (0.013)	0.015*** (0.005)	-0.052*** (0.013)
Ln(Earnings)									
All	0.276 (0.168)	0.194 (0.131)	0.082 (0.102)	0.030 (0.102)	0.246* (0.132)	-0.002 (0.086)	0.277* (0.143)	-0.136** (0.062)	0.412*** (0.155)
For Females	0.308* (0.175)	0.187 (0.138)	0.121 (0.107)	0.008 (0.108)	0.300** (0.138)	-0.018 (0.091)	0.326** (0.150)	-0.129* (0.067)	0.437*** (0.162)
For Males	0.242 (0.179)	0.201 (0.142)	0.041 (0.105)	0.054 (0.112)	0.188 (0.137)	0.016 (0.095)	0.226 (0.150)	-0.144** (0.069)	0.386** (0.164)
High SES									
All	0.004 (0.014)	-0.003 (0.011)	0.007 (0.009)	-0.008 (0.008)	0.013 (0.011)	0.000 (0.007)	0.004 (0.012)	0.018*** (0.005)	-0.014 (0.013)
For Females	0.011 (0.014)	0.002 (0.011)	0.009 (0.009)	-0.006 (0.009)	0.017 (0.012)	0.001 (0.007)	0.010 (0.013)	0.029*** (0.005)	-0.018 (0.013)
For Males	-0.004 (0.015)	-0.008 (0.012)	0.004 (0.009)	-0.011 (0.009)	0.008 (0.012)	-0.000 (0.008)	-0.003 (0.013)	0.007 (0.006)	-0.011 (0.014)
Medium SES									
All	0.019 (0.015)	0.010 (0.012)	0.009 (0.009)	0.009 (0.009)	0.010 (0.011)	-0.002 (0.008)	0.021* (0.012)	-0.015*** (0.005)	0.034** (0.013)
For Females	0.015 (0.015)	0.007 (0.012)	0.008 (0.009)	0.006 (0.009)	0.009 (0.012)	-0.001 (0.008)	0.016 (0.013)	-0.012** (0.006)	0.026* (0.014)
For Males	0.023 (0.016)	0.014 (0.013)	0.009 (0.009)	0.012 (0.010)	0.011 (0.012)	-0.003 (0.008)	0.027** (0.013)	-0.020*** (0.006)	0.043*** (0.014)
Low SES									
All	0.011 (0.014)	0.015 (0.011)	-0.004 (0.008)	0.003 (0.008)	0.008 (0.011)	-0.001 (0.007)	0.012 (0.012)	-0.013** (0.005)	0.024* (0.013)
For Females	0.009 (0.014)	0.011 (0.011)	-0.001 (0.009)	-0.001 (0.008)	0.011 (0.011)	-0.009 (0.007)	0.018 (0.012)	-0.027*** (0.005)	0.036*** (0.013)
For Males	0.012 (0.015)	0.020 (0.012)	-0.007 (0.008)	0.008 (0.010)	0.004 (0.011)	0.007 (0.008)	0.006 (0.012)	0.002 (0.006)	0.011 (0.013)
N	30,089	37,351		53,000		68,335		114,311	
N (Female)	15,541	19,357		27,546		35,479		59,621	
N (Male)	14,548	17,994		25,454		32,856		54,690	

Notes: Source: Turkish Labor Statistics Dataset. Column 1 present the main results. From column 2 onward, the first of each column group presents the results with the alternative bandwidth and the second column shows the difference between the main results and the results with alternative bandwidth. For the differences, stars shows the significance as in coefficients. All regressions control for maternal education, location and how long the individuals have lived there in addition to the cutoff-specific running variables. Heteroskedasticity-robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01