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Removing cultural barriers to education: State-run religious schools and girls' education in Türkiye

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ABSTRACT

This paper studies the impact of access to state-run religious schools on girls' outcomes in Türkiye. These schools, offering religious instruction and a conservative school environment, became accessible to girls following a 1976 court ruling. Exploiting variation in exposure to religious schools across district centers and cohorts, I find that access increased secondary school completion among girls—with more pronounced effects observed in conservative areas—while having negligible effects on boys. Treated women later had lower fertility and higher labor force participation. The findings show that removing cultural barriers to education can promote schooling and public life integration for culturally marginalized groups.

JEL Classification: I24, I25, J13, J16, J22, Z12

Keywords: Culture, Religion, Education, Women's Empowerment, Islam

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1 Introduction

During the age of secular mass schooling, the world has experienced a substantial increase in educational participation. However, progress in low-income and developing countries lags significantly behind that in the developed world, and the gender gap in education persists (UNESCO, 2015). Women in developing countries often leave school after primary education, marry, and give birth at a young age. Addressing such behaviors associated with adverse outcomes is therefore essential for women's empowerment and economic development (Duflo, 2012; Doepke et al., 2012). Policies increasing education at large and keeping women in school, in particular, are central issues of economic and policy interest.

While a vast number of empirical studies evaluate the impact of various education policy interventions, we have limited knowledge about how cultural constraints embedded in educational institutions affect households' decisions on participation in education.[1] Besides its vital role in developing human capital, which benefits individuals in the labor market, education is a way to impart cultural identities and norms through institutions (Alesina et al., 2021; Ansell and Lindvall, 2013; Bandiera et al., 2019; Cantoni et al., 2017). At the same time, parents seek to transmit their own cultural and religious traits to their offspring (Bisin and Verdier, 2000, 2001). A growing body of theoretical literature shows that parents may resist education by keeping their children out of schools when the cultural identity promulgated by educational institutions differs from their own (Akerlof and Kranton, 2000, 2002; Carvalho et al., 2024). Policies mitigating culture-related barriers by making educational institutions more inclusive toward culturally excluded groups may reverse this backlash and lead to an increase in educational attainment in such cases. However, to date, no causal empirical studies have shown whether such policies can effectively increase educational participation and keep women in school.

This paper explores the consequences of popular efforts in Türkiye to make

[1] See Evans and Yuan (2019) and Evans and Mendez Acosta (2021) for recent surveys on interventions related to girls' education.

state-run, secondary-level "Imam Hatip" religious schools (Islamic schools henceforth) available as an alternative to secular schools in the 1970s. In practice, this policy change removed several religion-based barriers that stemmed from the strictly secular nature of the Turkish education system and created an education system that was inclusive toward religious conservatives. I find that access to Islamic schools had an empowering effect for women by keeping girls from religious families within the school system and incorporating them into public life.

The setting of 1970s Türkiye proves ideal for exploring this question since—with its strictly secular institutions and remarkably religious population—it represents a unique example among Muslim countries. This paradox may have created direct and indirect culture-related barriers to children's educational participation among conservative families. In addition, the voluntary nature of attendance in education after primary school during this period enabled parents to keep their children out of secondary schools in such cases. Access to Islamic schools eliminated several cultural barriers, such as lack of religious instruction, a non-conservative school environment, coeducation, and the headscarf ban for female students. Importantly, Islamic school curricula had similar levels of instruction hours in secular core subjects as secular school curricula.

Religious schooling was reintroduced in 1950 when the government reopened secondary-level modern Islamic schools—which had been shut down during the top-down secularization effort of the 1920s—as vocational schools. However, these schools were primarily located in province capitals (administrative centers of first-level subdivisions) and were available only to men. Between 1974 and 1977, the Islamic school network expanded into district centers (administrative centers of second-level subdivisions) due to bottom-up community efforts. As a result, the number of Islamic schools increased from 71 to 350 in a short period. Female students only achieved the legal right to attend Islamic schools in 1977 after a Council of State ruling. Surprisingly, the decision to make Islamic schools available to women came from this highly secular Turkish judicial institution.

To empirically assess the impacts of access to Islamic schools, I use a dataset

compiled by Benzer and Tukiainen (2025) that includes the locations and founding years of Islamic schools established by 1980, which I combine with a nationally representative 5% microsample of the 1990 population census. Then, I employ a difference-in-differences strategy by relying on variation both within cohorts (comparing district centers with and without an Islamic school) and within district centers (comparing cohorts who came of secondary school age after access to Islamic schools became available with older cohorts).

I find that access to Islamic schools increased the likelihood of attaining a lower secondary degree for exposed female cohorts by 2.1 p.p. (s.e.=0.8 p.p.), corresponding to a relative increase of 6%. The effect of treatment was small in both absolute and relative terms for exposed male cohorts, with a statistically nonsignificant increase of 0.9 p.p. (s.e.= 0.6 p.p.), corresponding to a relative increase of 2%. The treatment also increased the likelihood of having an upper secondary degree among women by 1.8 p.p. (s.e.= 0.5 p.p.), corresponding to a relative increase of 8%. The likelihood of having a primary school degree among both genders was unaffected, as expected since Islamic schools operated only at the secondary level. Examining official annual school enrollment data at the national level, I show that Islamic school enrollments were the driving force behind the accelerating growth in total lower secondary schooling during this period. A back-of-an-envelope calculation suggests that while 75 to 90 percent of girls who attended Islamic schools would not continue their secondary education in the absence of Islamic schools, this number was only 10 percent for boys.

Next, I examine how access to Islamic schools affected the early adulthood fertility outcomes of exposed female cohorts. First, I find that exposed female cohorts display lower numbers of births, even though the probability of ever giving birth remains unaffected. Second, I present evidence that this reduction is mainly a result of these cohorts staying in education. I argue that affected women who remained in schooling due to access to Islamic schools—who otherwise would have married at a young age and given birth to their first child as teen mothers—postponed their first pregnancy. To support this argument, I show that the decline in fertility is primarily driven by a reduced likelihood of having second

or third births during early adulthood (ages 18–25), when such births typically occur in this context. Therefore, the decline in women's fertility is not explained by increased childlessness, which would occur earlier in life, nor by a reduction in very high-parity births, which typically occur later.

I further explore whether access to Islamic schools impacted women's labor market outcomes during early adulthood. Although around one-third of the Islamic schools' curriculum contains religious content at the upper secondary level, Islamic schools had one extra year of schooling to compensate for this. Such exposure to secular secondary school content at a level similar to that of secular schools and having a secondary school degree in a population with low levels of education may have benefited women in the labor market, as the outside option was no secondary education. Consistent with this argument, I find that exposed female cohorts were more likely to participate in the labor market and to have worked in the week prior to the census.

Finally, I present empirical evidence that challenges a simple school-supply interpretation of the observed increase in girls' schooling and offers stronger support for a cultural explanation. In particular, I find that the impact of Islamic school access on girls' schooling was more pronounced in conservative areas, where cultural barriers to secular schooling were particularly strong and restrictive. This is consistent with theoretical models of cultural resistance, which predict that families may withdraw their children from education when institutional norms conflict with their cultural or religious values, with dropout rates being higher in more conservative areas (Carvalho et al., 2024). Notably, I do not find similar patterns for boys, as the effect of Islamic schools did not vary by the conservativeness of district centers. These findings reveal that cultural barriers were more binding for girls. By offering a culturally compatible alternative, Islamic schools effectively mitigated these barriers, enabling conservative parents to keep their daughters in school. In addition, I find that an earlier expansion of secular school supply failed to generate increases in female educational attainment, further underscoring the centrality of cultural channel in driving my findings. These results suggest that cultural alignment, rather than the mere availability

of schools, was critical for fostering educational participation among culturally marginalized groups, particularly girls from conservative families in the Turkish context. Thus, by relaxing exclusionary secular institutions that had barred religion from the public sphere, the policy inadvertently advanced a founding goal of Türkiye's secularization project—women's empowerment.

This paper contributes to several strands of the literature. It first relates to the literature on educational policies and cultural backlash. A body of theoretical works suggest that institutional policies targeted toward assimilating minorities with marginalized identities can lead to a backlash and result in resistance to education (Carvalho et al., 2024; Akerlof and Kranton, 2002).[2] Prior empirical studies primarily focus on assimilationist educational policies and their impact on identity or schooling due to cultural backlash (Abdelgadir and Fouka, 2020; Bazzi et al., 2020; Fouka, 2020; Sakalli, 2019). This paper is, to my knowledge, the first to isolate a specific policy change and provide empirical evidence that culturally inclusive policies may reverse such a cultural backlash and increase the education levels of culturally marginalized communities.

This study also relates to the literature on the roots of educational inequality. In particular, it is related to the literature on social norms and the origins of gender and religious inequality in educational participation in developing contexts (Alesina et al., 2023; Jayachandran, 2015). Examining the unification of traditional and modern education systems in Egypt, Saleh (2016) shows that public policies may play a role in mitigating inter-religious educational inequalities. I contribute to this literature by showing that providing culturally inclusive educational institutions may decrease educational inequalities affecting marginalized groups when the interaction between exclusionary institutions and social norms acts as a source of these inequalities. Therefore, I provide evidence that inclusive changes to schooling that take into account cultural sensitivities can mitigate gender inequality in education by cultural or religious background.

This paper also contributes to the literature studying the impacts of edu-

[2] Apart from education, Carvalho (2013) further shows that headscarf bans, in particular, can inhibit social integration among pious women and increase their religiosity.

cational policy interventions on outcomes related to women's empowerment in developing countries (Duflo, 2012; Doepke et al., 2012; Jayachandran, 2021). Specifically, it is related to the literature on creating a safer schooling experience for female students by adjusting educational institutions' infrastructure or characteristics (Adukia, 2017; Bandiera et al., 2020; Burde and Linden, 2013; Kazianga et al., 2013; Kim et al., 1999; Muralidharan and Prakash, 2017). I add to this literature by showing that providing a culturally safer school environment that eliminates religion-based barriers to education can increase girls' schooling and lead to women's empowerment in a conservative and low-income context where girls' participation in secondary education is strikingly low. In this literature, my paper is the first to study the causal link between modern Islamic schools and the outcomes related to women's empowerment.[3]

Finally, this paper relates a broader literature on the role of culture in economic development (Alesina and Giuliano, 2015; Barro and McCleary, 2003; Guiso et al., 2006; Tabellini, 2010). In particular, it refers to those studies examining the relationship between religion and education (Becker and Woessmann, 2008, 2009; Boppart et al., 2013; Meyersson, 2014; Palma and Reis, 2021).[4] Examining Catholicism in France during the Second Industrial Revolution, Squicciarini (2020) shows that religiosity can hamper economic development through religious schooling. In the same French context, Franck and Johnson (2016) further show that while greater public spending on secular education did not affect Catholic school enrollment, compulsory education laws negatively affected it. Bazzi et al. (2020) explore the consequences of competition between state and religious sectors as providers of education in Indonesia. I contribute to this literature by showing that the interaction between religion as an informal institution and education systems as a formal institution can play a vital role in parents' decisions related to human

[3]Descriptively, Asadullah and Maliki (2018) show that girls are more likely to attend a traditional madrasah than boys in the Indonesian context, and Asadullah and Chaudhury (2009) suggest that Islamic schools might have played a role in decreasing gender gap in education in the Bangladeshi context.

[4]See Iannaccone (1998) and Iyer (2016) for surveys of the economics of religion. See Kuran (2018) for a survey specific to Islam.

capital investment, especially for daughters. I show that when the outside option is resistance to status-quo educational institutions, state-run religious schooling may effectively integrate girls from religious families into public life and lead to economic development driven by women's empowerment. One article related to mine is Meyersson (2014), which focuses on political institutions' effect on women's empowerment in Türkiye.[5] Meyersson (2014) documents the positive impact of Islamic mayors in Türkiye on girls' secular upper secondary school participation by using a regression discontinuity (RD) design based on the 1994 elections. He acknowledges that Turkish secular educational institutions impose several barriers to entry into education among religious women, including coeducation, a secular curriculum, and a headscarf ban. His explanation of the increase in secular schooling for women is that Islamic mayors effectively circumvent the previously mentioned and still-prevailing barriers to secular education. My paper adds to previous findings by disentangling the role of participation constraints in education by directly focusing on a specific educational policy change that removed these cultural barriers and led to an increase in religious schooling.[6] Therefore, I show that culturally inclusive designs of public education systems can be effective in keeping girls in schooling regardless of the characteristics of the local political leadership. A related study in this regard is Palma and Reis (2021), where the authors show that males were more likely to be literate under an autocratic regime relative to a democratic one in Portugal and argue that the cultural alignment of the education system was an essential factor in the authoritarian regime's success.

[5] In a similar empirical setting to Meyersson (2014), Corekcioglu (2021) disentangles one of the potential mechanisms behind the impact of local Islamist political rule on women's empowerment and finds that repealing the headscarf ban increased women's employment in Islamist municipalities in Türkiye. In contrast, this paper examines a policy change in education system, a pivotal institution that bears crucial importance and relevance for economic development.

[6] Examining the same intervention, Benzer and Tukiainen (2025) find that the expansion of religious schooling also shaped long-term political behavior by fostering male-dominated Islamist youth organizations, which in turn mobilized support for Islamist parties.

2 Historical and Institutional Background

2.1 History of Secular Education in Türkiye

After the fall of the Ottoman Empire, the founders of the new Turkish republic, led by Mustafa Kemal Atatürk, initiated broad-scale reforms in various fields to secularize and modernize the country's institutions. Education was one of the most crucial domains of the reform movement. Its first step was to instill the secular and nationalist values of the new republic in younger generations (Kaplan, 2006). This effort was also an efficient way to curb religious identities held over from the Ottoman Empire. Under this government program, the intent was to "adopt western civilization as a whole including western secular culture, to improve the nation to the contemporary western level, and avoid the superstition, mystical feelings, scholastic ideas, and out-of-date principles of life, adopting positivism" (Zaim, 1987, p.501).

To achieve its secularization goals, the government implemented several radical and top-down reforms in education during the 1920s. Some of these reforms directly targeted a decrease in the role of religion in education. The 1924 Unification of Education Law (Tehvid-i Tedrisat) abolished all traditional Islamic education institutions, including *medreses*, and unified all educational instruction under the Ministry of Education. Even though the law allowed a few numbers of Imam and Preacher (Imam Hatip) training schools to operate, these schools eventually shut down in 1930. The Arabic alphabet that had been used under the Ottoman Empire was replaced with the Latin alphabet. Religion courses were removed from the curriculum of lower secondary schools in 1927 and upper secondary schools in 1924. Religious instruction was nonexistent in Türkiye until a freshly elected conservative government reintroduced Islamic schools in 1950.

2.2 The Rise of Islamic Schools and the 1976 Council of State Ruling

After the re-establishment of Islamic schools in 1950, these schools experienced a period of ups and downs until 1973. This instability was mainly due to the involvement of the secular army in politics. The number of Islamic schools opened by the state remained modest, and most of them were located only in district centers that are also province capitals. Due to the reluctance of governments to open Islamic schools in relatively less populated district centers, communities started to form charity foundations to finance the construction of Islamic schools within their localities (Öcal, 2013). The government blocked these efforts by introducing a law in 1967 that imposed a minimum population threshold of 50,000 as a prerequisite for the opening of Islamic schools. Only a handful of district centers had populations greater than 50,000 during this period, which made the expansion of Islamic schools nearly impossible.[7] Another blow to Islamic schools came after the 1971 Turkish military memorandum. Religion courses were removed from the curriculum of lower secondary Islamic schools, ultimately leading to the closure of some of these schools in 1971 due to insufficient demand. Islamic schools continued to operate at the upper secondary level. Even though the 1973 Basic Education Law prepared by a technocratic government reversed this decision, the temporary closure of Islamic lower secondary schools led to a temporary reduction in the number of students attending Islamic schools. The 1973 Basic Education Law also brought some favorable changes to Islamic schooling that made Islamic schools an alternative to secular schools. Maybe the most important of these was to make Islamic school degrees equivalent to secular school degrees. This allowed Islamic school students to apply for higher education programs in various fields of social sciences after completing their secondary education.[8]

The rise of Islamic schools started after the 1973 general elections, when an

[7] Resmi Gazete, 8 August 1967, Number 12668; MEB Tebligler Dergisi, 11 September 1967, Number 1469 pp. 313-314.

[8] This is because Islamic schools were teaching only the literature track of the academic path, and the science track was required to attend natural and applied science programs.

Islamist party, Milli Selamet ("National Salvation") Partisi (NSP), entered parliament for the first time in the history of the republic. NSP received 11.8% of votes nationally and earned 48 seats (9% of total seats), which made it the third largest political party within parliament. As the rest of the parties failed to form a single-party government, NSP had a favorable position in coalition talks as the strongest candidate for the minor coalition partner position. NSP ended up participating in several coalitions during the 1973-1978 period with both secularist-left and center-right parties separately.[9] One of the main items on the NSP agenda was to enable Islamic schools to become an alternative to secular schools in Türkiye (Landau, 1976). In all coalitions, NSP advocated the opening of Islamic schools that had already been built or were under construction through initiatives by local foundations. Many schools had been waiting for permission to open for years but had failed to do so due to the population threshold requirement and disputes with secular groups. The expansion of Islamic schools, therefore, was fast paced. As early as the beginning of the 1977 school year, a total of 334 Islamic schools were operating. When the expansion ended in 1980, there were 374 Islamic schools in total, as seen in Figure 1.

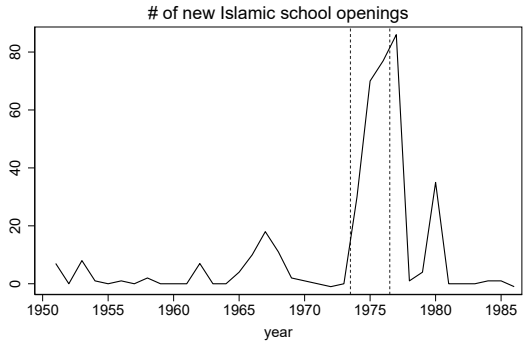
The expansion of the Islamic school network led to a sharp increase in the share of male students registered in Islamic schools among new registrations in 6th grade. This proportion had increased from 5% to 15% within three years after the network's opening (see Figure 2). An important feature of this expansion was that the newly opened schools registered students for 6th grade only and opened subsequent grades annually. Therefore, registration for intermediate grades was not possible.

Even though there were no legal restrictions on girls' participation in Islamic schools prior to 1973, participation of girls was almost non-existent, as Islamic schools were seen by the government as a means of training imams and preachers (vocations exclusive to men).[10] Against the push toward making Islamic schools as an alternative to secular schools, a gender rule was introduced for registra-

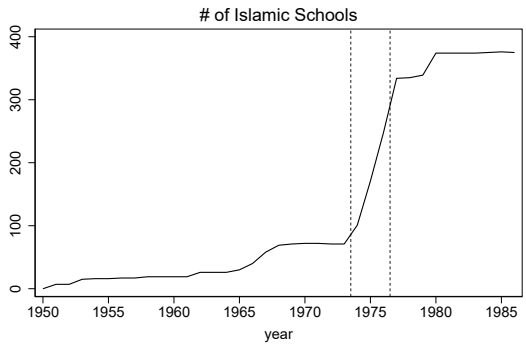
[9] During this period, the Islamist party was not in charge of the Ministry of Education.
[10] Resmi Gazete, 22 May 1972, Number 141193.

Figure 1: Evolution of Islamic School Numbers

(a) New Islamic school openings



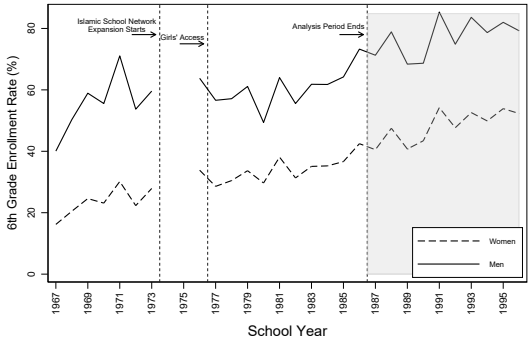
(b) Total Number of Islamic Schools by Year



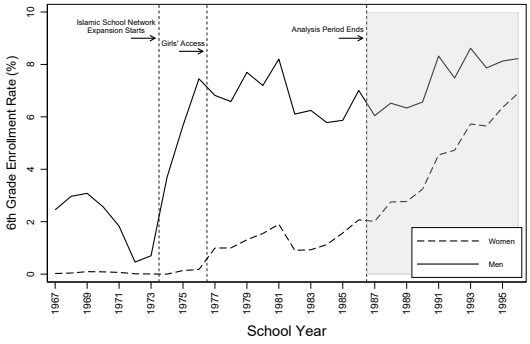
Notes: Panel (a) shows the distribution of opening years of all Islamic lower secondary schools in Türkiye. Panel (b) shows the total number of open Islamic lower secondary schools in Türkiye in a given year.

Figure 2: Enrollment Rates to 6th Grade by School Type and Gender

(a) Secular Schooling



(b) Islamic Schooling



Notes: This figure shows the evolution of enrollment rates to 6th grade in a given school year by school type and gender. Enrollment rates are calculated by dividing the total new students registered by the theoretical cohort size of 6th graders for a given school year measured based on population censuses from between 1970 and 1995. For the period between 1973 and 1975, no data is provided for secular general education, resulting in a gap in the records. Source: National education statistical yearbooks of Turkish Statistics Institute.

tion to Islamic schools: being a boy was added as a requirement for attending

Islamic schools in 1973.[11] The doors of Islamic schools remained shut to female students despite the expansion of these schools. Although the Islamist party was a coalition member during this period, it did not attempt to abolish the gender rule. Some factions in the Islamic community even argued that bringing girls into these schools would corrupt the sacredness of those schools (Aksoy, 2005, p. 158). Female students only achieved the legal right to attend Islamic schools after an unanticipated ruling by the Council of State in 1976.[12] The highly secular high court of the judiciary ruled that the gender requirement violated equality of access to schooling and lifted the law. This unexpected development resulted in a substantial increase in the number of female students attending Islamic schools in the 1977 school year. The growth in the share of girls registered in Islamic schools increased throughout the years and even caught up with the share of male students registered in Islamic schools in the late 1990s (see Figure 2). An exception to this increasing trend occurred between 1981 and 1984, when registrations of girls in Islamic schools dropped sharply during the military rule years. The evidence on the gender ratio in Islamic schools and secular-to-Islamic ratio among girls' registrations Appendix Figure D.8 and D.10 show that military rule depressed girls' Islamic school registrations, resulting in girls' Islamic school registrations underperforming its potential trend.

2.3 Islamic Schools in Türkiye: Imam Hatip Schools

Islamic schools in Türkiye have a unique nature, as they differ in many dimensions from their counterparts in other Muslim countries.[13] Like secular schools, they are tuition-free state schools. The Ministry of Education (MOE) is the responsible authority that determines and inspects all curriculum and textbook contents and appoints school staffs. Therefore, only the MOE itself has control and power

[11] See MEB Tebligler Dergisi, 29 May 1972, Number 1700 p. 185.

[12] The court case was filed by a father whose daughter was rejected from registration at an Islamic school in Kayseri. See Council of State Ruling nr. 1976/4374, 15 December 1976, for more detail.

[13] See Ozgur (2012) and Pak (2004) for in-depth ethnographic analyses of Imam Hatip schools.

over the management of these schools. The involvement of religious foundations and organizations occurs only in the context of financial support through charity and extracurricular social events under the monitoring of the ministry. The schools have vocational school status, as they initially aimed to educate imams and preachers for mosques. They were available as lower secondary schools from grades 6 to 8 and as upper secondary schools from grades 9 to 12 between 1950 and 1997.[14]

The secular nature of education, combined with cultural social norms and beliefs about girls' education, often creates direct or indirect barriers to participation in voluntary education in religious communities. Islamic schools have several advantages over secular schools in attracting religious parents' children by eliminating primarily culture-related barriers.

First, these schools address the lack of religious education in secular schools. Islamic schools in Türkiye teach a hybrid curriculum that combines secular with religious subjects.[15] Although about one-third of the educational content at the upper secondary level is religion related, Islamic school students spend one more year to compensate for this emphasis. Therefore, upper secondary Islamic schools do not teach religion courses at the expense of secular content.[16] At the lower secondary level, there are also similar levels of secular core course instruction hours for both types of schools. The only difference, while Islamic school students have religious course electives, secular school students have technical- or art-related electives.

Second, Islamic schools alleviate both secular peer and secular teacher role model effects that may concern some religious parents. Islamic schools primarily attract students with religious and conservative family backgrounds. Therefore, peers in Islamic schools are less likely to transmit secular ideas to each other

[14]See Appendix Figure D.2 for a look at the education system in Türkiye in the 1970s.

[15]See Appendix Figure D.3 and D.4 for the curriculum of Islamic and secular schools in 1975. Imam Hatip schools provide a curriculum based on the principles of Sunni Islam, which forms the foundation of their religious education; as a result, they are often not preferred by Alevi communities, who may feel that their beliefs and practices are underrepresented in such institutions.

[16]The curriculum in upper secondary-level Islamic schools has a similar share of common courses as the literature track in upper secondary secular schools.

than peers in secular schools. As almost one-third of the curriculum involves religious subjects, teachers who teach these courses also come from a religious background.[17] Islamic schools can also alleviate religious parents' concerns about mixed-gender schooling. These schools have a more conservative environment than secular schools. Interaction between girls and boys is limited due to visible and invisible barriers (Ozgur, 2012). For example, girls and boys either sit on different sides of the classroom or participate in courses in separate classrooms, if possible. In some cases, girls and boys receive education on separate floors or in different buildings within the school complex. Due to women's seclusion in Islamic culture, which restricts the interpersonal relations of women with men outside the family, it is a norm in these schools to have a lower level of interaction between students of different genders.

The last advantage of Islamic schools for religious parents is the lax application of Türkiye's headscarf ban. In the context of the ban, parents who wanted their daughters to veil after puberty had to choose between their daughters' education and veiling. Loose application of this ban was a prominent advantage of Islamic schools over secular schools for a long time in terms of attracting female students from conservative and religious families. Yet, in the early years of girls' access to Islamic schools, the entry of headscarves to those schools caused tensions with secular elements in the state that led to judicial cases (Aksoy, 2005). The conflict was resolved in 1983 when headscarves were allowed during religious courses in Islamic schools.[18] Owing to these characteristics, Islamic schools fostered a perception of a safer and more culturally compatible educational environment for girls from religious and conservative families, enhancing their attractiveness to conservative parents compared to secular schools.

[17] Teachers of religion-related courses must be graduates of theology departments at universities or similar institutions. Other teachers, who are graduates of faculties of education and are centrally appointed, are therefore likely to possess a level of quality comparable to that of teachers in an average secular school.

[18] Practically, this also made the use of headscarves possible during other courses or extracurricular activities since it was onerous to monitor schools.

3 Data

The data used in this paper come primarily from the Turkish Statistical Institute's sub-nationally representative 5% microsample of the 1990 population census. The microsample uses systematic random sampling by province, with the sampling unit being the household. Census data provide the necessary information for the main analysis, including individuals' gender, birth year, district of residence in 1990, locality status, province of birth, and highest educational degree completed. Unfortunately, there is no information on whether the degree obtained is from an Islamic school. Census data also contain information on individuals' marital status, fertility, and labor market involvement to study the effect of access to Islamic schools on related outcomes.

Another crucial piece of information needed to conduct the analysis is the locations and establishment years of Islamic schools. I use a new dataset compiled by Benzer and Tukiainen (2025) that contains detailed information on the establishment years and locations of all Islamic schools opened before 1981. In 1980, there were 374 Islamic schools located in 373 district centers. With one exception, each district center had only one Islamic school. Figure 3 provides information on the locations of Islamic schools in 1980. Finally, I merged the school location data with individual-level census data to identify individuals exposed to Islamic schools. I restrict my main analysis to the subpopulation of residents living in district centers in 1990 since Islamic schools were available only in district centers. However, I also utilize the rural subpopulation as a placebo sample in my analysis since Islamic schools were out of the registration areas of rural residents.

Panel (a) of Appendix Table C.1 provides summary statistics on related outcomes for exposed and nonexposed cohorts in district centers with and without an Islamic school. I present summary statistics separately for the men and woman subsamples. Panel (c) of Appendix Table C.1 provides information on available district center characteristics included as controls, such as population sizes in

Figure 3: Locations of Islamic Schools

Notes: Map of Türkiye showing the geographic locations of Islamic schools in 1980. Each dot represents a district center as of 1990.

1970, combined vote shares of conservative parties in 1973, and railroad access.[19] In 1990, there were 894 district centers located in 71 provinces.

Contrary to what one would expect, Islamic schools were not placed in poorer, uneducated, more religious areas with limited access to secular schools. As seen

[19] I classify the following parties as socially conservative center or right-wing parties in the 1973 general elections: Justice Party, Democratic Party, National Salvation Party, Republican Reliance Party, Nationalist Movement Party, and Nation Party. In practice, I construct the residual vote share as the proportion of votes remaining after excluding those cast for the secularist founding party of Türkiye, the Republican People's Party, the Alevi minority Unity Party supporting secularism, and the independents. In 1973, about 20 district centers were still grouped into larger units, with only aggregated voting data reported. Therefore, I impute vote shares for these localities based on the assumption that they matched the overall shares of the consolidated unit in 1973.

in Appendix Table C.1 and Appendix Figure D.7, district centers with an Islamic school were, on average, more educated, more urbanized and had similar levels of conservative party support relative to comparison district centers. Specifically, for outcomes related to girls' schooling, older cohorts in treated district centers exhibited higher levels of lower and upper secondary school completion compared to comparison district centers, as illustrated in columns 1 and 4 of Appendix Table C.2. These differences persist with the inclusion of province fixed effects. However, controlling for initial population sizes and 1973 vote shares for conservative parties eliminates these differences, as seen in columns 3 and 6. Therefore, the logarithm of 1970 population sizes and the combined vote shares of conservative parties in 1973 are included as baseline controls in my analysis, as they help account for level differences in secondary school completion rates among older female cohorts across district centers with and without an Islamic school.

4 Empirical Analysis

4.1 Empirical Strategy and Descriptive Evidence

My first objective is to evaluate the impact of access to Islamic schools on the educational participation of men and women. My main outcomes of interest are indicators for whether an individual has completed lower or upper secondary school, education levels that were available in Islamic schools. My identifying variation is an individual's exposure to access to Islamic schools, which is jointly determined by the date of birth and locality of residence.

In Türkiye during the 1970s, children generally attended lower secondary schools starting from age 11. Therefore, children aged 11 or younger during years with access to Islamic schools were fully exposed to the treatment. When the Islamic school network expansion started in 1974, newly established schools registered students only for sixth grade and introduced upcoming grades sequentially over the next years. In theory, the staggered introduction of grades made

registration for older cohorts not possible. For women, I consider children aged 11 years or younger in 1977, the year that they earned the legal right to attend Islamic schools, to be fully exposed cohorts and older children to be nonexposed cohorts. For men, I consider children aged 11 years or younger in 1974, the year when the expansion of Islamic schools started, to be fully exposed cohorts and older children to be nonexposed cohorts.[20] I exclude individuals aged 12 from my analysis since some children may have been fully exposed to the treatment due to the calendar effect.[21]

Islamic schools were available in only some district centers, so not everyone had access to these schools. Since my data do not include the district center in the education information of an individual, I assign individuals to treatment with respect to individuals' locality of residence during the 1990 census. Therefore, I implicitly assume that people lived in the same district center about 10 years prior to the census. To alleviate concerns about this assumption made regarding mobility, I conduct a series of robustness checks in Section 5.2.

I use a difference-in-differences empirical strategy to estimate the impact of access to Islamic schools. My empirical strategy is based on comparing cohorts of secondary school age with cohorts too old to be in school in district centers with and without an Islamic school. My main identifying assumption is that in the absence of access to Islamic schools, the outcomes of female (male) cohorts living in a district center with an Islamic school would otherwise have changed similarly, on average, to those of female (male) cohorts residing in a district center without an Islamic school.

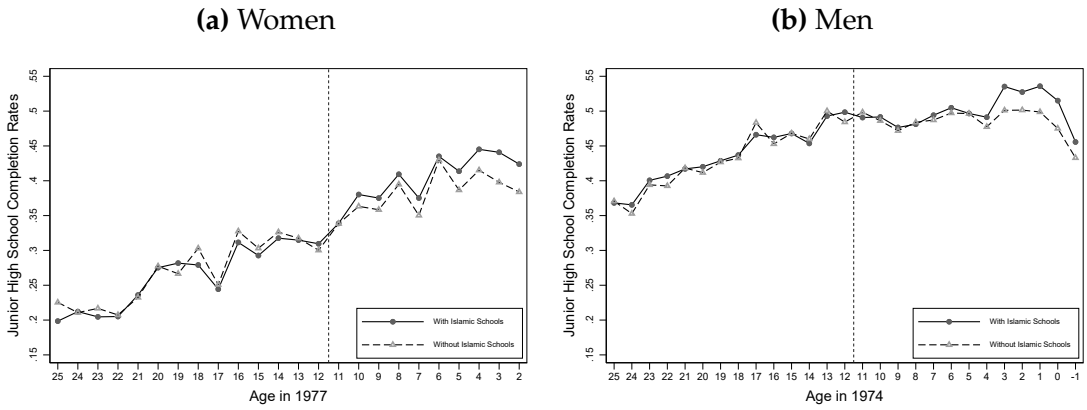
Figure 4 presents descriptive evidence in support of my identifying assumption using raw data on lower secondary school completion rates in treated district

[20] A few individuals from older cohorts may have been exposed to the treatment due to entry in primary schooling at later ages or grade repetition. The results are robust to excluding these cohorts.

[21] During the 1970s, the cutoff month for starting primary schooling was September. Therefore, most of the children born after September in a given year may have started primary school the next school year. However, including 12-year-olds in my analysis does not change the results.

centers and comparison district centers over the analysis period.[22] The lower secondary school completion rates of both groups follow a similar trend for male and female cohorts too old to benefit from access to Islamic schools. Nonexposed cohorts also have similar levels of education, overall, among both genders. The trend in lower secondary school completion rates for female cohorts breaks in favor of district centers with Islamic schools right after the expansion of access, and these treated centers have relatively higher completion rates for all treated cohorts. The trend for male cohorts remains similar even after the expansion of the Islamic school network, and the break in favor of district centers with Islamic schools occurs later.

Figure 4: Lower Secondary School Completion Rates – Raw Data



Notes: This figure shows the fraction of individuals who have completed lower secondary school residing in district centers with and without an Islamic school in 1980. Panels (a) and (b) restrict the sample to women and men, respectively. Cutoff years differ by gender, as female students achieved legal rights to attend Islamic schools in 1977, three years after the expansion of the Islamic school network. Cohorts on the right side of the vertical dotted lines are fully exposed cohorts.

As I do not observe the type of school that a student graduated from, I would like to learn whether the increase in educational participation of women is driven by Islamic school enrollment or a strategic response of the secular schooling

[22] In Appendix Figure D.7, I also present the evolution of the outcome means instead of the overall trend. The main takeaways remain similar to those from the overall level trends.

system or secular parents.[23] During my analysis period, the Turkish state had a monopoly over education provision, and private Islamic schools were not allowed in Türkiye. This setting implies that the strategic supply-side response would have to have occurred only on the part of the state, which provided both types of education. One way to investigate the possibility of strategic secular supply- and demand-side responses is to check the overall patterns in official school enrollment trends by school type before and after expansion of access to Islamic schools. As seen from panel (a) of Figure 5, the slope of the increasing trend in secular school enrollments remains precisely the same for the period after access to Islamic schools was provided during my analysis period. If anything, it becomes slightly lower at the point where Islamic enrollments substantially increased after 1987. Panel (b) of Figure 5 provides further encouraging evidence that Islamic schooling was the driver behind the positive change in the trend of total school enrollments. While this trend remained almost the same over forty school years, Islamic school enrollments added to secular school enrollments and increased the overall growth rate of total school enrollments after 1977. Therefore, general enrollment patterns by school type motivates that Islamic school enrollments were the main driver behind the differential increase in educational participation of women in treated district centers.[24]

4.2 Islamic Schools and Educational Attainment

4.2.1 Regression Framework

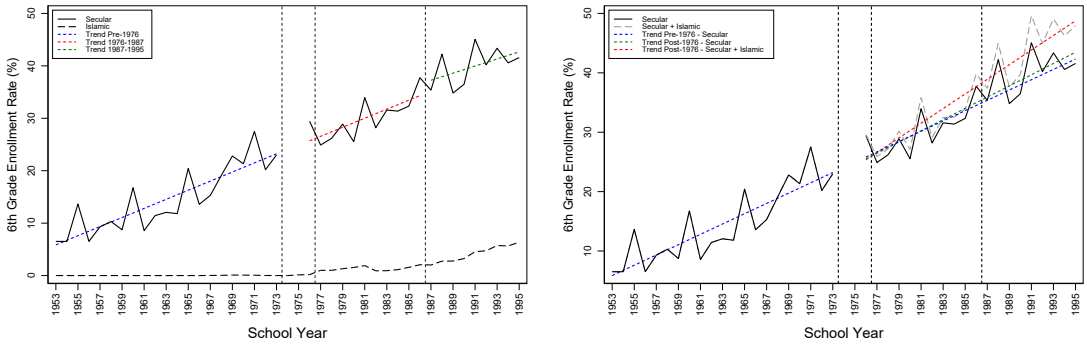
While the previous results offer descriptive evidence on the impact of access to Islamic schools, they could be subject to district center- or cohort-level confounders. Next, I estimate separately for the male and female subsamples a more demanding

[23] Bazzi et al. (2020) document a strategic response of the private Islamic schooling sector to the construction of secular public primary schools. Islamic private secondary schools entered areas more affected by the secular primary school expansion.

[24] I present the case for men's school enrollments in Appendix Figure D.9. In this case, the general patterns in enrollment rates imply that Islamic school enrollments depressed secular school enrollments for men.

Figure 5: Evolution of School Enrollment Rates to 6th Grade for Women

(a) Trends in Secular Schooling **(b)** Trends in Secular and Total Schooling



Notes: This figure shows the evolution of enrollment rates and its trends to 6th grade in a given school year by school type. Enrollment rates calculated by dividing the total new female students registered with respect to school type by the theoretical female cohort size of 6th graders for a given school year measured by using population censuses from between 1950 and 1995. For the period between 1973 and 1975, no data is provided for secular general education, resulting in a gap in the records.

econometric specification similar to that in Duflo (2001), which allows for the inclusion of controls:

$$y_{ipdc} = \gamma_d + \delta_c + \sum_k \beta_k (I_c^k \times Islamic_{pd}) + \sum_c \alpha_c \mathbf{X}_{pd} + \eta_{pc} + \epsilon_{ipdc}, \tag{1}$$

where y_{ipdc} is the outcome of interest (educational attainment, marriage and fertility, labor market) of individual i residing in district center d of province p and belonging to 3-age cohort c. $Islamic_{pd}$ is a dummy indicating whether district center d had an Islamic school in 1980. I_c^k is a dummy indicating whether the individual belongs to 3-age cohort k.[25] γ_d and δ_c are a full set of district center and age-cohort fixed effects. In my preferred specification, I replace the age cohort fixed effects with η_{pc}, a set of province-by-cohort fixed effects. Additionally, I

[25] I use 3-age cohorts instead of single-age cohorts in my main analysis for two reasons. The first is to deal with substantial cases of age heaping visible in the data (see Appendix Figure D.6). The second is to gain statistical power in my regressions. However, I present the results with single-age cohorts in the Appendix Figures D.32, D.33, and D.34 for all the outcomes used in my main analysis.

include interactions between cohort dummies and baseline controls $\mathbf{X}_{pd}$, which consist of the natural logarithm of the population size of district center d in 1970 and the vote shares of conservative parties in the 1973 general elections. The omitted category corresponds to individuals aged 14-16 during the period of access to Islamic schools. I cluster standard errors at the level of the district center of residence.

This dynamic difference-in-differences (DID) specification allows the effects of having access to Islamic schools to vary flexibly and across cohorts. Cohort fixed effects control for all factors common to all individuals in a cohort, such as nationwide shocks. District center fixed effects control for all time-invariant factors common to all individuals residing in a district center. Introducing province-by-cohort fixed effects and interactions between cohort dummies and initial population sizes and 1973 conservative parties' vote shares allows cohorts to have differential trends across provinces and cohort trends to be related to the initial population size and the support for conservative parties of the district center. β_k represents the 3-age-cohort-specific DID estimates identified from within-cohort-variation across districts centers with and without an Islamic school conditional on cohort-specific population size and province trends. For nonexposed cohorts, I expect $\beta_k = 0$. For fully exposed cohorts, I expect $\beta_k > 0$ if access to Islamic schools positively affects the likelihood of completing lower or upper secondary school. For the likelihood of completing primary school, which is a natural falsification outcome due to the lack of primary-level teaching in Islamic schools, I expect $\beta_k = 0$.

Figure 6 plots the estimates of the 3-age-cohort-specific treatment effects for my preferred specification separately for male and female subsamples.[26] The dependent variable is a dummy that captures whether an individual has completed lower secondary school (in panel a), upper secondary school (in panel b), or primary school (in panel c). For all outcomes, the estimates for nonexposed cohorts are close to 0 and do not follow any specific trend as expected. A lack of

[26] Appendix Figures D.14, D.15 and D.16 present results on the specification with only district center and age-cohort fixed effects included for all outcomes.

pretrends for both genders provides supportive evidence on my main identifying assumption. In panel (a), the estimates for women become positive, starting with cohorts aged 11-13, who are half exposed and half nonexposed. The estimates stay positive and become significant for fully exposed cohorts, with the exception of cohorts aged 5 to 7 in 1977, who were affected by military rule. This result is expected since girls' enrollments dropped sharply during the period of military rule, as I already mentioned in Section 2.2. These results indicate an increase in the likelihood of completing lower secondary school among women after the expansion of access to Islamic schools and are also in line with the overall trend in Islamic school enrollment in the official data in Figure 2.

For the male subsample, the estimates for fully exposed cohorts are smaller in magnitude and statistically indistinguishable from 0. The results are similar for the likelihood of completing upper secondary school, as seen in panel (b). This outcome suggests that some of the female students who attended Islamic lower secondary schools continued their education at upper secondary level as well. In panel (c), the estimates on the likelihood of completing primary school are close to 0 for fully exposed female cohorts, and the trend remains flat. This result is in line with expectations, as there was no primary-level education in Islamic schools. Although it seems there is a statistically significant increase in the likelihood of completing primary school for some boy cohorts, it is economically nonsignificant and mainly driven by the reference group being exceptionally low. Nevertheless, its pooled DID estimates are also small and statistically nonsignificant.

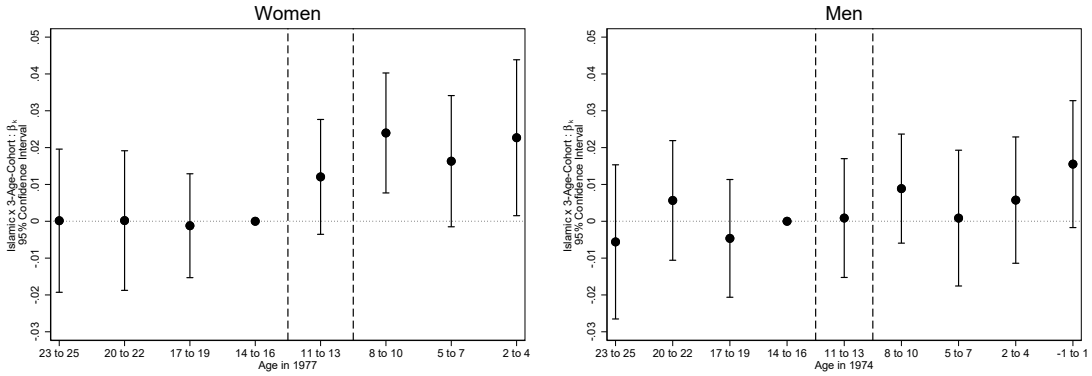
4.2.2 Main Regression Estimates

In this section, I present the main regression estimates to assess the overall magnitude and significance of the impact of access to Islamic schools on education levels. I estimate the following generalized difference-in-differences specification separately for the subsamples of men and women:

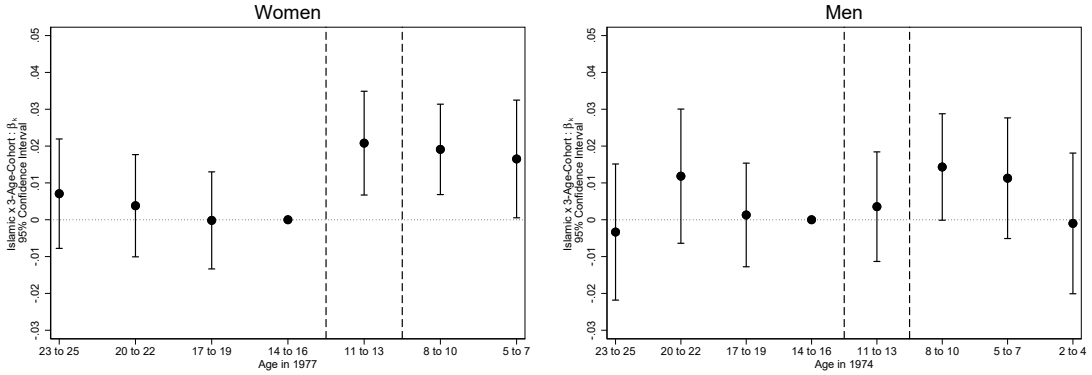
$$y_{ipdc} = \gamma_d + \delta_c + \beta(Young_c \times Islamic_{pd}) + \sum_c \alpha_c \mathbf{X}_{pd} + \eta_{pc} + \epsilon_{ipdc}. \tag{2}$$

Figure 6: Access to Islamic Schools and Education – Effects by 3-Age Cohorts

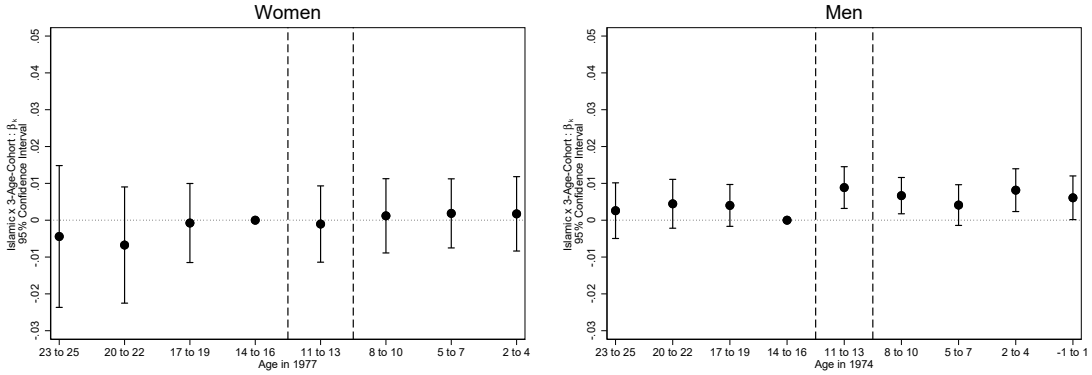
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



(c) Dep. Var.: Primary School Completed (Falsification Test)



Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals for equation (1) for the subsamples of women and men, respectively. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 vote shares of conservative parties interacted with cohort dummies. Cohorts between two vertical lines include half-exposed and half-nonexposed cohorts. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged between 14 and 16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by district center of residence.

This specification replaces the 3-age-cohort-specific β_k treatment effects in equation (1) with a single interaction of the $Young_c$ dummy and $Islamic_{pd}$. The $Young_c$ dummy equals 1 for cohorts fully exposed to the treatment—that is, individuals aged 11 or younger in 1977 for women and in 1974 for men—and equals 0 for nonexposed cohorts. Otherwise, the specification remains unchanged from equation (1). I exclude individuals aged 12 in 1977 for women and in 1974 for men as they may include members of the exposed and nonexposed cohorts together due to the calendar effect. Nonexposed cohorts are the last ten cohorts older than age 12 during the year of expansion of access.[27] I cluster standard errors at the level of the district center of residence.[28] Under the parallel trends assumption and in the absence of time-varying confounding factors, the estimated β is the coefficient of interest, which reflects the average causal effect of access to Islamic schools on exposed cohorts.

Table 1 displays the main results on the effect of access to Islamic schools on the completed educational level of individuals. The odd columns present results from the simpler specification that includes only district center and age cohort fixed effects. Even columns present the preferred specification mentioned previously, where I insert province-by-cohort fixed effects and the initial population size of district centers interacted with cohort dummies, in addition to district center fixed effects. In columns 1 and 2 of panels (a) and (b), I investigate the effect on the likelihood of completing lower secondary school. With the expansion of access to Islamic schools, the likelihood of completing lower secondary school of exposed female cohorts increases by 2.1 p.p., which is about 6.2% relative to the mean. For men, if anything, the likelihood of completing lower secondary school increases by 0.9 percentage point, which is about 1.9% relative to the mean, but the change is statistically indistinguishable from 0 and economically small in magnitude. Column 4 shows similar results on the likelihood of completing upper secondary school for both genders.

[27] For the robustness of the results to different bandwidth selections, see Appendix Table C.5.

[28] My results remain robust when I use Conley (1999) standard errors that account for spatial correlation in the data. If anything standard errors get smaller.

Table 1: Access to Islamic Schools and Educational Attainment

(a) Panel A. Women

	Outcome: [...] School Completed					
	Lower Secondary		Upper Secondary		Primary	
	(1)	(2)	(3)	(4)	(5)	(6)
Islamic x Young	0.016*	0.021***	0.011	0.018***	-0.000	0.006
	(0.009)	(0.008)	(0.007)	(0.005)	(0.007)	(0.005)
Outcome Mean	0.342	0.342	0.236	0.236	0.867	0.867
R^2	0.090	0.096	0.072	0.077	0.164	0.175
N	299544	299544	229053	229053	299544	299544
Clusters	894	894	894	894	894	894
District-Center FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓		✓		✓	
Province-by-Cohort FE		✓		✓		✓
Baseline Controls		✓		✓		✓

(b) Panel B. Men

	Outcome: [...] School Completed					
	Lower Secondary		Upper Secondary		Primary	
	(1)	(2)	(3)	(4)	(5)	(6)
Islamic x Young	0.010	0.009	-0.000	0.002	0.000	0.002
	(0.007)	(0.006)	(0.006)	(0.006)	(0.002)	(0.002)
Outcome Mean	0.476	0.476	0.336	0.336	0.960	0.960
R^2	0.042	0.049	0.037	0.045	0.055	0.062
N	374830	374830	295617	295617	374830	374830
Clusters	894	894	894	894	894	894
District-Center FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓		✓		✓	
Province-by-Cohort FE		✓		✓		✓
Baseline Controls		✓		✓		✓

Notes: This table reports estimates of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1990. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 in 1977 for women and in 1974 for men. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. Odd columns include only for district center and age cohort fixed effects as controls. Even columns include district center FE, province-by-cohort FE, and the baseline controls interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

While the likelihood of completing upper secondary increases for exposed female cohorts by 1.8 p.p., which is about 7.6% relative to the mean, there is no statistically significant effect for men.[29] As a result, gender gap in education decreases.[30]

Next, I focus on the educational outcome that was not the direct target of access to Islamic schools, namely, the likelihood of completing primary school, which acts as a natural falsification test. Islamic schools were not available at the primary school level, so one would not expect access to Islamic schools to significantly increase the likelihood of completing primary school. In line with expectations, column 6 of both panels in Table 1 shows no significant effect of access to Islamic schools on the probability of completing primary school for either gender.

Overall, my results suggest that access to Islamic schools increased the overall education of affected women. When considered together with the evidence from official registrations reported in Figure 2, the results indicate that many of the female students registered in Islamic schools would not have continued on to secondary education without access to Islamic schools.[31] In contrast, the increase in overall education for men is systematically smaller and statistically nonsignificant. As seen from official registrations reported in Figure 2, although boys' registrations in Islamic schools were substantially larger than girls' registrations, this difference did not lead to an increase in education levels among men.

4.3 Effects on Family and Labor Market Outcomes

As Islamic schools attracted female students mainly from religious and conservative families, another interesting set of outcomes to analyze are marriage and fertility behaviors among exposed female cohorts. There is a vast amount of

[29] The difference in the number of observations compared to lower secondary school arises because the three youngest cohorts in my analysis have not yet reached the age for upper secondary school graduation and are therefore not included in the upper secondary analysis.

[30] See Appendix Section A.1 for the results and a detailed information on the analysis of gender gap.

[31] Anecdotally, Pak (2004, p.333) states, "In fact, many of the parents I interviewed mentioned that they would not have sent their daughters to upper secondary school at all unless it was an Imam Hatip school."

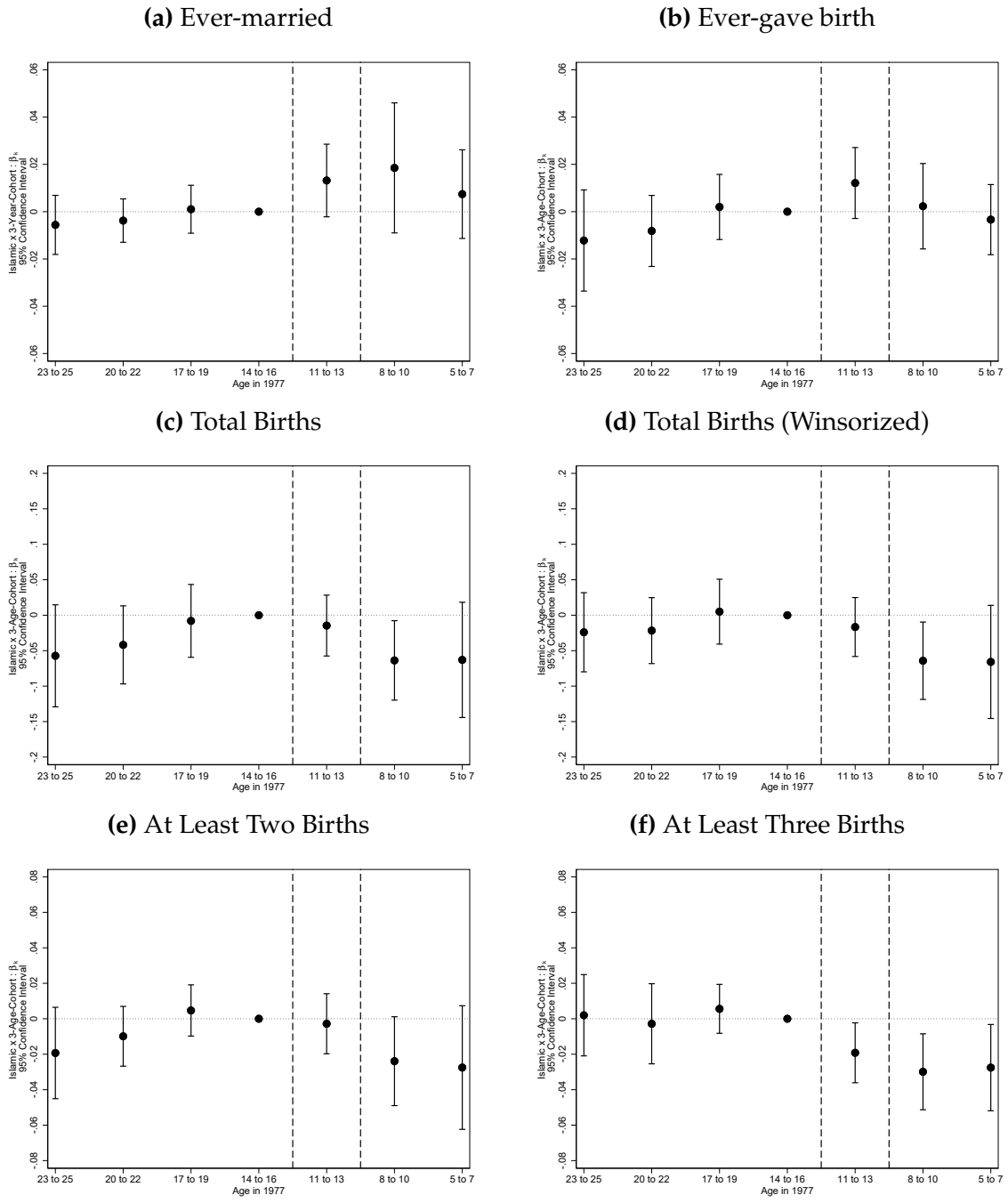
literature that examines the impacts of educational interventions on marriage and fertility decisions due to access to secular education. However, the consequences of an educational intervention providing access to Islamic schooling may have differential results. On the one hand, staying in secondary education might make teenage girls postpone their marriage or fertility decisions until after graduation. Since the target group was religious women, the effect may be substantial. On the other hand, attending an Islamic school and exposure to Islamic teaching might lead them to engage in more conservative marriage and fertility behaviors (Ali, 2010). However, the plausibility of the latter mechanism is ambiguous in my context, as female students who otherwise would have dropped out of school were exposed to a substantial amount of secular content as well. In this paper, focusing on girls' early adulthood, I present evidence only on the argument regarding postponement of fertility and marriage among affected female cohorts. Unfortunately, analyzing lifetime fertility behavior is not possible due to data limitations and the timing of the census and is therefore beyond the scope of this paper.

To analyze the effect of access to Islamic schools on marital and fertility decisions, I estimate the same dynamic difference-in-differences specification as in equation (1) by using marital and fertility outcomes as my outcomes of interest. Here, I focus on female cohorts aged 18 or older, the legal marriage age in Türkiye.[32] Ideally, one would like to have information on the age at first marriage and first childbirth as well as information about marriage status and the total number of births. However, the census does not include information on age at first marriage or first childbirth. Therefore, I analyze several related outcomes to link access to Islamic schools to delayed fertility and marriage behaviors.

I start my analysis by using an indicator variable that provides information on whether the individual has ever married. Panel (a) of Figure 7 shows that access to Islamic schools is associated with a higher likelihood of ever marrying among

[32] Although the legal marriage age is 18 in Türkiye, teen marriage is a common phenomenon, as it is possible to have a religious marriage performed by an imam at earlier ages. However, this type of marriage is not recognized by the state, and marrying before age 18 is a punishable crime by law.

Figure 7: Access to Islamic Schools and Family Outcomes - Effects by 3-Age-Cohorts



Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (d), and given three or more births in panel (e). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half non-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women serve as the reference group. Standard errors clustered by district center of residence.

the exposed female cohorts; however, the estimates are highly noisy and statistically nonsignificant. Second, I use the likelihood of ever giving birth as an outcome. Panel (b) of Figure 7 shows that differences in the likelihood of ever giving birth remain similar for exposed cohorts. Next, I use the total number of childbirths by an individual as my outcome. As shown in panel (c) of Figure 7, there are negative but declining pretreatment differences before the provision of Islamic school access. With the treatment, the trend reverses, and exposed female cohorts show a decreasing trend in the total number of births. Panel (d) presents estimates where the total number of childbirths is winsorized at the 98th percentile to account for extreme values. The pretreatment differences for older cohorts show slight improvement.

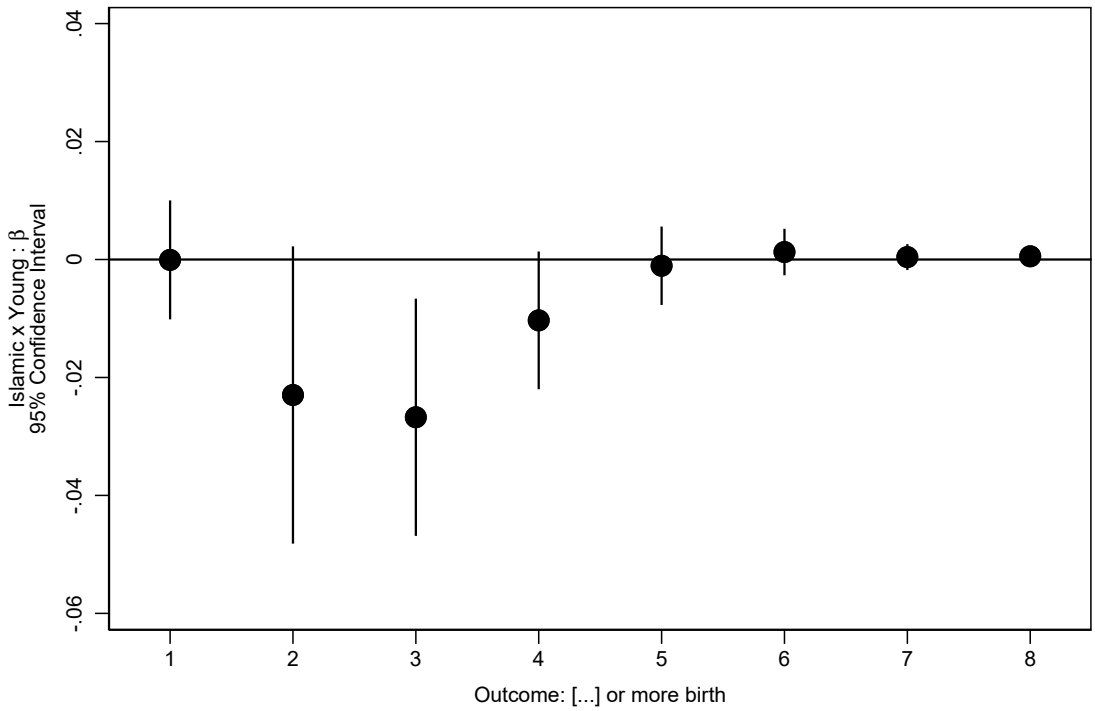
I provide further evidence linking the decline in total fertility rates to the postponement of childbearing. Specifically, I construct several indicators to determine whether individuals have had at least a specific number of childbirths. Subsequently, I estimate equation (2) iteratively, using each indicator as the dependent variable, and present the results of these regressions in Figure 8. Figure 8 illustrates a marked decline in the likelihood of having two to four births or more for affected female cohorts, indicating that access to Islamic schools may play a critical role in delaying childbearing within this range. I also present estimates based on a more flexible dynamic DID specification from equation (1), focusing on outcomes for two or more and three or more births. Panel (e) of Figure 7 shows a picture similar to that for total childbirths for the likelihood of giving birth two or more times, as there are negative but declining differences before the treatment, and the trend reverses in favor of exposed female cohorts after the provision of Islamic school access. Finally, we see a sharp decrease in the likelihood of giving birth at least three times or more for exposed cohorts in Panel (f).[33]

I argue that the reduction in early adulthood fertility is due to the postponement of fertility and marriage behaviors. Women who potentially would have

[33]I also provide the results on family outcomes based on a subsample where I exclude the eastern and southeastern regions of Türkiye, which have very high fertility rates and mostly existed in my control group. As seen in Appendix Figures D.17 and D.18, my findings remain robust to the exclusion of eastern and southeastern regions.

left school in the absence of the treatment might have married unofficially in a religious marriage. Alternatively, they might have married officially at a young age after turning 18 and begun childbearing early. Therefore, by ages 18 to 25, they might have given birth twice or more, while those who stayed in schools due to access to Islamic schools would only be giving birth for the first or second time.

Figure 8: Access to Islamic Schools and Family Outcomes - Childbirth Numbers

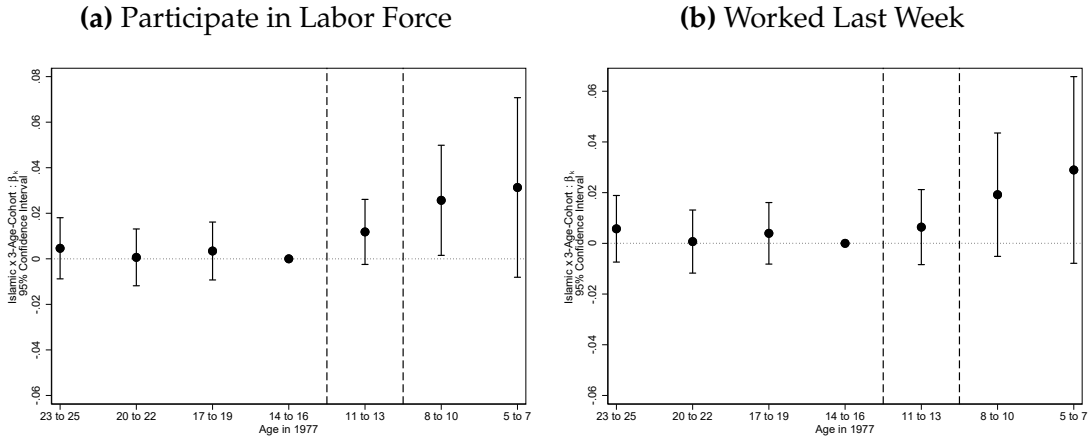


Notes: This figure reports estimates of *Islamic* × *Young* in equation (2) for the narrower female subsample comprising age-cohort 17 and younger in 1977. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 and older than 4 in 1977. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. Standard errors clustered by district center of residence.

In Türkiye, women's labor force participation has been persistently low throughout the history of the Turkish Republic (Özsoy and Atlama, 2009). This makes increasing the labor force participation of women a central issue in policy-

making. Having a secondary degree in a developing country with low levels of education may increase labor market returns and incentivize women to participate in the labor market. To examine the effect of access to religious schools on labor market outcomes for women, I estimate the dynamic DID specification in equation (1) where the outcome variables are indicators whether the individual had participated labor force or was working one week prior to the census. Figure 9 shows no differences in outcomes for nonexposed cohorts. After the expansion

Figure 9: Access to Islamic Schools and Labor Outcomes - Effects by 3-Age-Cohorts



Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district-centers in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half non-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977. Standard errors clustered by district center of residence.

of access to Islamic schools, exposed cohorts became more likely to participate in the labor force and to have worked one week prior to the census. These results indicate that the increase in the overall education levels of women paid off in the

labor market as well.[34]

Table 2 reports the corresponding pooled differences-in-differences estimates for family and labor market outcomes for women. Panel (a) reports estimates for the full sample, while panel (b) focuses on a narrower sample comprising older cohorts closer in age to the treated young cohorts, as they share similar age-group fertility patterns.[35]

Overall, my results on education, family, and labor market outcomes indicate an empowering effect of access to Islamic schools among conservative religious women. The exclusionary nature of secular institutions in Türkiye, combined with social norms and strict gender roles, erected cultural barriers to the educational participation of pious women and excluded them from public life. Removing cultural barriers and making the education system more inclusive through expansion of access to religion-friendly state-run Islamic schools induced religious parents to keep their daughters in secondary school after the girls' five-year compulsory education and led to women's empowerment and integration into public life.

5 Robustness Checks

5.1 No Evidence of Pre-existing Trends or Confounding Policies or Shocks

The main identifying assumption behind my empirical strategy is that in the absence of access to Islamic schools, the outcomes of female (male) cohorts living

[34]Opportunities for religious and veiled women in the private sector have historically been limited. However, the primary demand for the early female graduates of Islamic schools predominantly came from teaching-related occupations in religious subjects (Pak, 2004). These roles included positions as Islamic school teachers, educators in non-formal adult education institutions, and instructors in Quranic schools.

[35]Appendix Table C.3 presents the corresponding pooled differences-in-differences estimates for family and labor market outcomes for women, excluding those residing in Eastern and Southeastern Türkiye. The estimated effects are quantitatively similar and remain statistically significant. The main conclusions regarding reduced early adulthood fertility and increased labor force participation among treated female cohorts therefore remain unchanged.

Table 2: Access to Islamic School and Impacts on Family and Labor Outcomes

(a) Panel A. Full Sample

Outcome:	Ever Married (1)	1+ births (2)	Total Births (3)	2+ births (4)	3+ births (5)	Participate Labor Force (6)	Worked Last Week (7)
Islamic x Young	0.013	0.004	-0.036	-0.019*	-0.026**	0.026**	0.022*
	(0.011)	(0.006)	(0.033)	(0.011)	(0.012)	(0.013)	(0.012)
Outcome Mean	0.741	0.644	1.616	0.469	0.248	0.211	0.180
R^2	0.313	0.346	0.417	0.385	0.285	0.044	0.048
N	247346	247225	247225	247225	247225	247347	247338
Clusters	894	894	894	894	894	894	894
District-Center FE	✓	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓
Narrow Sample							

(b) Panel B. Narrow Sample

Outcome:	Ever Married (1)	1+ births (2)	Total Births (3)	2+ births (4)	3+ births (5)	Participate Labor Force (6)	Worked Last Week (7)
Islamic x Young	0.012	-0.000	-0.055*	-0.023*	-0.027***	0.027**	0.024*
	(0.010)	(0.005)	(0.031)	(0.013)	(0.010)	(0.013)	(0.013)
Outcome Mean	0.672	0.557	1.206	0.356	0.162	0.213	0.173
R^2	0.274	0.303	0.361	0.319	0.227	0.045	0.049
N	186368	186274	186274	186274	186274	186369	186361
Clusters	894	894	894	894	894	894	894
District-Center FE	✓	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓
Narrow Sample	✓	✓	✓	✓	✓	✓	✓

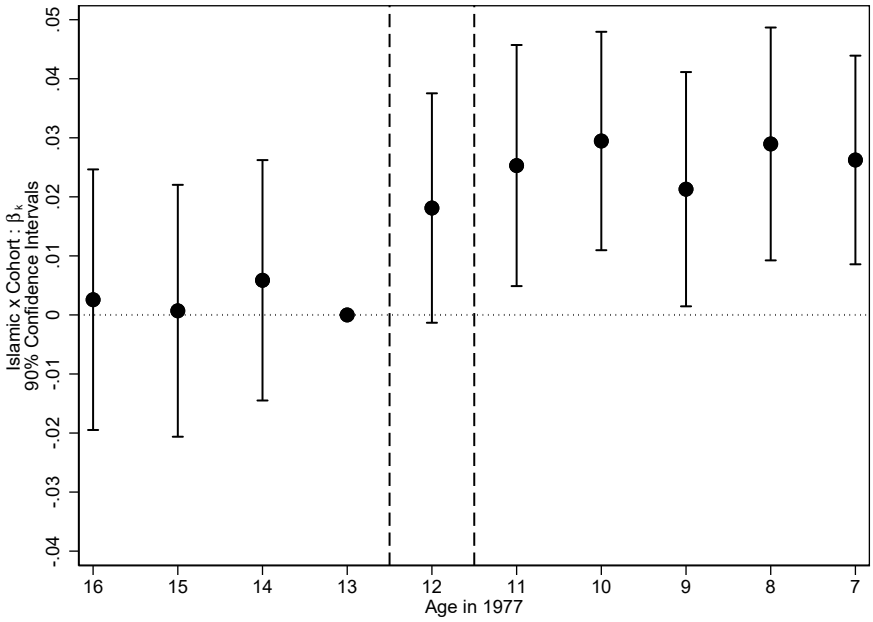
Notes: This table reports estimates of equation (2) for the subsample of women. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 and older than 4 in 1977. The full sample includes age-cohort 22 and younger in 1977, while the narrow sample includes age-cohort 17 and younger in 1977. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

in a district center with an Islamic school would otherwise have changed similarly, on average, to those of female (male) cohorts residing in a district center without an Islamic school. Even though this assumption is fundamentally untestable, the nonexistence of pretrends offers evidence in support of my parallel trends assumption. Note that the results presented in Figures 4 and 6 support this assumption. The point estimates of nonexposed cohorts for both genders are close to zero and do not follow any specific trends.

Panel (c) of Table C.1 suggests that the allocation of Islamic schools was indeed nonrandom. Yet, it is important to note that my identifying variation for girls' schooling primarily depends on the quasi-exogenous nature of the court ruling in 1976 that allowed girls to attend Islamic schools legally. Although there were large-scale initiatives to expand Islamic schooling in Türkiye, girls were not allowed to participate in Islamic schools. Neither the Islamist political party nor religious organizations attempted to abolish gender rule. It was only the individual initiative of a father led to the 1976 court ruling that rescinded the gender rule. To support this argument, I focus on cohorts becoming secondary schooling-age just around the court ruling year. Figure 10 shows that—although most of Islamic schools existed before the 1976 ruling—there is no correlation between Islamic school exposure and the likelihood of girls' lower secondary completion for older cohorts. However, right after the court decision, there is a sharp increase in the likelihood of completing lower secondary school for girls.

Another concern for my identification is the possibility of confounding policies or shocks that may overlap with the expansion of access to Islamic schools. However, the sharp change in the trends as seen in Figure 10 also rules out any secularly changing differential underlying trends in secondary schooling. To my knowledge, there were no other policy changes or time-variant shocks that could have differentially affected district centers with an Islamic school and the comparison group beginning from the year of extension of Islamic school access and persisting through the analysis period. The trend for exposed female cohorts is also similar to that observed in the official registration data plotted in Figure 2.

Figure 10: Access to Islamic Schools and Girls' Education – Cohorts Around the 1976 Ruling



Notes: This figure reports age-specific estimates of β_k and 95% confidence intervals in equation (1) for the subsample of women. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed lower secondary school. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. Cohort between two vertical lines is the half-exposed cohort. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged 13 in 1977 serve as the reference group. Standard errors clustered by district center of residence.

5.2 Migration and Province-level Evidence

A central concern regarding identification is that the effects are driven by mobility related to migration. Ideally, one would like to assign individuals to treatment based on where they resided at age 11, when the decision over their participation in secondary education was made. Since I do not have information about individuals' migration history, I define the assignment to treatment with respect to where

they resided during the 1990 census, assuming that they did not move after being of schooling age. This is not likely to be the case, as migration has been a common phenomenon in Türkiye since the 1980s.

To alleviate concerns related to mobility, I conduct several robustness checks. First, I use another identification strategy, defining assignment to treatment with respect to the individuals' province of birth instead of their locality of residence in the 1990 census. Second, I make several sample exclusions by dropping mobile individuals. Finally, I utilize a piece of information from the 1990 census that records individuals' residency in 1985. I assign individuals to treatment based on their residency in 1985 instead of 1990. I elaborate on the related analysis in detail and present my results in Appendix Section A.2. Overall, my findings remain robust to the aforementioned robustness checks related to mobility.

5.3 Additional Robustness Checks

Last, I conduct several additional robustness checks and present them in Appendix Section A. Specifically, Appendix Section A.3 shows that my main finding is robust to inclusion of several relevant control variables and sample restrictions. Appendix Section A.4 shows that my findings are robust to using an alternative estimator introduced by De Chaisemartin and d'Haultfoeuille (2020) that account for the bias in two-way fixed effect (TWFE) estimators due to staggered adoption designs and negative weights or treatment effect heterogeneity. Appendix Section A.5 demonstrates that access to Islamic school in district centers had no effect on rural residents, serving as a placebo sample.

6 Cultural Mechanism and the Evidence on the Supply of Secular Schools

Having documented a substantial and statistically significant increase in female education among affected cohorts that had access to Islamic schools, I now turn

to exploring whether the cultural factors were the main driver for these schools' success in promoting female educational attainment.

This section presents several lines of evidence that challenge a simple school-supply interpretation of my findings, instead offering stronger support for a cultural explanation. First, I demonstrate that the increase in female education was more pronounced in more conservative areas, which aligns with predictions from theoretical models in the cultural resistance literature. Then, I show that access to secular schools during an earlier period was not effective in increasing female education. Taken together, these two pieces of evidence suggests that the cultural channel is the most important driver of my findings, rather than alternative explanations related to the increase in school supply. These alternative explanations include the general increase in school supply for girls, increased competition between secular and religious schools for female students, and greater choice or shorter distance to the nearest school, which might be particularly relevant for girls.

6.1 Heterogeneous Effects Based on Conservativeness

Throughout this paper, I argue that the increase in female education is largely due to Islamic schools providing a culturally acceptable alternative for conservative parents. In the absence of Islamic schools, some parents may have opted against sending their daughters to secular secondary schools, viewing secular education as incompatible with their cultural and religious values. As a result, they may have withdrew their daughters from secondary education entirely. Carvalho et al. (2024) describe this withdrawal from education, referred to as '*dropping out*', as a form of resistance that *"occurs when individuals underinvest in education to avoid the cultural traits being transmitted by the education system"*.

According to Carvalho et al. (2024)'s theoretical model on cultural resistance to education, the likelihood of dropping out for individuals from a marginal or alternative culture increases (decreases) as the prevalence of individuals with mainstream cultural traits within the community decreases (increases). In my con-

text, the mainstream cultural transmission within the education system is secular, while the marginal cultural identity is characterized by conservative religious values. Therefore, access to Islamic schools, as a policy intervention that reduces cultural barriers in the education system and makes it more inclusive for girls from conservative family backgrounds, is expected to have a greater impact in more conservative areas, where higher dropout rates are predicted due to cultural resistance.

To test this hypothesis, I estimate the heterogeneous effects of Islamic school access on female educational attainment across varying levels of district center conservativeness. I use the vote shares of conservative center and right-wing parties in the 1973 general elections as a proxy for measuring the conservativeness of district centers. I then divide the 1973 conservative vote share into deciles, which I call *cons73d* (conservative vote share in 1973 – deciles). The spatial distribution of those deciles is presented in Appendix Figure D.38.[36]

I explore the heterogeneity of the effects of Islamic school access on educational outcomes with the following triple-differences model:

$$y_{ipdc} = \gamma_d + \delta_c + \beta(Young_c \times Islamic_{pd}) + \phi(Young_c \times Islamic_{pd} \times cons73d) + \theta(cons73d \times Young_c) + \sum_c \alpha_c \mathbf{X}_{pd} + \eta_{pc} + \epsilon_{ipdc}. \quad (3)$$

where the original DID variable $Islamic \times Young$ in equation (2) is interacted with *cons73d*. The coefficient of interest, ϕ, is expected to be positive and significant, indicating that cohorts in more conservative district centers experienced a greater impact when provided access to Islamic schooling as an alternative.

The results shown in Table 3 corroborate the working hypothesis: the effect of

[36]Since obtaining data on self-reported religiosity during my analysis period at the district level is not possible, I assess the relationship between my conservativeness proxy and self-reported religiosity using contemporary survey data. This data is derived from KONDA's surveys conducted between 2010 and 2015, as provided by Livny (2020). Appendix Figure D.39 illustrates a strong positive correlation between the vote share of conservative parties in 1973 and several self-reported religiosity outcomes for district centers where survey data is available.

Islamic school access on girls' schooling is larger for more conservative places. As shown in Table 3, the triple-difference coefficients are positive and statistically significant for lower and upper secondary schooling, at the 5% and 10% levels, respectively. These findings indicate that the effect of Islamic school access increases for district centers with higher values of *cons73d*, implying a stronger effect in more conservative areas. Notably, the coefficients for the original DID coefficient β become zero and are statistically nonsignificant, suggesting that the effect of Islamic school access operates primarily through the cultural channel. In terms of magnitude, the results imply that the difference in effect of Islamic school access between the first and tenth decile is of 4.5 and 2.7 percentage points for the likelihood of completing lower secondary and upper secondary school, respectively. Online Appendix Figures D.42 and D.43 also show an event study version of the triple-difference specification, supporting the parallel trends assumption. While the triple-difference coefficient estimates fluctuate around zero and are statistically nonsignificant for older cohorts, they become positive for younger affected female cohorts, albeit estimated less precisely for upper secondary schooling. The estimate for primary schooling, which is not directly affected by Islamic school access, is close to zero and statistically nonsignificant. Furthermore, Table 3 shows no heterogeneous effects of Islamic school access for men, with the triple-difference coefficients being precisely zero.

To explore potential nonlinearity in the relationship between conservativeness and the impact of Islamic school access, I also estimate a modified version of the triple-difference specification in equation (3), allowing the treatment effect to vary flexibly across deciles of baseline conservativeness (*cons73d*). Appendix Figures D.40 and D.41 plot decile-specific estimates for women's lower and upper secondary school completion, respectively, along with a LOWESS-smoothed curve and a cubic spline fit. This approach relaxes the linearity assumption and reveals a clear pattern: the effect is negligible in the least conservative districts, increases sharply in moderately conservative areas, and flattens out or declines slightly in the most conservative settings. The observed plateau in moderately conservative areas likely reflects the presence of complier parents who are culturally conserva-

Table 3: Heterogeneous Effects of Islamic School Access by Conservativeness

	Women			Men		
Outcome: [...] School Completed	Lower Secondary (1)	Upper Secondary (2)	Primary (3)	Lower Secondary (4)	Upper Secondary (5)	Primary (6)
Islamic x Young	0.001	0.006	0.001	0.007	-0.001	-0.000
	(0.015)	(0.009)	(0.008)	(0.012)	(0.011)	(0.003)
Islamic x Young x *cons73d*	0.005**	0.003*	0.001	0.000	0.001	0.001
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
R^2	0.096	0.077	0.175	0.049	0.045	0.062
N	299544	229053	299544	374830	295617	374830
Clusters	894	894	894	894	894	894
District-Center FE	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓

Notes: This table reports estimates of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1990. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 in 1977 for women and in 1974 for men. *cons73d* refers to the 1973 conservative vote share deciles. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

tive enough that traditional norms might discourage female education in secular schools but are also progressive enough to value education if cultural barriers are removed. Beyond moderately conservative areas, other barriers might come into play, or the pool of compliers might shrink, limiting further gains.

Overall, these findings indicate that the observed increase in female education cannot be solely attributed to a general expansion in school supply; instead, they provide strong support for a cultural mechanism driving this effect. Access to Islamic schools effectively promotes female educational attainment in more

conservative areas by offering a culturally acceptable alternative to secular schooling. The absence of heterogeneous effects for men also suggests that cultural barriers primarily constrained women's educational opportunities, likely due to traditional gender roles within Islam. This finding highlights a notable asymmetry in schooling decisions by gender, driven by cultural factors.

6.2 Other Evidence on the Supply of Secular Schools

Next, I conduct an empirical analysis similar to my main analysis to investigate whether the supply of those secular schools also led to an increase in educational attainment for women. To do so, I collected data on the expansion of secular schools between 1964 and 1972 from national education statistical yearbooks of Turkish Statistics Institute (DIE, 1968a,b, 1969, 1970, 1976, 1977a,b).[37] This time frame aligns with the decade before the Islamic schooling network expansion began in 1974. For lower secondary school openings, I use data from 1961 to 1966, as it is not possible to identify whether a school was opened in the center or rural regions of the district due to a data aggregation change made by the Turkish Statistics Institute in 1967. This is not a problem for other types of school openings, as they were almost exclusively opened in the capital city of a district.

Specifically, I estimate a modified version of the generalized difference-in-differences specification in equation (2) separately for the subsamples of men and women. In particular, I replace the $Islamic_{pd}$ dummy with dummies indicating whether a specific type of school opened between 1961 and 1966 for general lower secondary, and between 1964 and 1972 for remaining types of school.[38] I interact these treatment dummies with indicators $Age < 11$ in 1961 for lower secondary, $Age < 11$ in 1964 for vocational lower secondary, and $Age < 14$ in 1964 for both general and vocational upper secondary schools.[39] The rest of the specification

[37] In these statistical yearbooks, I am able to identify district centers until 1972. Starting from 1973, statistical yearbooks have started to report data at province level.

[38] My main finding on lower secondary education is robust to inclusion of 1960s secular school supply indicators, as seen in Appendix Figure D.25.

[39] Age 11 and 14 are the most common starting ages for lower and upper secondary education, respectively.

remains same as before.

Appendix Table B.1 presents the results on the effect of supply of secular schools on the completed educational levels of individuals. All estimates are around 0 and statistically nonsignificant, suggesting supply of secular schools did not increase the overall education levels of men and women in treated district centers relative to comparison district centers. Since many of these school supplies occurred through the opening of additional schools in urban cities or towns with universal access to education, they failed to accelerate the increase in schooling rates. Possibly, they primarily alleviated pressures on capacity or prompted a shift from the general track to the vocational track of secondary education. I further find no effect on total fertility and labor force participation for women, as seen in Appendix Table B.2.

These findings also align with my previous results for men, which suggest that access to Islamic schools did not raise educational levels among men significantly; rather, it prompted a substitution from secular schools to Islamic ones. In a separate study, Torun and Tumen (2019) similarly find that the introduction of non-Islamic vocational upper secondary schools in the 1970s did not increase men's educational attainment in Türkiye, instead it led to a shift from general track secondary schools to vocational track schools.[40]

Overall, these findings suggest that the general increase in the supply of schools is unlikely to explain my findings on the Islamic school's success in increasing female schools in Turkey during 1970s and 1980s. For a more detailed discussion on related topics, including greater school type choice, reduced distance to the nearest school, and increased competition between secular and religious schools for female students, please refer to Appendix Section B. I also examine the possibility of a demand-side explanation in Appendix Section B.3, where I discuss whether the observed increases in female educational participation could be attributed to broader shifts in societal attitudes rather than the direct impact of the policy intervention.

[40]This study does not analyze the impact of school openings on girls' educational outcomes.

7 Discussion

At this point, it is vital to discuss the temporal differences between my analysis period and contemporary Türkiye due to the recent reintroduction of Islamic schooling to lower secondary education in 2012 and the following expansion of Islamic schooling network. Particularly, I analyze the impact of access to Islamic schools in the Turkish context during a period when institutions were strongly secular and secondary education was low and voluntary, and the society was relatively more religious. Modern-day Türkiye has a relatively more secular population and significantly laxer secular institutions. Yet, modern-day Islamic school enrollments still make up about 12 to 14 percent of total enrollments in lower and upper secondary education and are at similar levels to their peak in the 1990s (see Appendix Figures D.10 and D.44).[41]

Although it would be interesting to study the impact of the regime-driven expansion of the Islamic school network by Islamists after 2012 on secondary education, it is challenging due to the twelve years of compulsory education law—also known as 4+4+4—enacted in 2012. The 4+4+4 law was bundled as a set of educational reforms to increase mandatory education to twelve years and to reintroduce Islamic schooling to the lower secondary level, followed immediately by the expansion of the Islamic school network. Therefore, it is empirically challenging to disentangle the impact of access to Islamic schools from the 2012 compulsory education law. Prior to the 2012 education reforms, the Turkish education law legally mandated eight years of compulsory education, and almost all girls (about 98%) were participating in lower secondary education. Therefore, it is unlikely that the reintroduction of Islamic schooling to lower secondary made any difference in increasing girls' lower secondary schooling since there is little room for improvement. It only made it available for religious parents to substitute secular lower secondary schools with Islamic ones, as seen in Appendix Figure D.45.

[41] It is also noteworthy that the share of Islamic school enrollment among the total enrollments after the initial increase and it seems that it reached its upper bound and is unlikely to increase further.

A more relevant case for contemporary Türkiye would be the upper secondary schooling of girls from religious families. Examining the 2012 compulsory education law, Erten and Keskin (2019) find that the reform increased girls' upper secondary schooling only in more religious conservative regions. Moreover, the authors find that marginal female students in those more religious regions chose to attend secondary schools with vocational status—a classification including Islamic schools and secular vocational schools—instead of secular academic schools.[42] Appendix Figures D.46 and D.47 also show that Islamic schools are currently the only school type with a gender ratio in favor of female students both at lower and upper secondary levels.

Taken together, it is possible that Islamic schools still help some of the female students from more religious conservative areas to participate in upper secondary education, who would otherwise be taken away by their religious parents due to cultural sensitivities. While for other female students substituting secular schools with Islamic ones, culturally favorable conditions of Islamic schools towards religious parents may be one of the main reasons behind their decisions.

8 Concluding Remarks

This paper studies the impacts of a culturally inclusive policy change that removed the religion-based barriers to education posed by strictly secular institutions in Türkiye by providing Islamic schools as an alternative to secular schools. Using cohort variation in exposure and district center-level variation in the availability of Islamic schools, I estimate the effects of access to Islamic schools in Türkiye during the 1970s and 1980s. The results reveal that being seen as religion-friendly schools, Islamic schools managed to induce women from religious communities to stay in school and led to an overall increase in secondary education levels. The effect for men was small and nonsignificant, implying that men primarily substituted secular schools with Islamic schools. In addition, I find

[42] During this period, the increase in Islamic high school enrollments were higher than the increase in secular vocational school enrollments.

that the impact of Islamic school access on girls' schooling was more pronounced in more conservative areas, where cultural barriers to secular schooling were particularly strong and restrictive. The results further reveal that women staying in school was accompanied by outcomes that corresponded to the initial aims of the secularization effort of the new Turkish Republic, such as lower fertility at early adulthood, delayed pregnancies, and higher labor force participation.

The findings of this article have two main implications. First, this paper implies that cultural constraints play a remarkable role in parents' decisions about their children's educational participation under specific circumstances. Differential effects by gender further indicate that cultural constraints to participating in education were binding primarily for female children from religious families in the Turkish context. This outcome suggests an asymmetry in parents' trust in secular schools by child gender. Second, it shows that when a cultural backlash exists, culturally inclusive policies that eliminate cultural barriers can effectively reverse the backlash and increase overall levels of education within the population. Although Islamic schools were habitually inclusive toward the pious, providing a safer school environment that removes a mixture of gender- and religion-related barriers may be sufficient to keep girls in school regardless of schools' religious status. Nevertheless, cultural exclusion is a reality for groups with marginalized identities, including those based on ethnicity, sexual orientation, migration, displacement, and race (UNESCO, 2020). It is therefore essential that policies for the design of educational institutions be of a culturally inclusive nature.

Outside of Türkiye, Islamic schooling is also a common phenomenon and significant Islamic schooling networks exist in several Muslim-majority countries in Asia and Africa. Unlike Türkiye, those schools are relatively more traditional-style madrasas and are primarily under the non-state religious bodies' control. A recent education report by UNESCO focuses on faith-based schools (both Christian and Islamic) and highlights their role in reducing the gender gap in education (UNESCO, 2022).[43] Asadullah and Maliki (2018) and Asadullah and

[43]For a deeper discussion about gender dimension of Islamic faith-based schools in Asia, see Asadullah (2022).

Chaudhury (2009) further provide descriptive evidence on the "girl effect" in madrasah enrollment in Indonesia and Bangladesh, and Franck and Johnson (2016) show descriptively that girls are more likely to enroll in a Catholic school than boys in historical France. Taken together with my findings, more research on the role of faith-based schools—regardless of their denomination—in other contexts is encouraged. Beyond religion, cultural barriers toward different cultural identities, such as ethnicity, race, language, migration status, etc., exist in many contexts. Therefore, more investigation is needed concerning cultural barriers toward groups with other sorts of cultural identities.[44]

While access to Islamic schooling has been shown to improve women's educational attainment, labor force participation, and delay early pregnancies, Benzer and Tukiainen (2025) uncover additional consequences that complicate these benefits. Specifically, they demonstrate that access to Islamic schools facilitated the emergence of predominantly male Islamist youth organizations, which played a pivotal role in shaping ideological commitments, mobilizing grassroots support, and ultimately securing the electoral success of an anti-establishment Islamist movement. This movement subsequently ascended to power in Türkiye, dismantling the secular and relatively democratic political order and establishing a new Islamist-nationalist authoritarian regime. This case highlights the complex role educational institutions can play not only in advancing individual outcomes but also in transforming political landscapes.

[44]The role of culture in education in Africa has been a focal point in various fields of social sciences due to its colonial history (e.g., Brenner, 2007; Csapo, 1981; Moumouni, 1968; Nduka, 1964; Niles, 1989; Platas, 2018).

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A Online Appendix - Additional Empirical Results and Robustness Checks

A.1 Evidence on Gender Gap

To analyze gender gap in education, I benefit from the growing access to Islamic schools that happened around the same period for both men and women to reveal heterogeneity in the effect of the treatment between genders. Here, I focus on exposed cohorts aged 11 or younger in 1977. Therefore, I exclude the first three fully exposed boy cohorts from this analysis, as women of same cohorts had no access to Islamic schools. I use a specification akin to a triple-differences strategy by interacting every term in equation (2) with the I_g variable indicating the gender of an individual and estimate the following equation on the pooled sample of men and women:

$$y_{ipdc} = \beta(Young_c \times Islamic_{pd} \times I_g) + \theta^m(Young_c \times Islamic_{pd}) + \gamma_d I_g + \eta_{pc} I_g + \sum_c \alpha_c log(pop70)_{pd} I_g + \epsilon_{ipdc}, \tag{4}$$

where $\beta = \theta^f - \theta^m$ is the coefficient of interest that captures the change in gender differences in educational attainment after the expansion of access to Islamic schools. As I interact every term in equation (2) with I_g, $\gamma_d I_g$ and $\eta_{pc} I_g$ are full sets of gender-specific fixed effects. I also include interactions between cohort dummies, the gender indicator and $log(pop70)_{pd}$, the natural log of the population size of district center d in 1970. I cluster robust standard errors at the district center level.

Table A.1 presents the estimates of the triple-differences specification outlined in equation (4) on educational attainment at different levels of education. Column 1 in panel (a) shows that exposed girl cohorts are 1.3 p.p. (s.e=0.8 p.p.) more likely to have completed lower secondary school than exposed boy cohorts who experienced expanding access to Islamic schools around the same period. This effect corresponds to a 9% reduction in the gender gap in relative terms. The estimated

Table A.1: Heterogeneous Effects on Education by Gender

(a) Panel A. Islamic school access in 1977

	Outcome: [...] School Completed		
	Lower Secondary (1)	Upper Secondary (2)	Primary (3)
Islamic x Young x Female	0.013	0.013**	0.003
	(0.008)	(0.006)	(0.007)
Islamic x Young	0.009	0.004	0.002
	(0.007)	(0.007)	(0.002)
Outcome Mean (Men - Women)	0.142	0.112	0.107
R^2	0.095	0.077	0.180
N	608829	459125	608829
Clusters	894	894	894
District-center FE	✓	✓	✓
Province-by-cohort FE	✓	✓	✓
Baseline Controls	✓	✓	✓

(b) Panel B. Placebo Islamic school access in 1957

	Outcome: [...] School Completed		
	Lower Secondary (1)	Upper Secondary (2)	Primary (3)
Islamic x 1957 Placebo x Female	-0.011	-0.006	0.006
	(0.008)	(0.008)	(0.010)
Islamic x 1957 Placebo	0.011	0.009	0.004
	(0.008)	(0.007)	(0.006)
Outcome Mean (Men - Women)	0.185	0.134	0.279
R^2	0.137	0.113	0.261
N	331266	331266	331266
Clusters	894	894	894
District-center FE	✓	✓	✓
Province-by-cohort FE	✓	✓	✓
Baseline Controls	✓	✓	✓

Notes: This table reports estimates of equation (4). The sample contains only individuals residing in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged between 2 and 11 in 1977 for the main experiment in panel (a). In panel (b), 1957 Placebo refers to cohorts aged between 2 and 11 in 1957. The Young and 1957 Placebo dummies take 0 for cohorts aged between 13 and 22 in 1977 for the main experiment and in 1957 for the placebo experiment. Female is an indicator of an individual's gender. All specifications include the interaction of the gender indicator *Female* with district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

coefficients for upper secondary school completion rates are similar in magnitude and more precisely estimated. As one would expect, the estimated coefficients for the likelihood of completing primary school in column 3 are nonsignificant and similar to the placebo coefficients. Access to Islamic schools reduces the gender gap only for the level of education targeted by the treatment. As shown in panel (b), there is no statistically significant effect found in the placebo test that posits an imagined expansion of access to Islamic schools happening 20 years earlier in 1957. The coefficient in column 1 is negative, indicating that the gender gap at that time was in fact enlarging in favor of men. The expansion of access to Islamic schools in 1977 reverted this trend and decreased the gender gap in favor of women.

A.2 Migration and Province-level Evidence

To alleviate concerns related to mobility, I conduct several robustness checks. First, I use another identification strategy, defining assignment to treatment with respect to the individuals' birth locations instead of their locality of residence in the 1990 census. As all the affected girl cohorts (and most of the exposed boy cohorts) were already born prior to the expansion of access to Islamic schools, location of birth and access to Islamic schools are unlikely to be endogenous to each other. Even though it is not possible to identify the district center of birth for individuals, I can identify the province of birth and whether individuals were born in any of the district centers within their province. I restrict my sample to individuals born in any district center. I construct an intensity variable to measure the exposure to treatment at the province level. Intensity is the number of Islamic schools within province p in 1980 divided by the average size in young cohort by gender in province p cohort c scaled by 1000. I employ a dynamic difference-in-differences strategy as before and estimate the following equation separately for both the boy and girl subsamples:

$$y_{ipc} = \gamma_p + \delta_c + \sum_l \beta_k (I_c^k \times Intensity_{pc}) + \epsilon_{ipc}, \tag{5}$$

where y_{ipc} is my main outcome variable of interest: the likelihood of completing lower secondary school. γ_p and δ_c are the full sets of province of birth and birth cohort fixed effects. I_c^k is an indicator for 3-age cohorts. I cluster robust standard errors at the level of province of birth.

Appendix Figure D.30 presents the estimated coefficient of equation (5) for both genders.[45] There are no pretreatment differences in the estimated coefficients for unexposed cohorts of either gender. The coefficients are close to 0 and statistically highly nonsignificant for women. For men, there is a slight upward trend prior to the treatment, and it seems that it continues after the expansion of access as well. The estimates become positive and statistically significant for the exposed girl cohorts, with a consistent upward trend after the expansion of access to Islamic schools. These results support that it is unlikely that my results are mainly driven by mobility.

I conduct additional checks to mitigate concerns over selective migration and present them in Appendix Figure D.26. The first rows in each gender panel present my main results on the likelihood of completing lower secondary school for comparison. Migration from rural areas to urbanized district centers has been the most common migration pattern observed in Türkiye since the 1950s. To rule out differential trends in rural-to-urban migration as a driver of the effect, I drop all individuals born in rural areas from my sample. The estimated coefficients are unaffected for the subsample of boys and grow even larger for the subsample of girls. Second, I drop all interprovince movers from my sample. The estimated coefficients are nearly identical to those in the baseline. Thus, interprovince mobility is not the driving force behind my results. Last, I drop all individuals who report having moved from where they lived five years ago, and the coefficients again remain similar.

Finally, I utilize a piece of information from the 1990 census that records individuals' residency in 1985. I assign individuals to treatment based on their residency in 1985 instead of 1990. By doing this, I assign individuals to the

[45] Appendix Figure D.31 presents relevant estimates for my placebo sample consisting only of rural-born individuals.

locations where they lived when they were closer to schooling age, especially treated younger cohorts. However, this method involves two potential biases. First, people may misreport where they lived five years ago, and some might record this location as unknown and therefore be excluded from the analysis. This would lead to an attenuation bias if misreporting is random. Second, there may be sampling bias since sampling is conducted according to 1990 census locations, so some areas may be oversampled. Nevertheless, I do the same analysis for all outcomes and present them in the appendix. Appendix Table C.4 reports the estimates from the standard DID specification in equation 1 by assigning individuals to treatment according to their residency in 1985. Although the magnitude of the likelihood of completing lower secondary school is slightly less pronounced for both genders, the remaining estimates are similar to those in the main analysis. I further present the dynamics of the treatment effects in Appendix Figures D.27, D.28 and D.29. Overall, the trends and main takeaways remain unchanged, and this exercise provides further evidence that my results are unlikely to be mainly driven by mobility.

A.3 Inclusion of Relevant Controls and Sample Restrictions

Here, I conduct several other robustness checks and present them in panels (a) and (b) of Figure D.25 for women and men, respectively. The first rows of each gender panel present my main results on the likelihood of completing lower secondary school for comparison. The second rows include as controls the average value of the dependent variable for the nonexposed cohorts interacted with cohort dummies.

The third rows exclude district centers located in eastern and southeastern Türkiye, where availability of religious schools was rare and girls' education levels were remarkably low. The results are robust, suggesting that the evolution of lower secondary school completion rates in those regions does not drive my results. The fourth rows drop cohorts who came of secondary school age during military rule. The estimated coefficients become slightly larger and more

significant for women. The fifth and sixth rows exclude relatively large and small district centers, respectively, and the estimates remain unchanged. The seventh rows exclude schools opened after the 1977 court ruling. The eighth rows include railroad access interacted with cohort dummies. The ninth rows exclude district centers with an Islamic school prior to the school expansion and groups of military service age in the male subsample. Tenth row control for the supply of schools in 1960s separately for each school type. Eleventh row control for province of birth and whether birth locality was district center or rural. Finally, I show that my results on education are not sensitive to different bandwidth selections in Appendix Table C.5. Overall, all results are highly robust to the multiple checks conducted in this section.

Last, Appendix Figures D.35, D.36, and D.37 present the added variable plots of all outcomes for the main analysis.

A.4 Alternative Estimator

A growing literature in DID methodology raises concerns about the bias in two-way fixed effect (TWFE) estimators due to staggered adoption designs and negative weights or treatment effect heterogeneity. This paper uses a generalized DID design that lets the treatment status change only at a single point in time for all treated cohorts while the comparison group's treatment status remains unchanged. Thus, the former concern is irrelevant to my design.[46] However, as suggested by De Chaisemartin and d'Haultfoeuille (2020), there may still be bias in the TWFE estimator from the existence of treatment heterogeneity. To alleviate these concerns, I utilize the DIDM estimator developed by De Chaisemartin and d'Haultfoeuille (2020) for education outcomes and present the results in Appendix Figure D.19 with baseline controls and Appendix Figure D.20 without controls. Both figures show that the estimates and trends from the DIDM estimator are largely similar to those from the TWFE estimator, albeit with a slight loss of

[46] I further check for the existence of any negative weights in my estimation using the *twowayfeweights* Stata command introduced by De Chaisemartin and d'Haultfoeuille (2020) and find no negative weights in my TWFE estimation.

precision under the DIDM estimator.[47] Consequently, this robustness check offers reassurance that my results are not sensitive to the treatment heterogeneity.

A.5 Rural Sample as a Placebo

Islamic schools were located in cities with district center status, and the registration area of these schools was narrow, as the road and transportation network was limited.[48] Most of the rural towns and villages fell outside the purview of Islamic schools. Although there were some schools, mostly located in province capitals, which had dormitories to accommodate students from rural areas, these dormitories were available only for male students.[49] For individuals in rural areas outside the registration area of Islamic schools, one would not expect to find any significant effect of access to Islamic schools on educational attainment. I explore this by estimating equation 2 for the sample of rural residents as a placebo test. Appendix Table C.6 reports the estimated coefficients for the male and female subsamples separately. For rural girls, all the estimates are small in magnitude and statistically highly nonsignificant. For rural men, the estimates are relatively larger and similar to those of the district center sample. This may be due to the availability of dormitories for male students.[50] There is no effect on the likelihood of completing any schooling or being literate, as Islamic schools did not operate at the primary level. I further present the dynamics of the treatment effect for all outcomes in Appendix Figures D.11, D.12 and D.13 from equation (1) for the rural

[47] Appendix Figures D.21, D.22, D.23, and D.24 present a similar pattern for family and labor outcomes.

[48] There is also evidence on the role of distance to school on girls' schooling suggesting that parents worry about the safety of their daughters in longer commutes to school and keep them away from education (Burde and Linden, 2013; Muralidharan and Prakash, 2017). It is possibly an important factor of concern, especially for religious families. Nevertheless, I show that my results remain robust when I include access to railroads as a control in Appendix Figure D.25.

[49] Besides the limited—if not non-existent—access to dormitories for female students, it is also unlikely for them to stay together with any other household besides their first-degree relatives due to honor-related concerns and daughter-shielding in Islam.

[50] In fact, more than half of the male registrations in Islamic lower secondary schools from between 1967 and 1973 correspond to students from rural villages (DIE, 1977a). This information is not available for my analysis period.

sample.

B Alternative Explanations

In this section, I discuss more in detail the alternative explanations that might be influencing my results on female education, including increased competition between secular and religious schools for female students, greater school choice, and shorter distances to the nearest school, which may be particularly significant for girls.

B.1 More School Type Choice and Shorter Distance to the Nearest School

One concern is whether increased school choice or shorter distances to schools might explain the rise in female education observed in treated districts.

First, it is a priori not clear why having more school type choice should affect men's and women's educational levels differentially. Nevertheless, as I already presented in Appendix Table B.1, I find no effect in educational attainment of women when a new vocational lower or upper secondary school opened in a district center, suggesting more school type choice was not effective in increasing educational attainment of women.

Previous literature also suggests that the distance to school may be an important factor for schooling decision of parents for their daughter due to security related concerns, especially in relatively less secure countries (Muralidharan and Prakash, 2017; Burde and Linden, 2013). It is true that opening of an Islamic school decreases the distance to closest school for some girls. However, Muralidharan and Prakash (2017) find that a bicycle provision intervention alleviating distance related concerns to school participation was only effective in increasing female schooling for intermediate distances between 5 and 13 kilometers. Their theoretical model also predicts that the distance related concerns are not binding for close distances. In my sample, the diameter of a district center with an average

population size is less than 2 kilometers.[51] Since all district centers with an Islamic schools already had lower and upper secondary schools prior to Islamic school access, the reduction in distance to nearest school is negligible. Furthermore, Appendix Table B.1 shows that the supply of non-Islamic vocational schools, which also decreases the distance to nearest schools for some girls, were not effective in increasing female schooling. As a result, it is highly unlikely that the reduction in distance to the nearest school would explain my main findings.

B.2 Increased Competition Between Secular and Religious Schools for Female Students

One of the drawbacks of Turkish population censuses is the lack of information about secular/Islamic status of school attended. Although there is information on whether the latest completed education is vocational or general education, this information includes severe measurement error and underestimate the number of vocational school graduates.[52] The lack of information on the type of schooling raises concern about whether the increase in schooling were driven by secular schools if Islamic school access increased competition between secular and religious schools for female students. In the 1970s Indonesia setting, Bazzi et al. (2020) show that state and religious (private) providers of education may compete with each other to attract students into their sector by entering new markets, becoming more formal, and introducing more religious/secular curriculum.

First, it is important to highlight that secular and Islamic schools were operated by the Ministry of Education in the Turkish context, therefore from the

[51] See Appendix Figure D.5 for dimensions of cities with contemporary population sizes of 17000 (mean 1970 population size in my sample) and 70000.

[52] This is likely due to census staff only asking individuals the level of schooling completed and ignore schooling type. For example, while the 1990 census had about four thousand individuals with a lower secondary vocational education that were graduated in the last three cohorts, official education statistics report about fifty thousand individuals graduated with a lower secondary vocational education in the last three years prior to the census (DIE, 1993). It is important to note that more than 70% of these "vocational lower secondary school" graduates were graduated from Islamic schools.

supply-side perspective, the competition is less of a concern as the state has monopoly in secular and religious education. I am also not aware of any policy changes around the same time as Islamic school access that would make secular schooling more attractive in the eyes of religious parents and would affect treated and comparison district centers differentially. Moreover, I am not aware of any evidence on secular schools lowering barriers to entry for female students by loosening religion-related restrictions in the later years. If anything, strictly secular restrictions became more prominent in the 1980s and 1990s after the 1980 Turkish coup d'état. Although Islamists won the 1994 local and the 1995 general elections—promising to abolish headscarf ban in public institutions–they failed to relax secular institutions, and the Islamist Refah Party was eventually shut down by the Supreme Court after the 1997 army intervention.[53]

Second, the competition between secular and religious school, if exists in my setting, is at best a second-order effect of access to Islamic schools. Such a second-order effect is unlikely to materialize in the very short-run and the increase in female schooling should be driven by the first-order effect that is new registrations to Islamic schools. As seen in Figure 10, the likelihood of completing lower secondary schools starts to increase for the very first treated female cohorts after the Islamic school access. The magnitudes of older treated cohorts are also at similar levels as the estimates of younger treated cohorts. Moreover, Appendix Table B.1 shows that the supply of secular schools a decade prior to Islamic school access did not increase the educational participation of women, although secular enrollments were a first-order effect in that case. Therefore, it is highly unlikely that secular enrollments, as a second-order effect, could explain the increase in female schooling after Islamic school access.

Third, national-level evidence on 6th grade enrollment rates in Figure 5 also suggest that the increasing trend in enrollment to secular schools did not change its slope after the 1976 decision. Islamic school registrations, on the other hand,

[53]For the decision, see Anayasa Mahkemesi decision nr.: 1998/1. Headscarf ban in secular secondary schools strictly enforced up until 2008 and officially abolished in 2014 (see Resmi Gazete nr.: 29132).

were the main driver behind the increased growth rate of total 6th grade enrollments. Given empirical findings presented above and institutional context, it is highly unlikely that potential competition between secular and religious school could explain the main findings of this paper.

Finally, my findings in Section 6 on the heterogeneous effects of access to Islamic schools by conservativeness challenge the increased competition explanation. Specifically, the effect of access to Islamic schools was more pronounced in more conservative areas, making it counterintuitive that secular schools could attract female students in such contexts. Given empirical findings presented above and institutional context, it is highly unlikely that potential competition between secular and religious school could explain the main findings of this paper.

B.3 Alternative Demand-Side Explanation

One potential alternative explanation for the observed increase in female educational participation is that the 1976 Council of State ruling, which granted girls the legal right to attend Islamic schools, may have been interpreted as a broader signal of easing restrictions on women's participation in society. By challenging the existing gender norms embedded in the education system, the ruling could have indirectly influenced societal attitudes toward female education and encouraged conservative families to view schooling as a more viable and acceptable option for their daughters. This shift in perception might have led to an increase in demand for schooling among women, independent of the specific cultural alignment offered by Islamic schools.

However, while this interpretation holds merit, such societal changes are typically gradual and diffuse, making it difficult to attribute the sudden and localized increases in female education rates observed in this study solely to an indirect demand-side effect of the ruling. These changes in societal attitudes toward female education stem from long-term processes such as economic development, cultural modernization, or sustained advocacy efforts. These processes are unlikely to produce the kind of sharp, immediate increases in female ed-

ucational participation that are evident in Figure 10. The figure shows a clear, discontinuous jump in female education levels corresponding to the timing of the policy intervention. This pattern strongly suggests that the observed change was triggered by the sudden availability of a culturally aligned schooling option, rather than a gradual, society-wide evolution in attitudes. If demand-side shifts were the primary driver, one would expect to see a smoother, more incremental increase in female education rates over time.

Moreover, the differential impact by gender further weakens the case for a general demand-side explanation. A societal shift toward valuing female education would likely affect boys and girls more uniformly, yet the data show a pronounced effect for girls, consistent with the mitigation of specific cultural barriers that disproportionately affected them.

In conclusion, the timing and magnitude of the observed changes in female educational participation make a gradual, demand-side explanation highly unlikely as the primary driver of the results. Instead, the evidence strongly supports the role of the policy intervention in removing cultural barriers to education for girls.

Table B.1: Access to Secular Schools and Educational Attainment

	Outcome: [...] School Completed			
	Lower Secondary		Upper Secondary	
	(1)	(2)	(3)	(4)
Lower Secondary 1961-1966 x < Age 11 in 1961	-0.000			
	(0.007)			
Voc. Lower Secondary 1964-1972 x < Age 11 in 1964		-0.011		
		(0.012)		
Upper Secondary 1964-1972 x < Age 14 in 1964			-0.006	
			(0.004)	
Voc. Upper Secondary 1964-1972 x < Age 14 in 1964				0.007
				(0.006)
Outcome Mean:	0.196	0.222	0.140	0.140
R^2	0.116	0.105	0.102	0.102
N	179508	204997	179508	179508
# of Treated District Centers	213	70	310	138
Clusters	894	894	894	894
Cohorts Included	1939-1959	1942-1962	1939-1959	1939-1959
District-Center FE	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓

Notes: This table reports estimates of a modified version of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1990. Each row includes a treatment dummy indicating whether a specific type of school opened between 1961 and 1966 for general lower secondary, or between 1964 and 1972 for remaining types of school. < Age 11 (14) refers to cohorts aged less than 11 (14) during the start of secular school expansion analysis period. Individuals aged 12 in the beginning of expansion year are excluded as they may include members of the exposed and nonexposed cohorts together due to the calendar effect. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. The baseline controls include the log of the 1970 district center population sizes and 1973 conservative parties vote shares interacted with cohort dummies. *p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

Table B.2: Access to Other Type of Schools and Fertility-Labor Outcomes

Outcome:	Total Births				Participate Labor Force			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lower Secondary 1961-1966 x < Age 11 in 1961	-0.040				0.001			
	(0.045)				(0.009)			
Upper Secondary 1964-1972 x < Age 14 in 1964		-0.020				-0.006		
		(0.040)				(0.007)		
Voc. Lower Secondary 1964-1972 x < Age 11 in 1964			0.102**				0.008	
			(0.048)				(0.006)	
Voc. Upper Secondary 1964-1972 x < Age 14 in 1964				-0.022				0.005
				(0.056)				(0.007)
Outcome Mean:	3.37	3.37	2.96	3.37	0.18	0.18	0.19	0.18
R^2	0.240	0.240	0.240	0.240	0.056	0.056	0.052	0.056
N	144466	144466	164980	144466	144527	144527	165053	144527
# of Treated District Centers	213	310	70	138	213	310	70	138
Clusters	893	893	894	893	893	893	894	893
Cohorts Included	1944-1959	1944-1959	1947-1962	1944-1959	1944-1959	1944-1959	1947-1962	1944-1959
District-Center FE	✓	✓	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓	✓	✓
1970 Population Control	✓	✓	✓	✓	✓	✓	✓	✓
Narrow Sample	✓	✓	✓	✓	✓	✓	✓	

Notes: This table reports estimates of a modified version of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1990. Each row includes a treatment dummy indicating whether a specific type of school opened between 1961 and 1966 for general lower secondary, and between 1964 and 1972 for remaining types of school. < Age 11 (14) refers to cohorts aged less than 11 (14) during the start of secular school expansion analysis period. The narrow sample includes age-cohort 17 and younger in 1961 for lower secondary school openings and in 1964 for the rest. Individuals aged 12 in the beginning of expansion year are excluded as they may include members of the exposed and nonexposed cohorts together due to the calendar effect. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies.

*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

C Online Appendix - Additional Tables

Table C.1: Summary Statistics

(a) Panel A. Women

	Old Cohorts			Young Cohorts		
	Obs.	Mean	S.D.	Obs.	Mean	S.D.
Lower Secondary School Completed	137644	0.28	0.45	161900	0.40	0.49
Upper Secondary School Completed	137644	0.21	0.40	91409	0.28	0.45
Primary School Completed	137644	0.83	0.38	161900	0.90	0.30
Ever Married	137581	0.92	0.27	109644	0.51	0.50
Total Births	137581	2.43	1.78	109644	0.60	0.96
1+ Births	137581	0.86	0.34	109644	0.37	0.48
2+ Births	137581	0.72	0.45	109644	0.16	0.36
3+ Births	137581	0.41	0.49	109644	0.05	0.21
Participate Work Force	137644	0.20	0.40	109703	0.23	0.42
Worked Last Week	137641	0.19	0.39	109697	0.17	0.38

(b) Panel B. Men

	Old Cohorts			Young Cohorts		
	Obs.	Mean	S.D.	Obs.	Mean	S.D.
Lower Secondary School Completed	144172	0.45	0.50	230658	0.50	0.50
Upper Secondary School Completed	144172	0.33	0.47	151445	0.35	0.48
Primary School Completed	144172	0.96	0.20	230658	0.96	0.19

(c) Panel C. District-centers

	Without Islamic School			With Islamic School		
	Obs.	Mean	S.D.	Obs.	Mean	S.D.
Population in 1970	521	8934.64	29518.56	373	27491.98	47436.04
Conservative Parties' Vote Share in 1973 (%)	521	62.52	17.66	373	61.76	15.43
Railroad in 5 km	521	0.18	0.39	373	0.32	0.47
Province Capital	521	0.05	0.21	373	0.23	0.42

Notes: The table reports summary statistics on education-related outcomes of old cohorts (aged between 13 and 22 in 1977 for women and in 1974 for men) and young cohorts (aged between 2 and 11 in 1977 for women and aged between -1 and 11 in 1974 for men) in Panels A and B. In Panel A, the table reports summary statistics on family and labor outcomes for women, excluding individuals residing in southeastern and eastern Türkiye. Panel C reports several district center-level characteristics used in my analysis. The data for 1973 elections comes from publications of the Turkish Statistical Institute that document every election held in Türkiye. This dataset offers ballot-level information on votes cast for political parties in national elections, as well as on voter turnout. The data on railroads in 1973 is obtained from Akgüngör et al. (2011).

Table C.2: Islamic schools and Level Differences in Older Female Cohorts' Educational Attainment

	Outcome: [...] School Completed					
	Lower Secondary			Upper Secondary		
	(1)	(2)	(3)	(4)	(5)	(6)
Islamic	0.053***	0.041***	0.009	0.043***	0.033***	0.007
	(0.009)	(0.008)	(0.008)	(0.008)	(0.006)	(0.007)
R^2	0.042	0.299	0.348	0.039	0.304	0.350
N	894	894	894	894	894	894
Clusters	73	73	73	73	73	73
Province FE		✓	✓		✓	✓
Baseline Controls			✓			✓

Notes: This table reports estimates from a specification regressing an Islamic school indicator on the average lower or upper secondary school completion rates in district centers. The sample is restricted to older female cohorts, specifically those aged over 11 in 1977 that came secondary school age before Islamic school access. Baseline controls include the logarithm of 1970 district center population sizes and the 1973 combined vote shares of conservative parties.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by province.

Table C.3: Access to Islamic School and Impacts on Family and Labor Outcomes (Eastern and Southeastern Türkiye excluded)

(a) Panel A. Full Sample

Outcome:	Ever Married (1)	1+ births (2)	Total Births (3)	2+ births (4)	3+ births (5)	Participate Labor Force (6)	Worked Last Week (7)
Islamic x Young	0.014	0.004	-0.059*	-0.020*	-0.029**	0.029**	0.024*
	(0.011)	(0.006)	(0.034)	(0.011)	(0.012)	(0.014)	(0.013)
R^2	0.315	0.347	0.391	0.381	0.257	0.039	0.043
N	219297	219197	219197	219197	219197	219298	219289
Clusters	750	750	750	750	750	750	750
District-Center FE	✓	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓
Narrow Sample							

(b) Panel B. Narrow Sample

Outcome:	Ever Married (1)	1+ births (2)	Total Births (3)	2+ births (4)	3+ births (5)	Participate Labor Force (6)	Worked Last Week (7)
Islamic x Young	0.013	-0.001	-0.074**	-0.025*	-0.030***	0.030**	0.026*
	(0.010)	(0.005)	(0.032)	(0.013)	(0.011)	(0.014)	(0.014)
R^2	0.276	0.303	0.342	0.314	0.196	0.039	0.044
N	164053	163979	163979	163979	163979	164054	164046
Clusters	750	750	750	750	750	750	750
District-Center FE	✓	✓	✓	✓	✓	✓	✓
Province-by-Cohort FE	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓
Narrow Sample	✓	✓	✓	✓	✓	✓	✓

Notes: This table reports estimates of equation (2) for the subsample of women. The sample contains only individuals residing in a district center in 1990, excluding district centers in the eastern and southeastern regions of Türkiye. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 and older than 4 in 1977. The full sample includes age-cohort 22 and younger in 1977, while the narrow sample includes age-cohort 17 and younger in 1977. All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

Table C.4: Access to Islamic Schools and Educational Attainment – Assigned according to 1985 Residency

(a) Panel A. Women

	Outcome: [...] School Completed					
	Lower Secondary		Upper Secondary		Primary	
	(1)	(2)	(3)	(4)	(5)	(6)
Islamic x Young	0.018**	0.015*	0.017**	0.015***	-0.001	0.004
	(0.009)	(0.008)	(0.007)	(0.005)	(0.007)	(0.004)
Outcome Mean	0.343	0.343	0.238	0.238	0.868	0.868
R^2	0.096	0.103	0.075	0.080	0.175	0.186
N	292292	292292	223363	223363	292292	292292
Clusters	894	894	894	894	894	894
District-center FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓		✓		✓	
Province-by-cohort FE		✓		✓		✓
Baseline controls		✓		✓		✓

(b) Panel B. Men

	Outcome: [...] School Completed					
	Lower Secondary		Upper Secondary		Primary	
	(1)	(2)	(3)	(4)	(5)	(6)
Islamic x Young	0.010	0.005	0.008	0.005	-0.001	0.001
	(0.007)	(0.007)	(0.006)	(0.006)	(0.002)	(0.002)
Outcome Mean	0.477	0.477	0.337	0.337	0.961	0.961
R^2	0.041	0.047	0.036	0.043	0.056	0.064
N	367962	367962	291159	291159	367962	367962
Clusters	894	894	894	894	894	894
District-center FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓		✓		✓	
Province-by-cohort FE		✓		✓		✓
Baseline controls		✓		✓		✓

Notes: This table reports estimates of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1985. Islamic refers to district centers with an Islamic school in 1980. Individuals are assigned to the treatment variable *Islamic* according to their residency in 1985. Young refers to cohorts aged less than 11 in 1977 for women and in 1974 for men. Odd columns include only district center and age-cohort fixed effects as controls. Even columns include district center and province-by-cohort FE and the baseline controls interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

Table C.5: Access to Islamic Schools and Educational Attainment – Robustness to Different Bandwidths

(a) Panel A. Women

	Outcome: [...] School Completed							
	Lower Secondary			Upper Secondary		Primary		
Bandwidth:	N=10	N=7	N=4	N=7	N=4	N=10	N=7	N=4
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Islamic x Young	0.021***	0.020***	0.022***	0.018***	0.021***	0.006	0.004	0.005
	(0.008)	(0.007)	(0.007)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)
Outcome Mean	0.342	0.341	0.333	0.236	0.235	0.867	0.872	0.876
R^2	0.096	0.086	0.076	0.077	0.070	0.175	0.170	0.154
N	299544	208701	101254	229053	143199	299544	208701	101254
Clusters	894	894	888	894	892	894	894	888
District-center FE	✓	✓	✓	✓	✓	✓	✓	✓
Province-by-cohort FE	✓	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓	✓

(b) Panel B. Men

	Outcome: [...] School Completed								
	Lower Secondary			Upper Secondary			Primary		
Bandwidth (Pre & Post):	N=10 N=13	N=7 N=10	N=4 N=7	N=10	N=7	N=4	N=10 N=13	N=7 N=10	N=4 N=7
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Islamic x Young	0.009	0.008	0.008	0.009	0.012**	0.002	0.002	0.003	0.002
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.002)	(0.002)	(0.002)
Outcome Mean	0.476	0.481	0.483	0.336	0.340	0.344	0.960	0.962	0.964
R^2	0.049	0.048	0.046	0.049	0.044	0.045	0.062	0.063	0.063
N	374830	277593	176098	374830	204921	114073	374830	277593	176098
Clusters	894	894	894	894	894	894	894	894	894
District-center FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Province-by-cohort FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: This table reports estimates of equation (2) separately for women and men. The sample contains only individuals residing in a district center in 1990. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 in 1977 for women and in 1974 for men. All specifications include district center and province-by-cohort FE, the baseline controls interacted with cohort dummies.
*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district center of residence.

Table C.6: Access to Islamic School and Educational Attainment for Rural Sample (Placebo Test)

(a) Panel A. Women

	Outcome: [...] School Completed		
	Lower Secondary (1)	Upper Secondary (2)	Primary (3)
Islamic x Young	0.003	0.003	-0.006
	(0.004)	(0.003)	(0.007)
Outcome Mean	0.078	0.045	0.742
R^2	0.073	0.050	0.317
N	189762	132520	189762
Clusters	888	887	888
District-center FE	✓	✓	✓
Province-by-cohort FE	✓	✓	✓
Baseline Controls	✓	✓	✓

(b) Panel B. Men

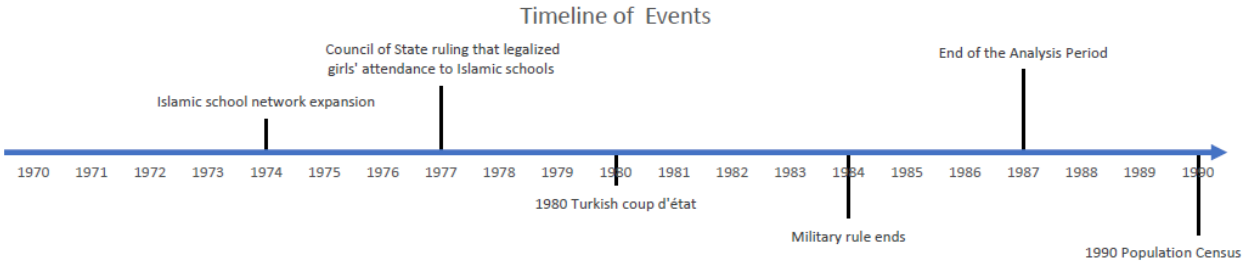
	Outcome: [...] School Completed		
	Lower Secondary (1)	Upper Secondary (2)	Primary (3)
Islamic x Young	0.009	0.008*	-0.000
	(0.006)	(0.005)	(0.004)
Outcome Mean	0.225	0.137	0.920
R^2	0.072	0.046	0.137
N	207484	156142	207484
Clusters	890	890	890
District-center FE	✓	✓	✓
Province-by-cohort FE	✓	✓	✓
Baseline Controls	✓	✓	✓

Notes: This table reports estimates of equation (2) separately for women and men. The sample contains only individuals residing in rural areas of districts in 1990. Islamic refers to district centers with an Islamic school in 1980. Young refers to cohorts aged less than 11 in 1977 for women and in 1974 for men. All specifications include district center and province-by-cohort FE, and the baseline controls interacted with cohort dummies.

*p<0.1, **p<0.05, ***p<0.01. Standard errors clustered by district of residence.

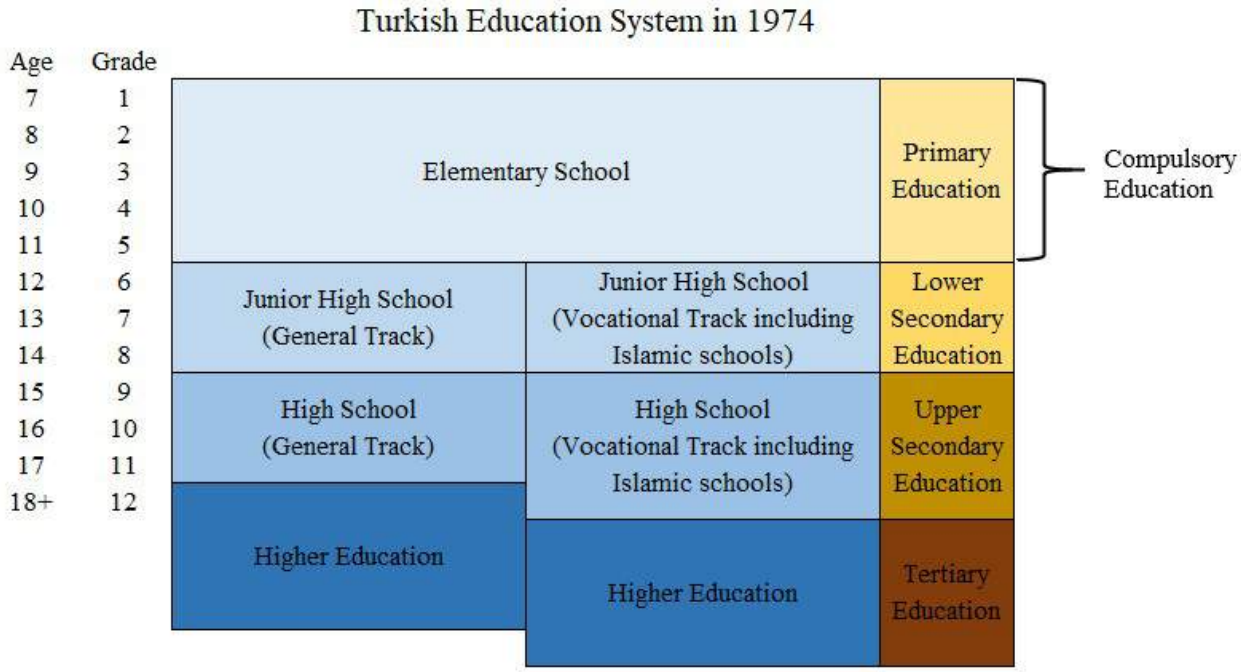
D Online Appendix - Additional Figures

Figure D.1: Timeline of Events



Source: Author's own illustration.

Figure D.2: Turkish Education System in the 1970s



Source: Author's illustration from the 1973 Basic Education Law.

Figure D.3: Curriculum of Islamic Schools in 1975

Islamic Junior High Schools	
Common Courses	Cumulative (h)
Turkish	15
Maths	12
Social Studies	10
Science	9
Foreing Language	9
Arts	3
Music	3
Physical Education	3
Morals	3
Total (h)	**67 (72%)**

Islamic High Schools	
Common Courses	Cumulative (h)
Turkish Language and Literature	15
History	6
Art History	1
Geography	6
Maths	10
Physics	7
Chemistry	5
Biology	5
Psychology	2
Philosophy	6
Morals	2
Foreign Language	12
Physcial Education	3
National Security	3
Total (h)	**83 (60%)**

Religion Courses	Cumulative (h)
Quran	9
Arabic	9
Religion Studies	8
Total (h)	**26 (28%)**

Religion Courses	Cumulative (h)
Quran	16
Arabic	14
Doctrines	2
Islamic Theology	2
Religious Studies	6
Islamic Jurisprudence	2
Quranic Exegesis	6
Prophetic Tradition	6
Life of Prophet	1
Public Speaking	2
Total (h)	**57 (40%)**

Source: Öcal (2013).

Figure D.4: Curriculum of Secular Schools in 1975

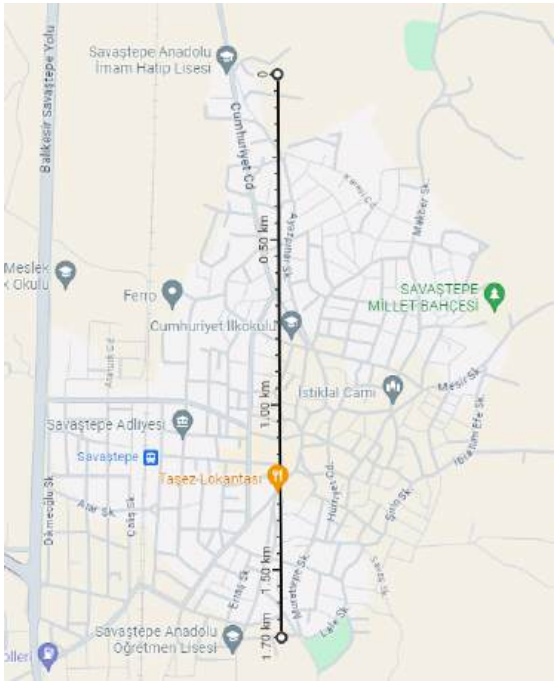
Secular Junior High Schools	
Common Courses	Cumulative (h)
Turkish	15
Maths	12
Social Studies	10
Science	9
Foreing Language	9
Arts	3
Music	3
Physical Education	3
Morals	3
Total (h)	**67 (72% w/max elec.)**
Elective Courses	Cumulative (h)
Technical or Arts Electives	12-24
Religion Studies	2
Total (h)	**14-26 (28% w/max elec.)**

Secular Academic High Schools (Literature Track)	
Common Courses	Cumulative (h)
Turkish Language and Literature	16
History	6
Art History	2
Geography	5
Maths	11
Physics	6
Chemistry	4
Biology	5
Psychology	2
Philosophy	6
Morals	2
Foreign Language	12
Physcial Education	3
National Security	2
Total (h)	**82 (92%)**
Elective Courses	Cumulative (h)
Technical or Arts Electives	5
Religion Studies	2
Total (h)	**7 (8%)**

Source: MEB (1974).

Figure D.5: District-center Diameters

(a) Savastepe (17k Population)

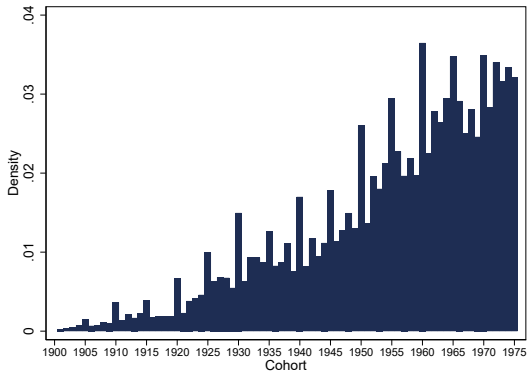


(b) Terme (70k Population)

Source: Google Maps.

Figure D.6: Cohort Size Histograms

(a) Women



(b) Men

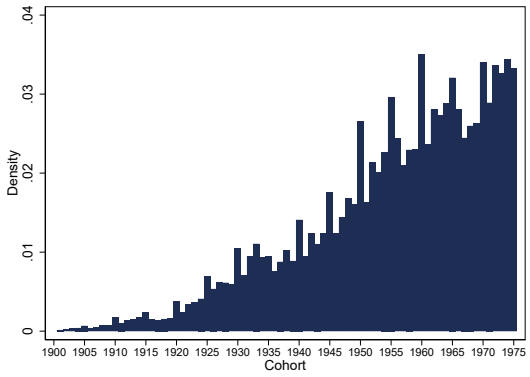
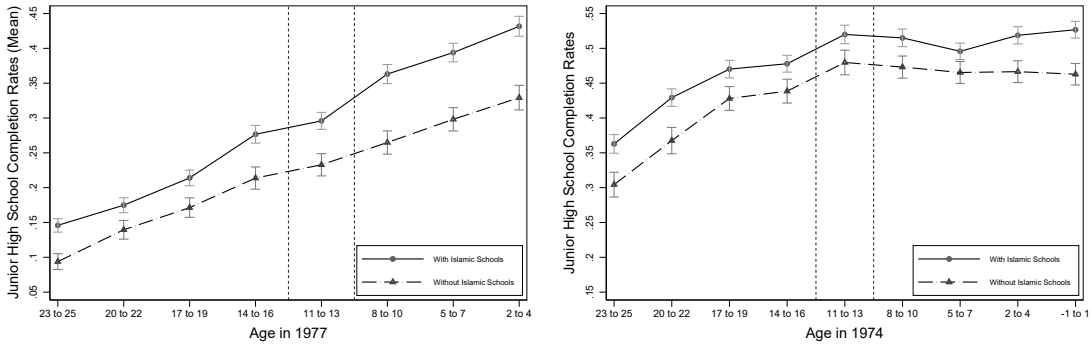


Figure D.7: Lower Secondary School Completion Rates in Means - Raw Data

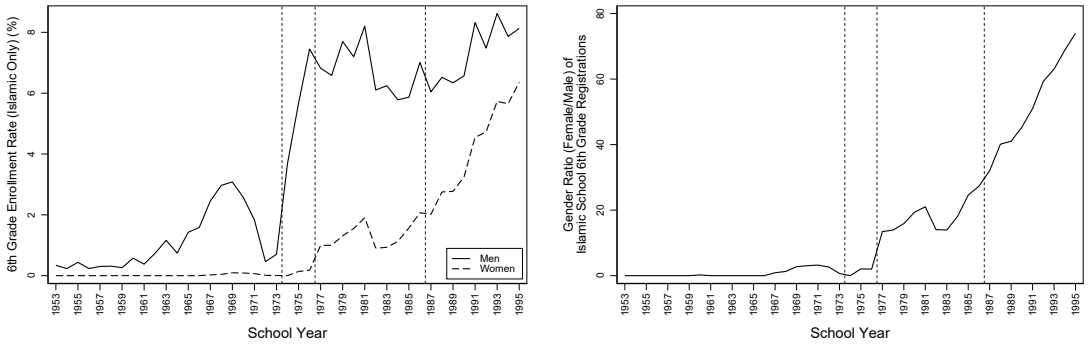
(a) Women **(b)** Men



Notes: This figure shows mean lower secondary school completion rates in district centers with and without an Islamic school in 1980. This figure is constructed by first calculating the mean lower secondary school completion rates for each district-center and cohort pair, and then averaging these rates based on Islamic school availability. Panel (a) and panel (b) restrict the sample to women and men, respectively. Cutoff years differ by gender as female students achieved legal rights to attend Islamic schools in 1977, three years after the expansion of Islamic school network. Cohorts on the right side of vertical dotted lines are fully exposed cohorts.

Figure D.8: Evolution of Islamic School Enrollment Rates to 6th Grade

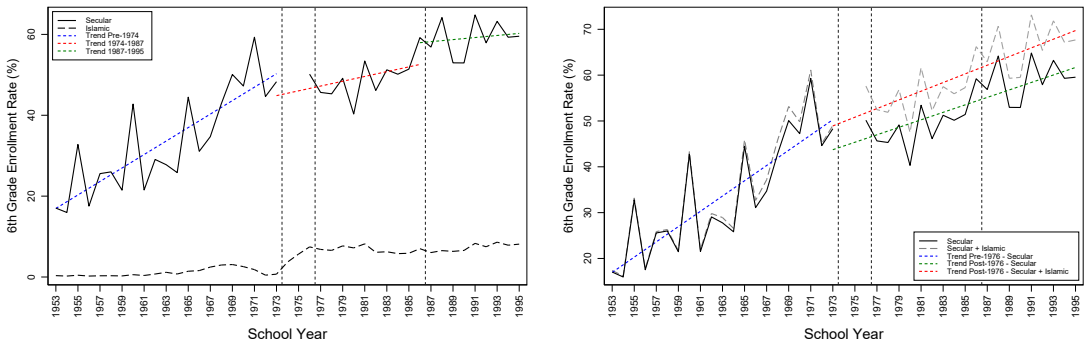
(a) Islamic Enrollments by Gender **(b)** Gender Ratio in Islamic Schooling



Notes: This figure shows the evolution of Islamic school 6th grade enrollment rates in a given school year. Enrollment rates calculated by dividing the Islamic school students registered to 6th grade by the theoretical cohort size of 6th graders for a given school year measured by using population censuses between 1950-1995. Source: National education statistical yearbooks of Turkish Statistics Institute.

Figure D.9: Evolution of School Enrollment Rates to 6th Grade for Men

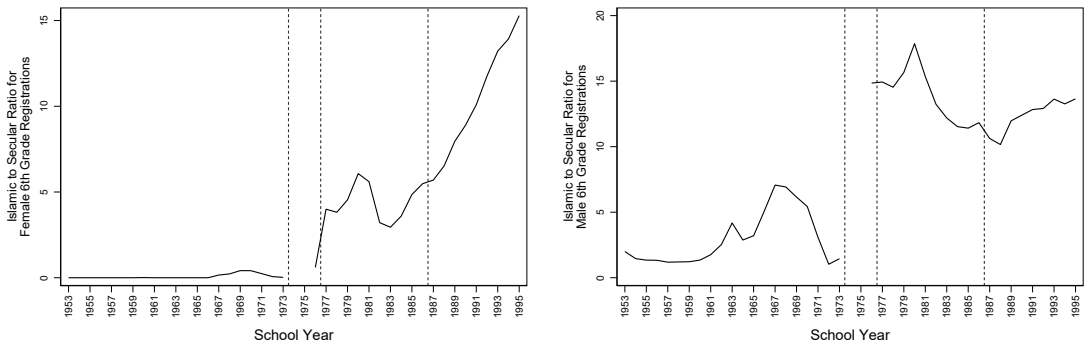
(a) Trends in Secular Schooling **(b)** Trends in Secular and Total Schooling



Notes: This figure shows the evolution of enrollment rates and its trends to 6th grade in a given school year by school type. Enrollment rates calculated by dividing the total new male students registered with respect to school type by the theoretical male cohort size of 6th graders for a given school year measured by using population censuses between 1950-1995. Source: National education statistical yearbooks of Turkish Statistics Institute.

Figure D.10: Secular to Islamic 6th Grade Enrollment Ratio

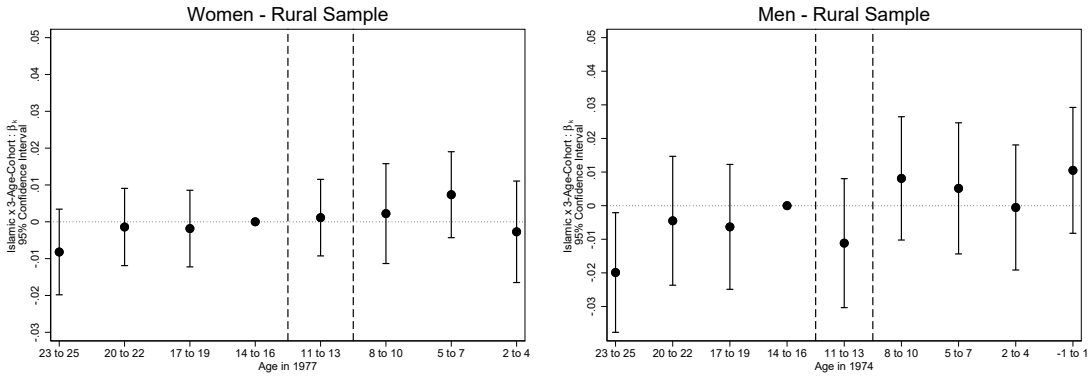
(a) Women **(b)** Men



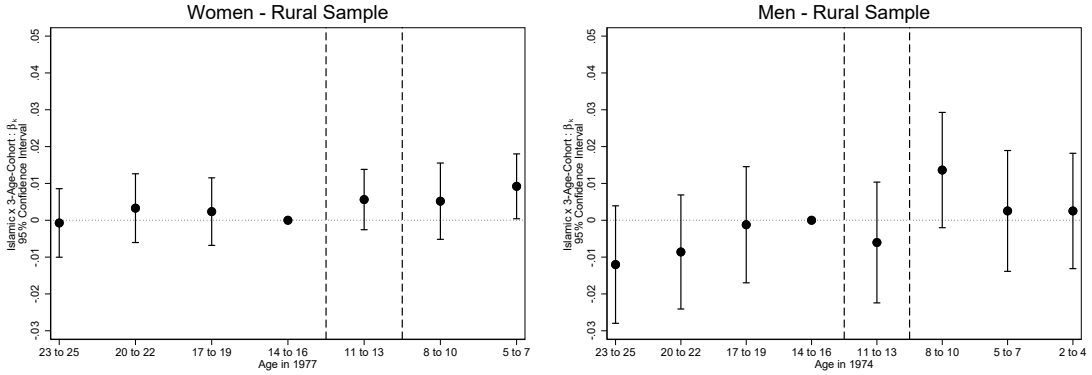
Notes: This figure shows the evolution of ratios in enrollment rates to 6th grade in a given school year by school type. Enrollment ratios calculated by dividing Islamic school enrollments to secular school enrollments for a given schooling year for each gender. Source: National education statistical yearbooks of Turkish Statistics Institute.

Figure D.11: Access to Islamic Schools and Education in Rural Sample (Placebo) - Effects by 3-Age-Cohorts

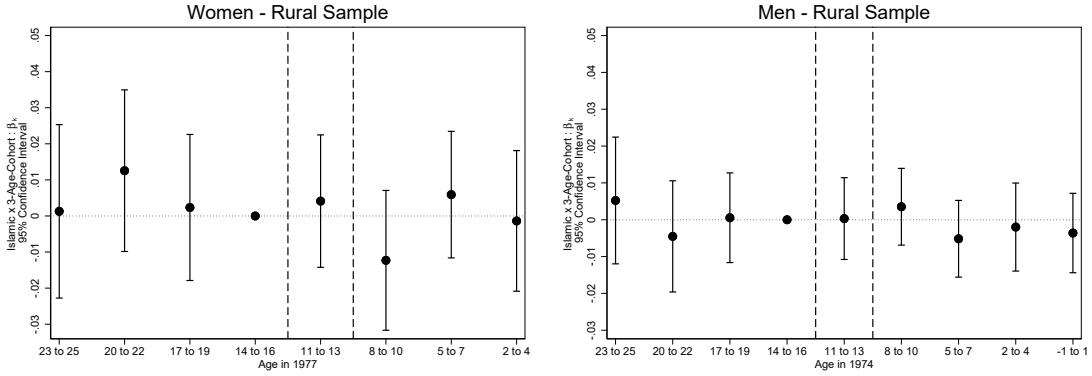
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



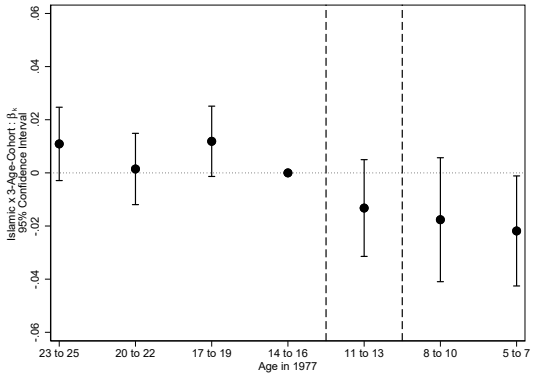
(c) Dep. Var.: Primary School Completed



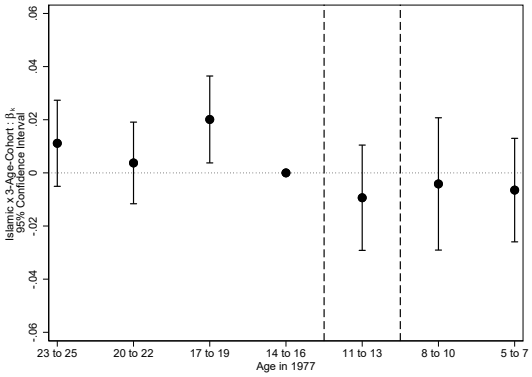
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women and men subsamples, respectively. The sample contains only the individuals reside in rural areas of districts in 1990. Islamic refers to areas that its district-center had an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include district-center and province-by-cohort fixed effects, and baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half non-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by district of residence.

Figure D.12: Access to Islamic Schools and Family Outcomes in Rural Sample (Placebo) - Effects by 3-Age-Cohorts

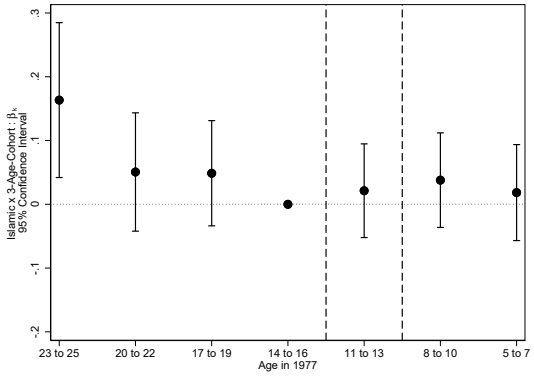
(a) Ever-married



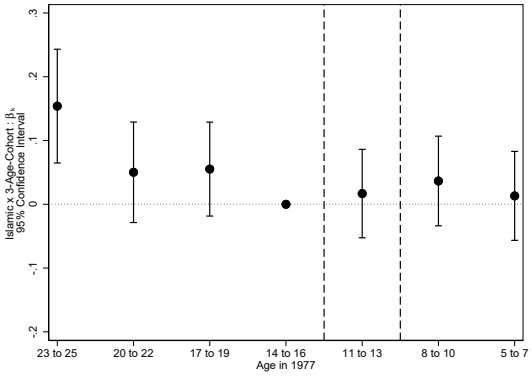
(b) Ever-gave birth



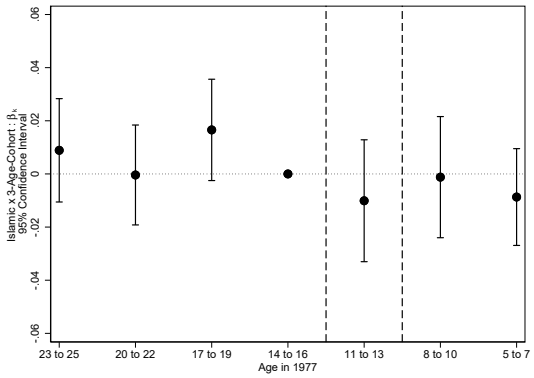
(c) Total Births



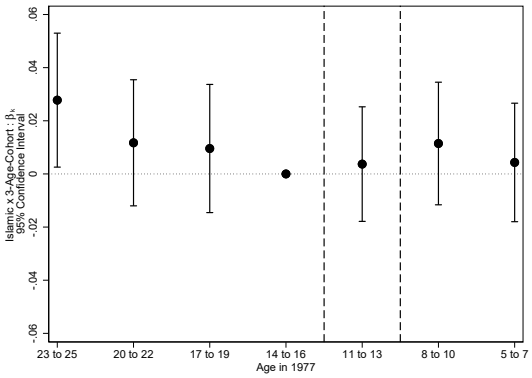
(d) Total Births (Winsorized)



(e) At Least Two Births



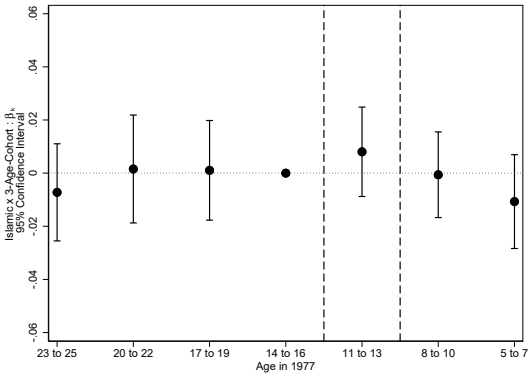
(f) At Least Three Births



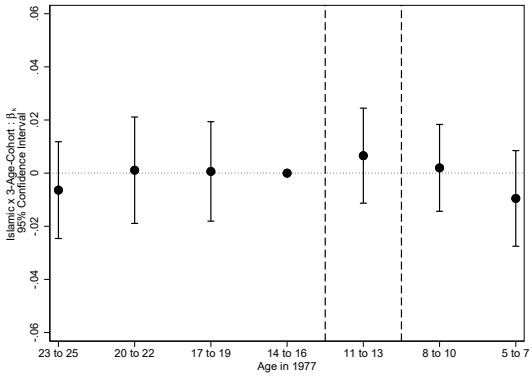
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in rural areas of districts in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (e), and given three or more births in panel (f). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half non-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women serve as the reference group. Standard errors clustered by district of residence.

Figure D.13: Access to Islamic Schools and Labor Outcomes in Rural Sample (Placebo) - Effects by 3-Age-Cohorts

(a) Participate in Labor Force



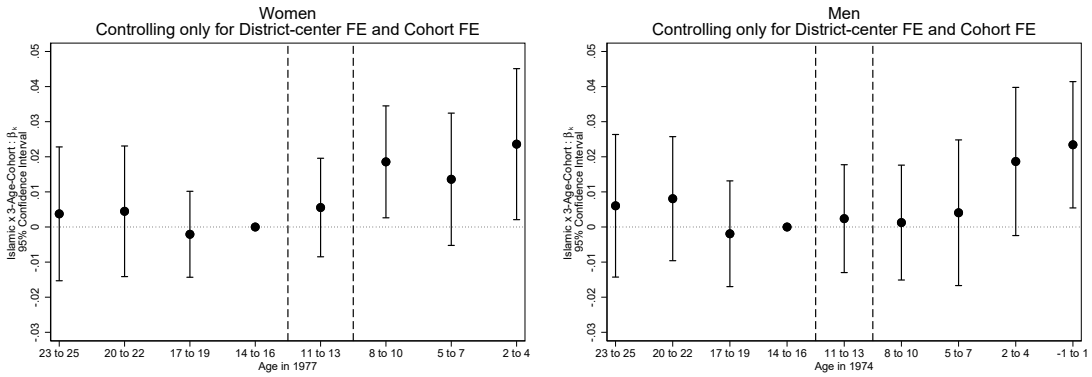
(b) Worked Last Week



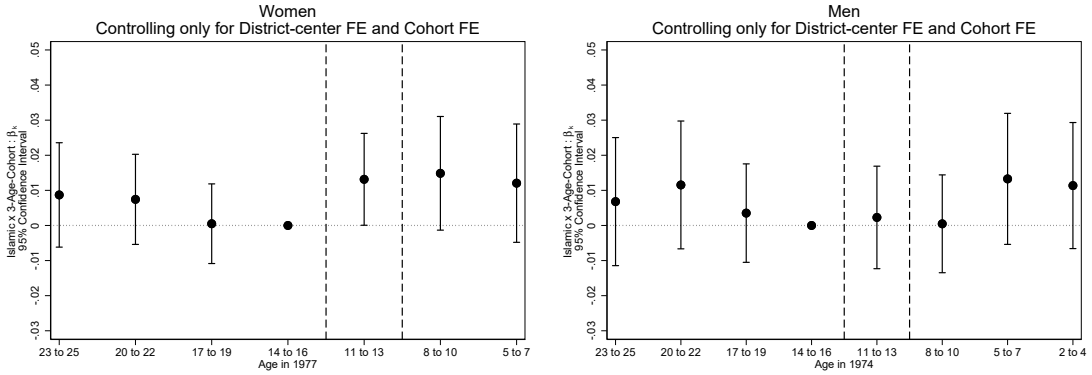
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in rural areas of districts in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half non-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women serve as the reference group. Standard errors clustered by district of residence.

Figure D.14: Access to Islamic Schools and Education without controls - Effects by 3-Age-Cohorts

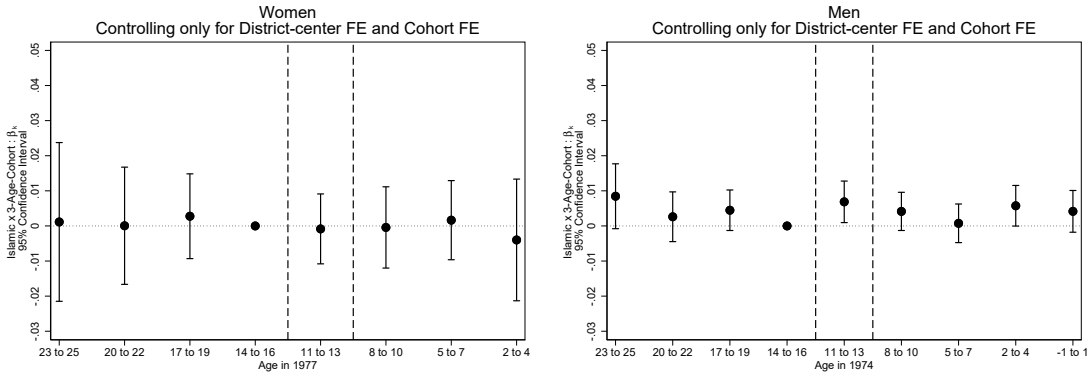
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



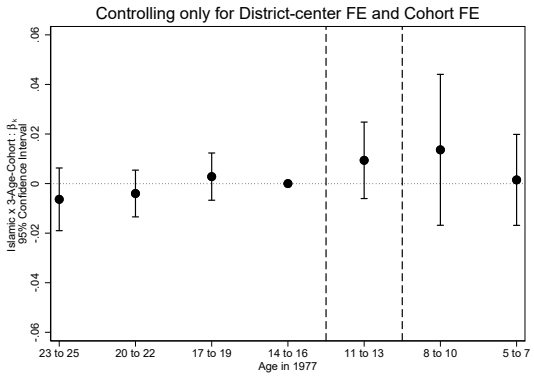
(c) Dep. Var.: Primary School Completed (Falsification Test)



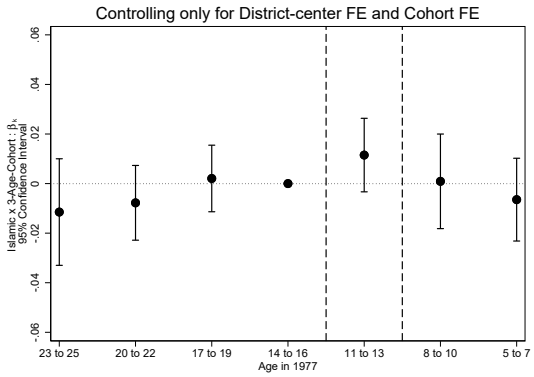
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women and men subsamples, respectively. The sample contains only the individuals reside in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include district-center and age-cohort fixed effects. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by district center of residence.

Figure D.15: Access to Islamic Schools and Family Outcomes without controls - Effects by 3-Age-Cohorts

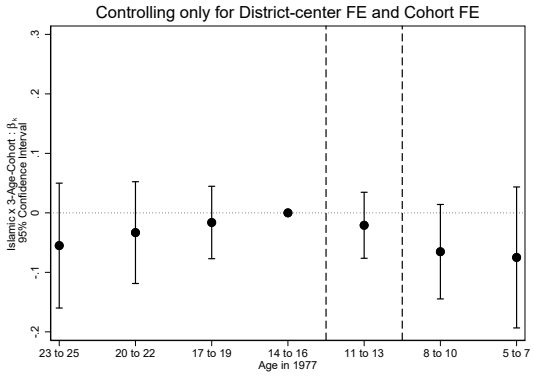
(a) Ever-married



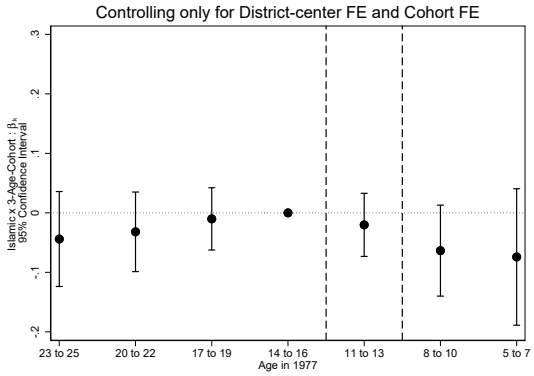
(b) Ever-gave birth



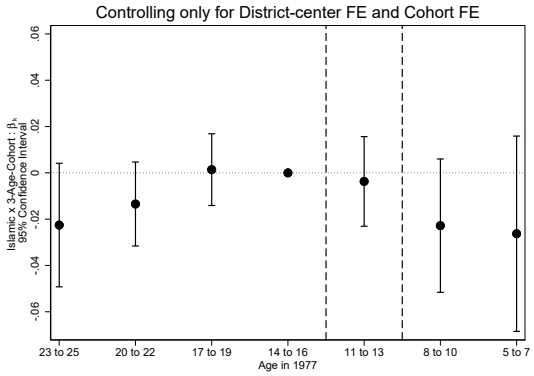
(c) Total Births



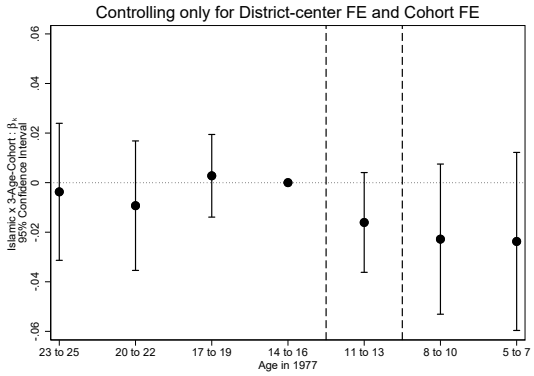
(d) Total Births (Winsorized)



(e) At Least Two Births



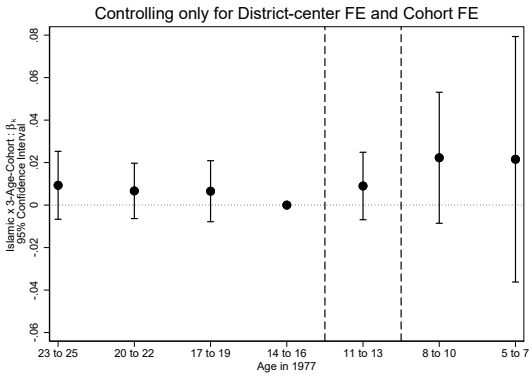
(f) At Least Three Births



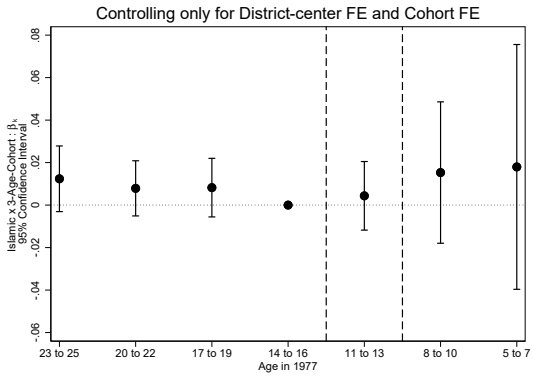
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (e), and given three or more births in panel (f). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). All specifications include district-center and age-cohort fixed effects. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 serve as the reference group. Standard errors clustered by district center of residence.

Figure D.16: Access to Islamic Schools and Labor Outcomes without controls - Effects by 3-Age-Cohorts

(a) Participate in Labor Force



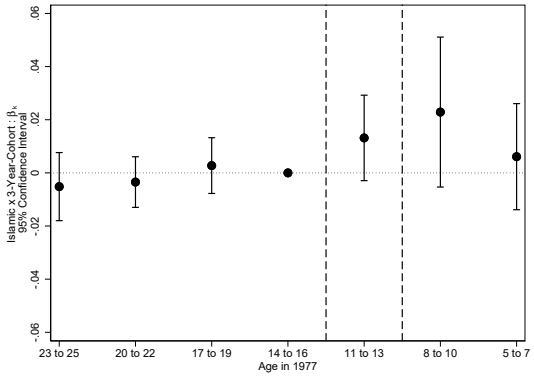
(b) Worked Last Week



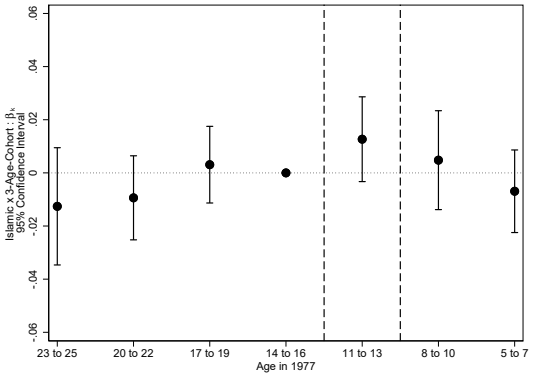
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). All specifications include district-center and age-cohort fixed effects. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 serve as the reference group. Standard errors clustered by district center of residence.

Figure D.17: Access to Islamic Schools and Family Outcomes – Effects by 3-Age Cohorts – Eastern and Southeastern Türkiye excluded

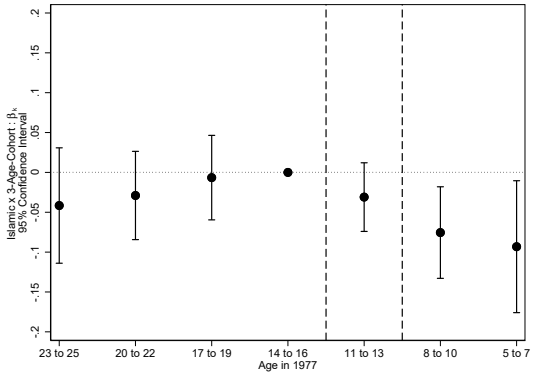
(a) Ever Married



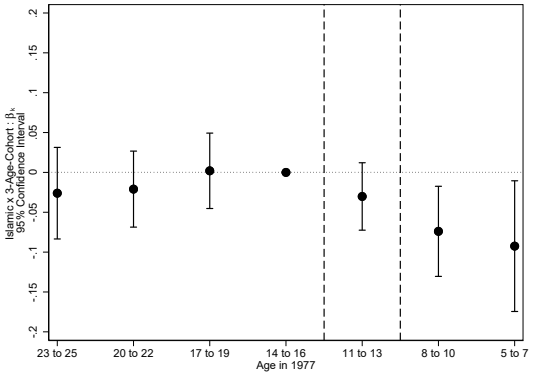
(b) Ever Given birth



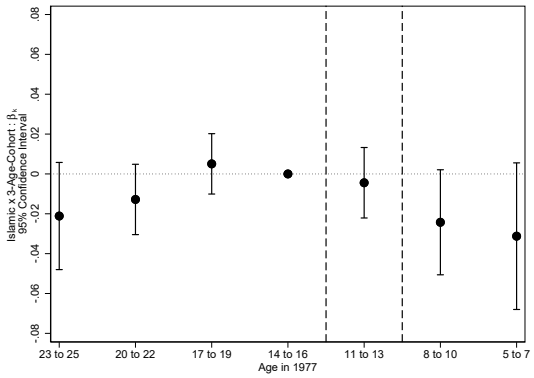
(c) Total Childbirths



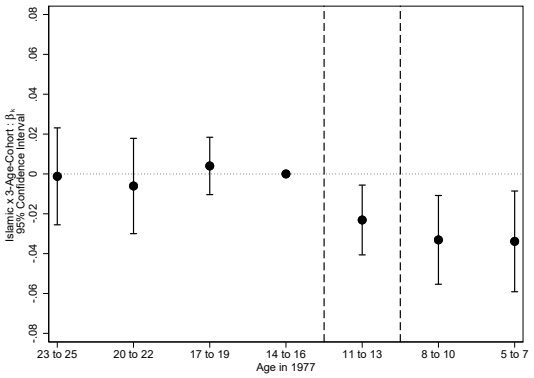
(d) Total Childbirths (Winsorized)



(e) At Least Two Childbirths



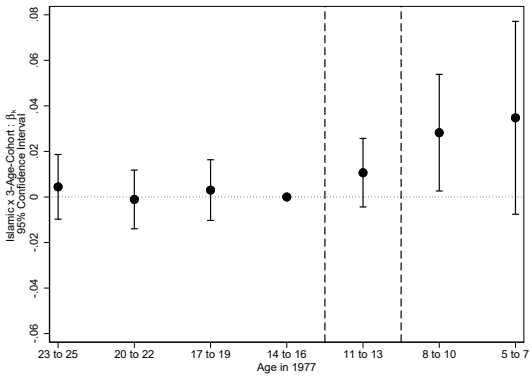
(f) At Least Three Childbirths



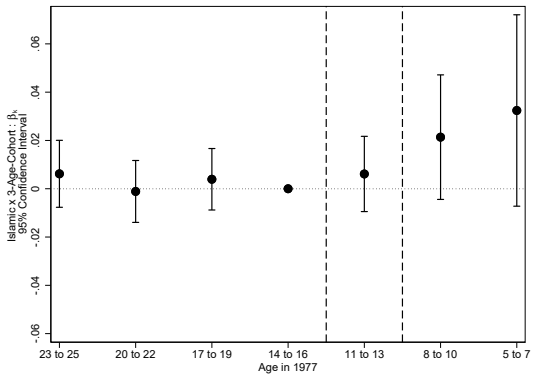
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals for equation (1) for the subsample of women. The sample contains women aged 18 and older who resided in district centers in 1990, excluding centers in eastern and southeastern Türkiye. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), has ever given birth in panel (b), has given birth at least twice in panel (e), and has given birth at least three times in panel (f). The dependent variables measure the total number of childbirths in panel (c) and the total number of childbirths winsorized at the 98th percentile in panel (d). All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half-exposed and half-nonexposed cohorts. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged between 14 and 16 in 1977 serve as the reference group. Standard errors clustered by district center of residence.

Figure D.18: Access to Islamic Schools and Labor Outcomes – Effects by 3-Age Cohorts - Eastern and Southeastern Türkiye excluded

(a) Participate in Labor Force



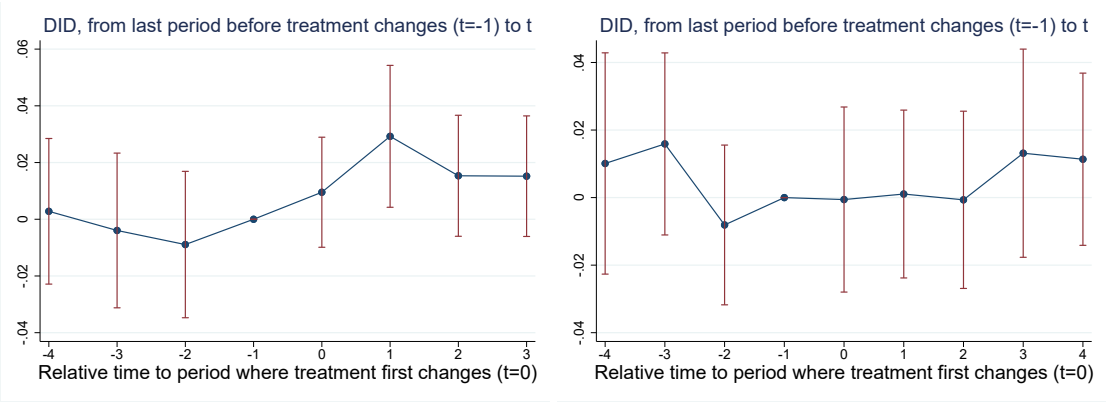
(b) Worked Last Week



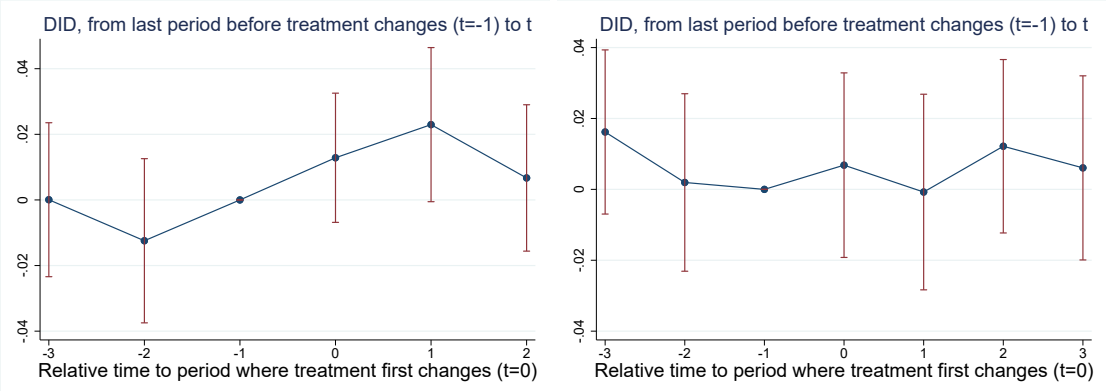
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for the subsample of women. The sample contains women aged 18 and older who resided in district centers in 1990, excluding centers in eastern and southeastern Türkiye. The dependent variables include an indicator equal to one if the individual participates in the labor force in panel (a) and had worked the week prior to the census in panel (b). All specifications include district center fixed effects, province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half-exposed and half-nonexposed cohorts. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged between 14 and 16 in 1977 serve as the reference group. Standard errors clustered by district center of residence.

Figure D.19: Access to Islamic Schools and Education with DID_M estimator

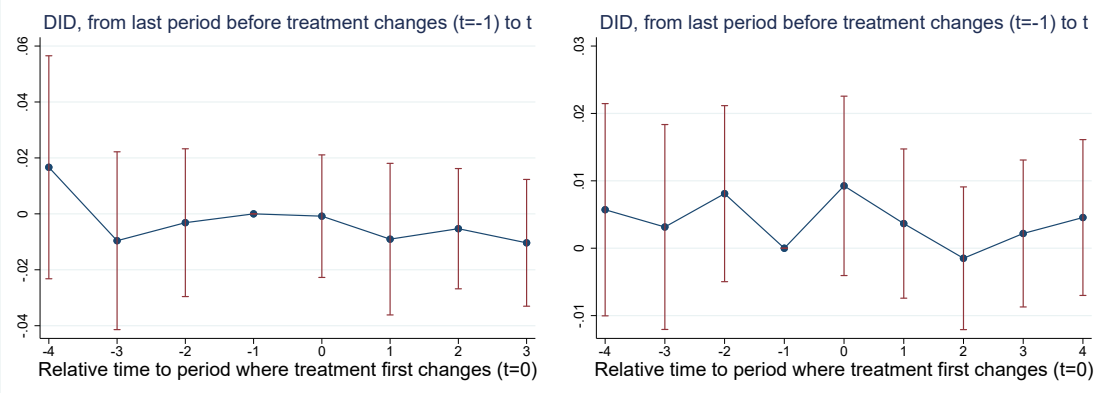
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



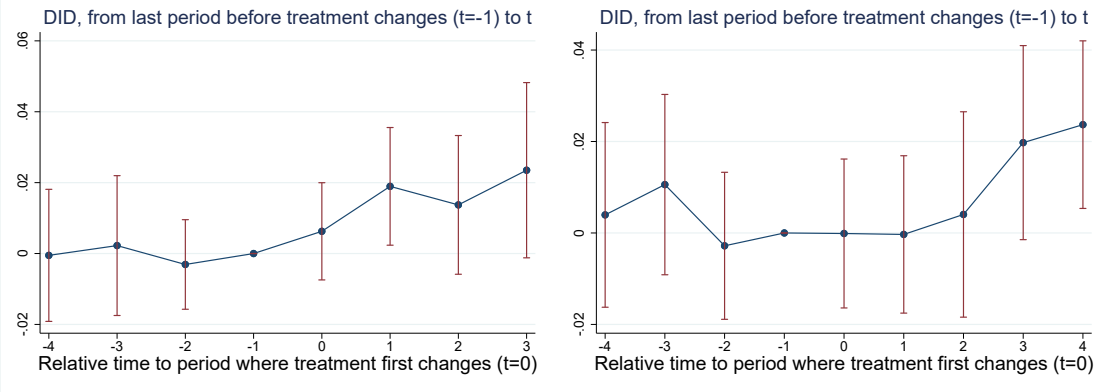
(c) Dep. Var.: Primary School Completed (Falsification Test)



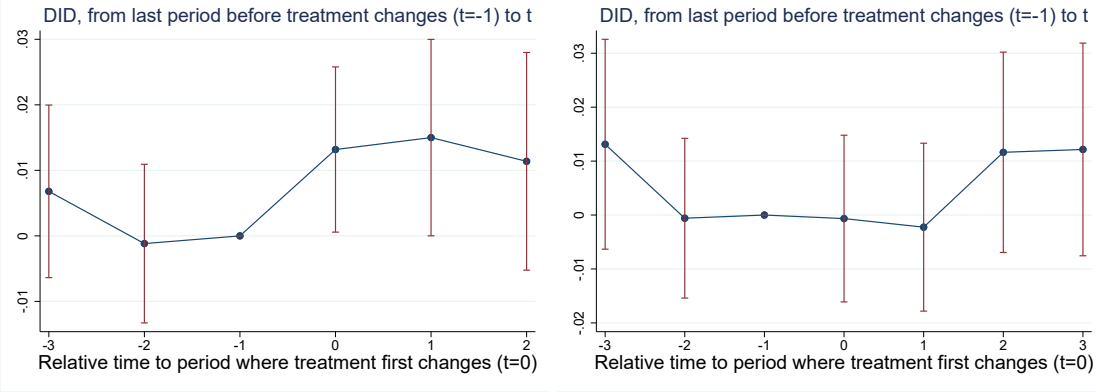
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for women and men subsamples, respectively. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include baseline controls and non-parametric province trends as controls. The plots on the left side correspond to women, while those on the right side correspond to men. Standard errors clustered by district center of residence.

Figure D.20: Access to Islamic Schools and Education with DID_M estimator - No controls

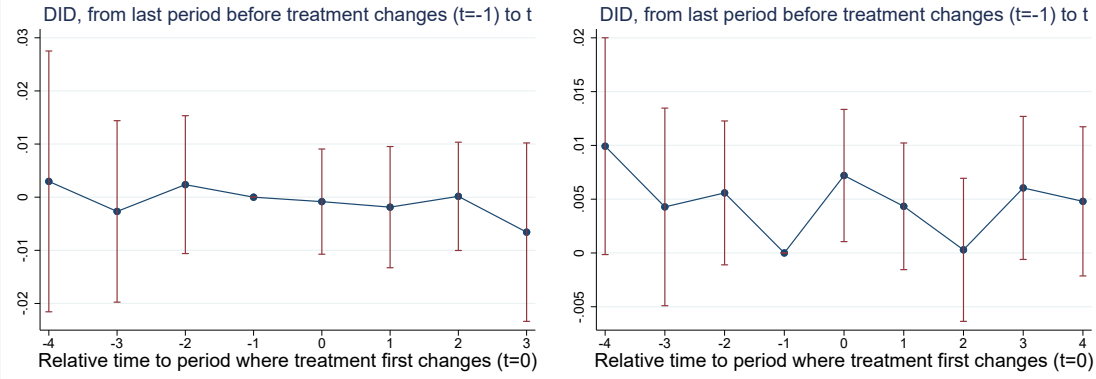
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



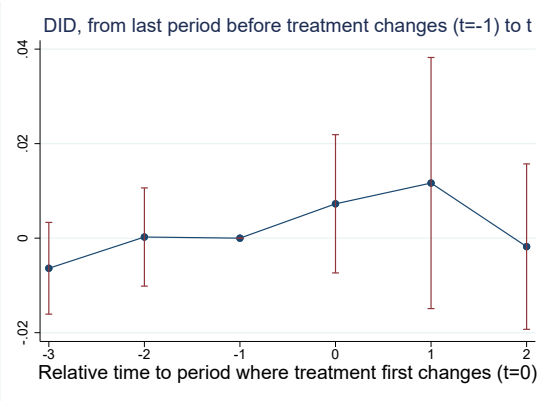
(c) Dep. Var.: Primary School Completed (Falsification Test)



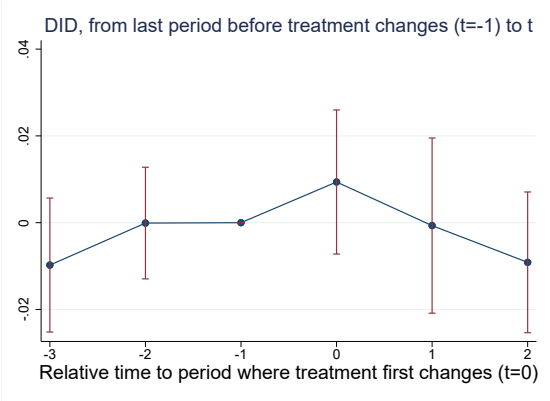
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for women and men subsamples, respectively. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). The plots on the left side correspond to women, while those on the right side correspond to men. Standard errors clustered by district center of residence.

Figure D.21: Access to Islamic Schools and Fertility with DID_M estimator

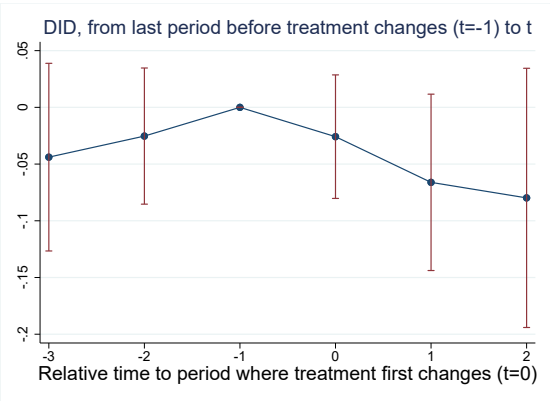
(a) Ever-married



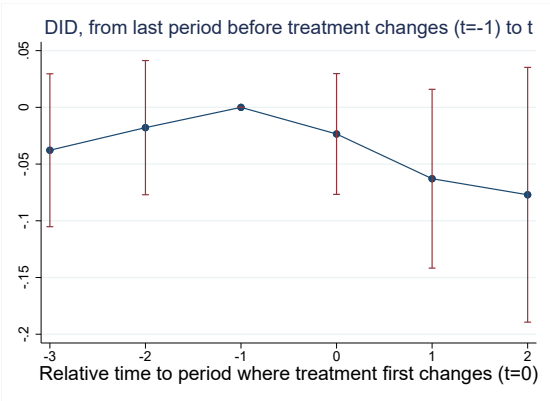
(b) Ever-gave birth



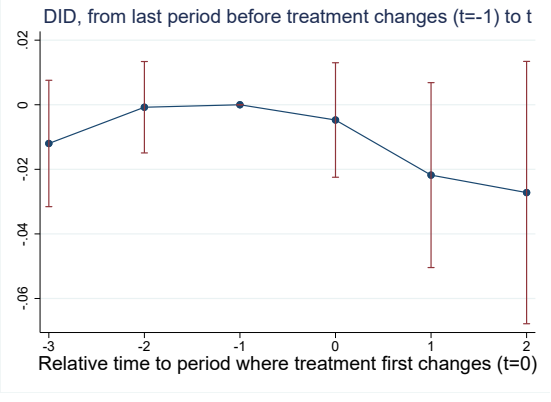
(c) Total Births



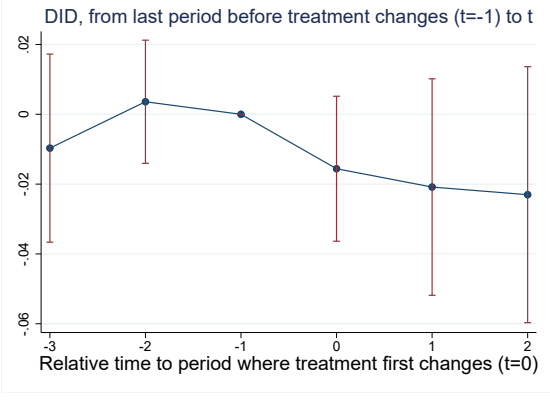
(d) Total Births (Winsorized)



(e) At Least Two Births



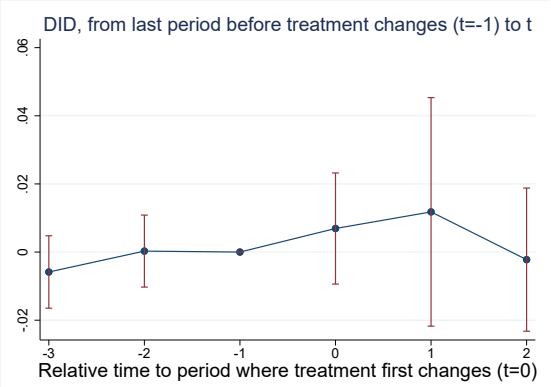
(f) At Least Three Births



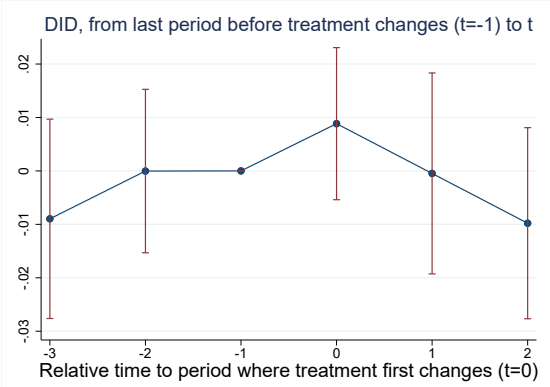
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for women subsample. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (e), and given three or more births in panel (f). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). Standard errors clustered by district center of residence.

Figure D.22: Access to Islamic Schools and Fertility with DID_M estimator - No controls

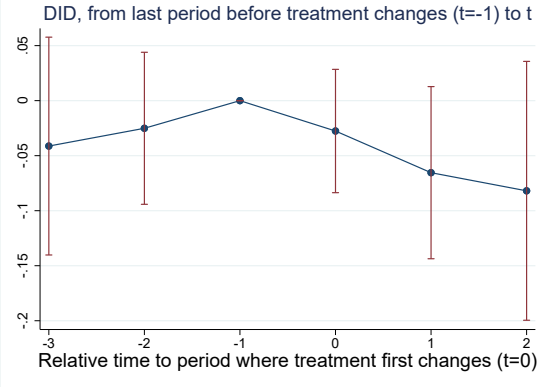
(a) Ever-married



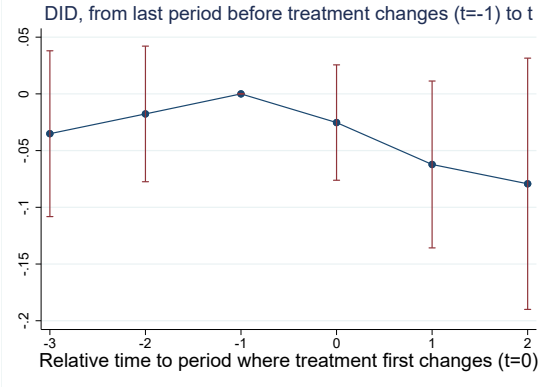
(b) Ever-gave birth



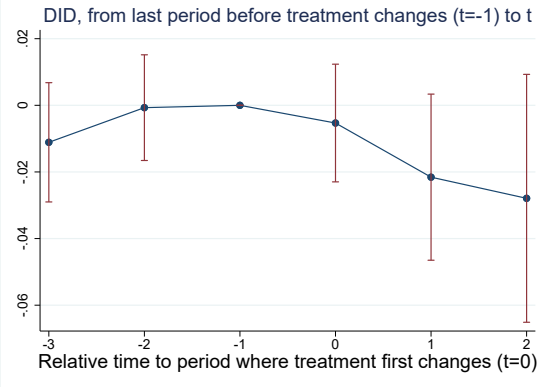
(c) Total Births



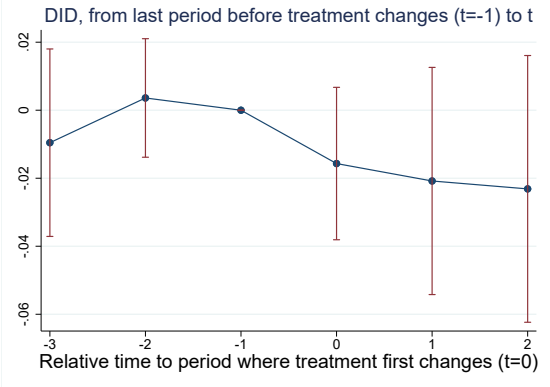
(d) Total Births (Winsorized)



(e) At Least Two Births



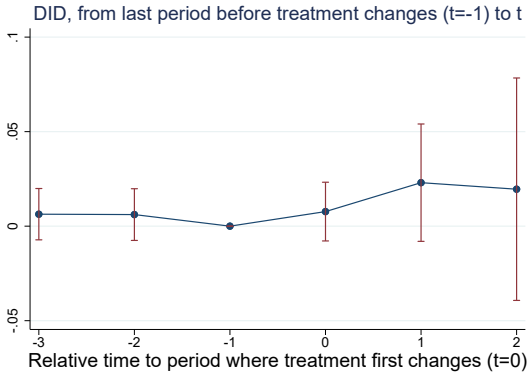
(f) At Least Three Births



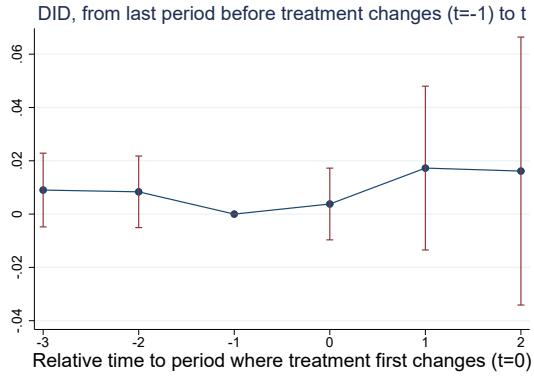
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for girl subsample. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (e), and given three or more births in panel (f). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). Standard errors clustered by district center of residence.

Figure D.23: Access to Islamic Schools and Labor Market with DID_M estimator

(a) Participate in Labor Force



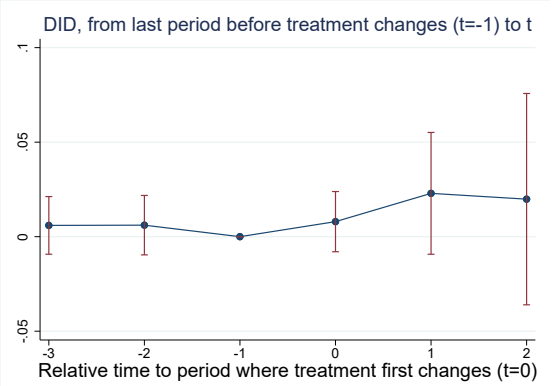
(b) Worked Last Week



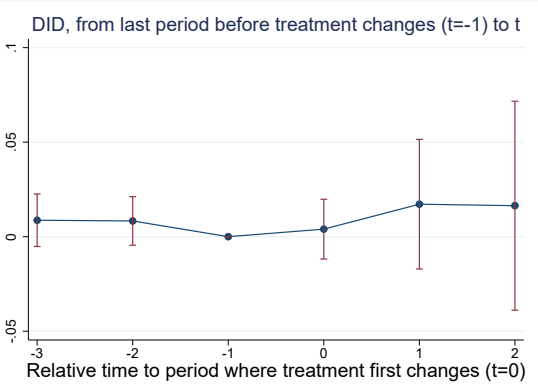
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for girl subsample. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). Standard errors clustered by district center of residence.

Figure D.24: Access to Islamic Schools and Labor Market with DID_M estimator - No controls

(a) Participate in Labor Force

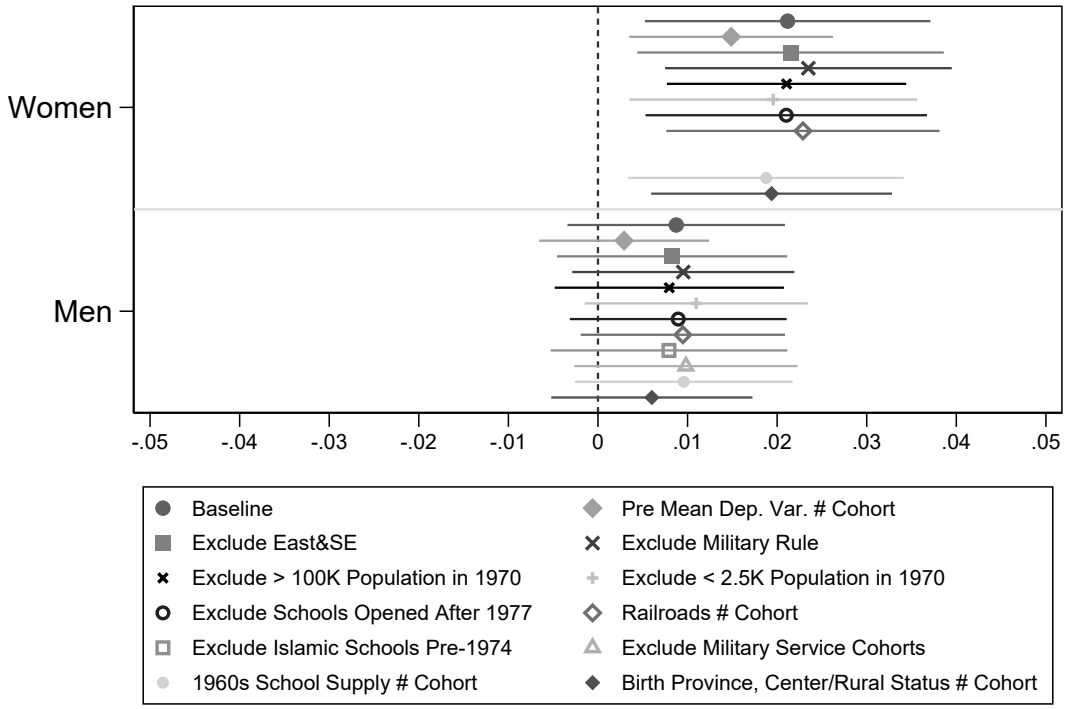


(b) Worked Last Week



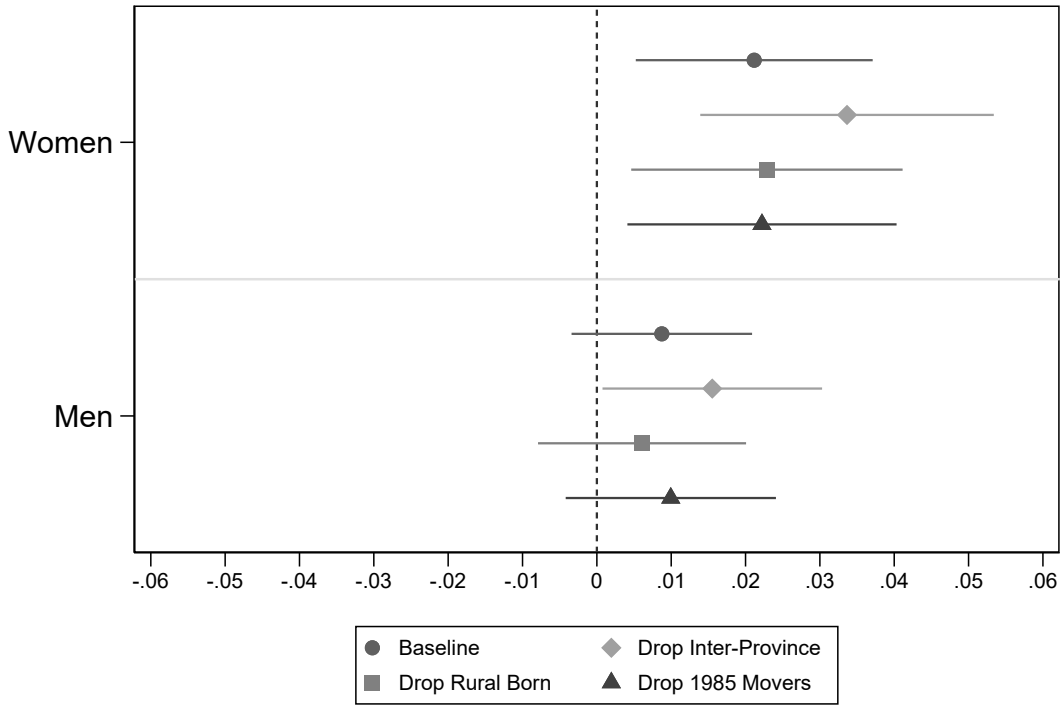
Notes: This figure reports coefficients and 95% confidence intervals of the DID_M estimators according to De Chaisemartin and d'Haultfoeuille (2020) methodology using did_multipleGT_old command in Stata for girl subsample. The sample contains only the individuals reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). Standard errors clustered by district center of residence.

Figure D.25: Additional Robustness Checks



Notes: This graph reports estimates of equation (2) on several robustness checks separately for women and men, respectively. The sample contains only the individuals reside in a district-center in 1990. The dependent variable include an indicator equal to one if the individual has ever completed lower secondary school for all coefficients. All specifications include district-center and province-by-cohort fixed effects, and the baselien controls interacted with cohort dummies. Standard errors clustered by district center of residence.

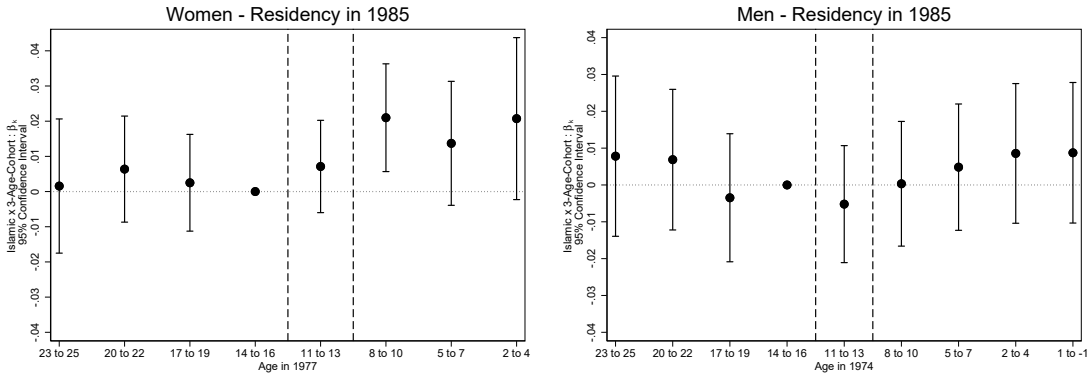
Figure D.26: Robustness checks for mobility



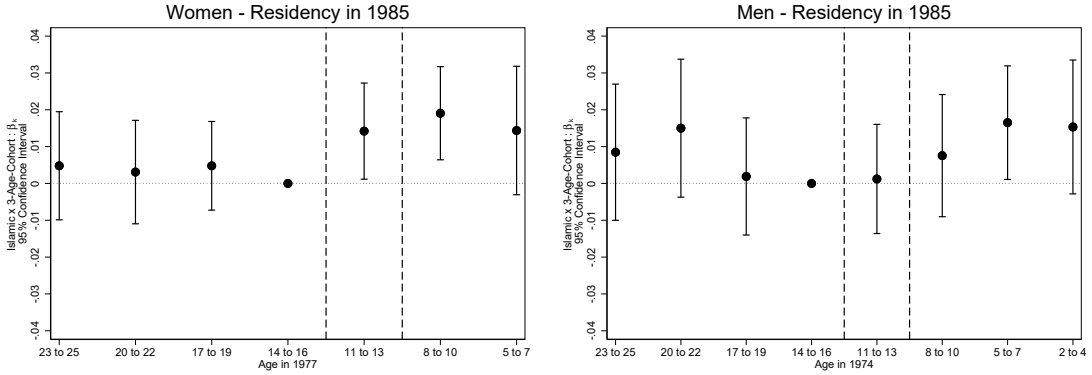
Notes: This graph reports estimates of equation (2) on several mobility robustness checks separately for women and men, respectively. The sample contains only the individuals reside in a district-center in 1990. The dependent variable include an indicator equal to one if the individual has ever completed lower secondary school for all coefficients. All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Standard errors clustered by district center of residence.

Figure D.27: Access to Islamic Schools and Education - Assigned treatment according to 1985 residency - Effects by 3-Age-Cohorts

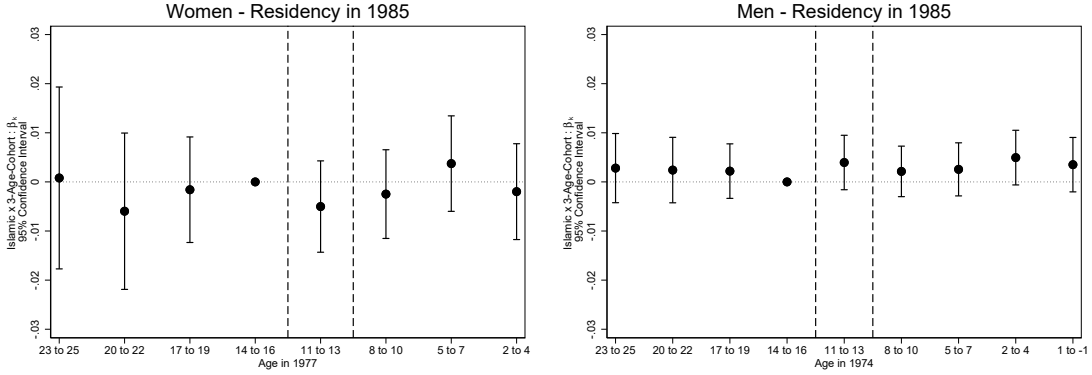
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



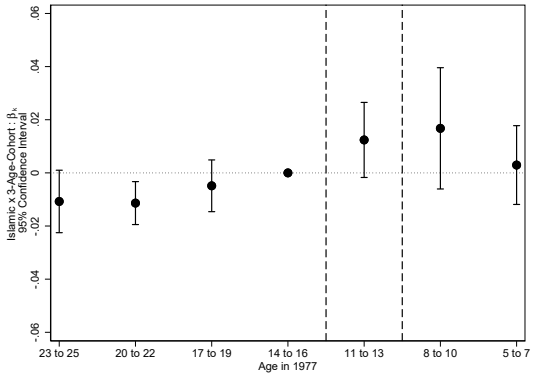
(c) Dep. Var.: Primary School Completed (Falsification Test)



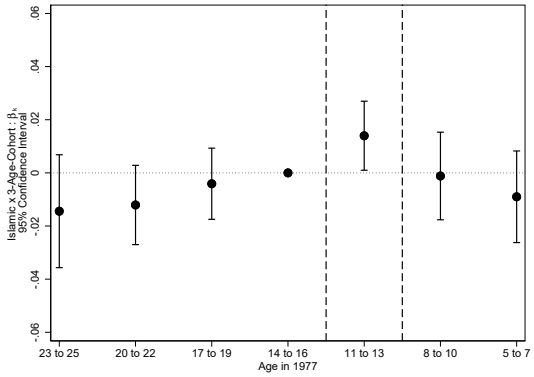
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women and men subsamples, respectively. The sample contains only the individuals reside in a district-center in 1985. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by district center of residence in 1985.

Figure D.28: Access to Islamic Schools and Family Outcomes - Assigned treatment according to 1985 residency - - Effects by 3-Age-Cohorts

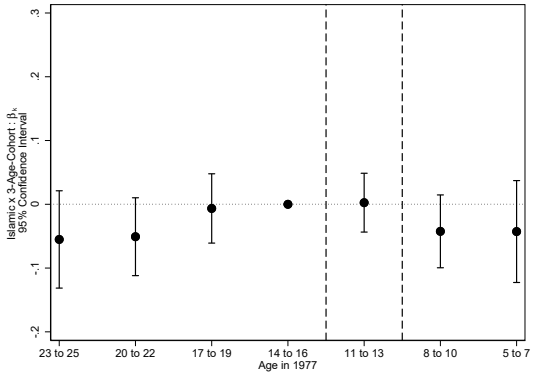
(a) Ever-married



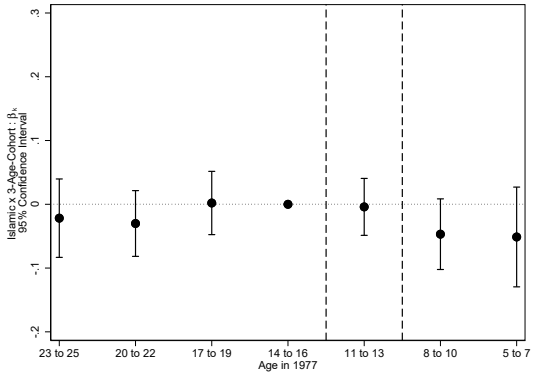
(b) Ever-gave birth



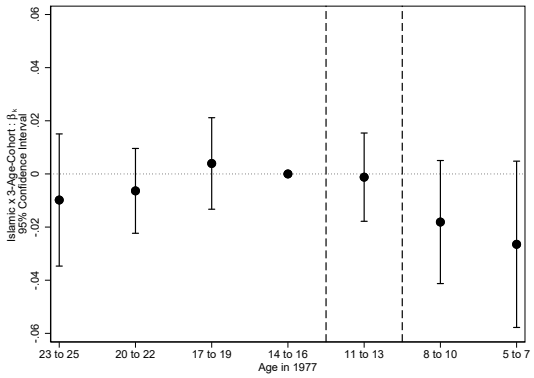
(c) Total Births



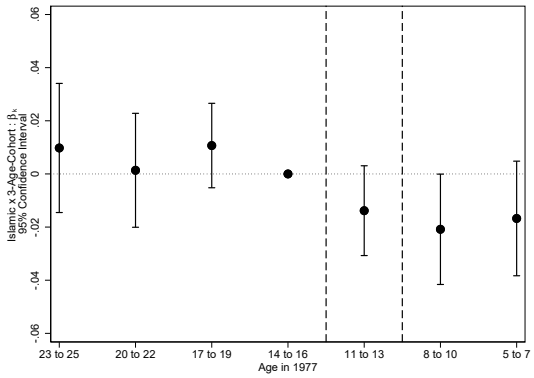
(d) Total Births (Winsorized)



(e) At Least Two Births



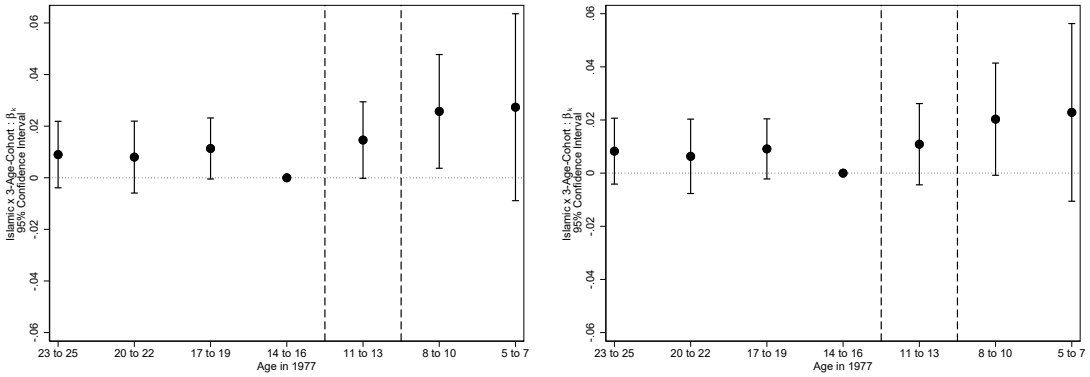
(f) At Least Three Births



Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains only women reside in a district-center in 1985. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (d), and given three or more births in panel (e). The dependent variables measure the total number of birth given in panel (c). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 serve as the reference group. Standard errors clustered by district center of residence in 1985.

Figure D.29: Access to Islamic Schools and Labor Outcomes - Assigned treatment according to 1985 residency - Effects by 3-Age-Cohorts

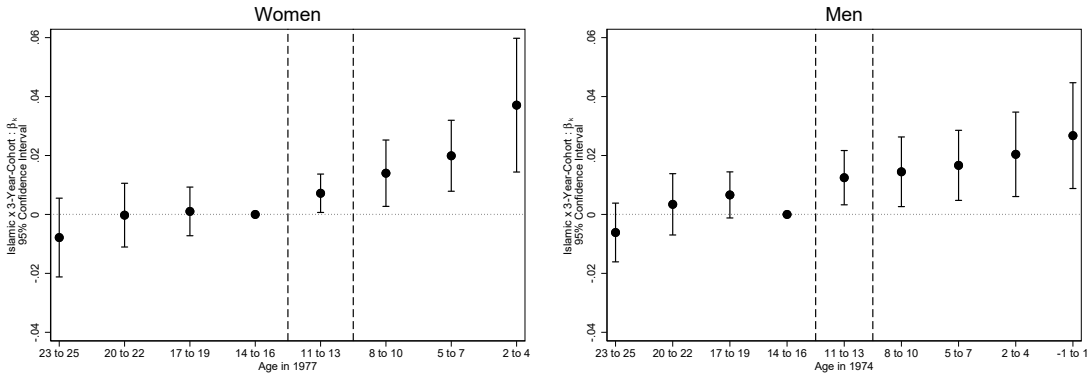
(a) Participate in Labor Force **(b)** Worked Last Week



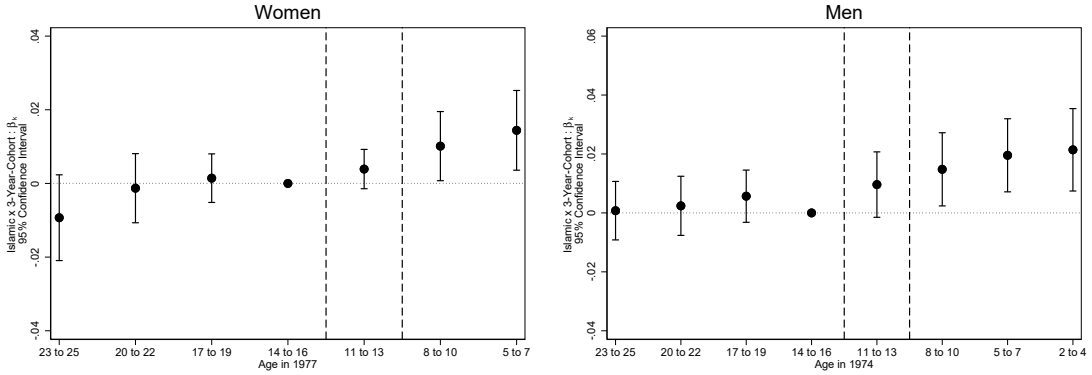
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample.The sample contains only women reside in a district-center in 1985. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 serve as the reference group. Standard errors clustered by district center of residence in 1985.

Figure D.30: Access to Islamic Schools and Education with province-level evidence - Effects by 3-Age-Cohorts

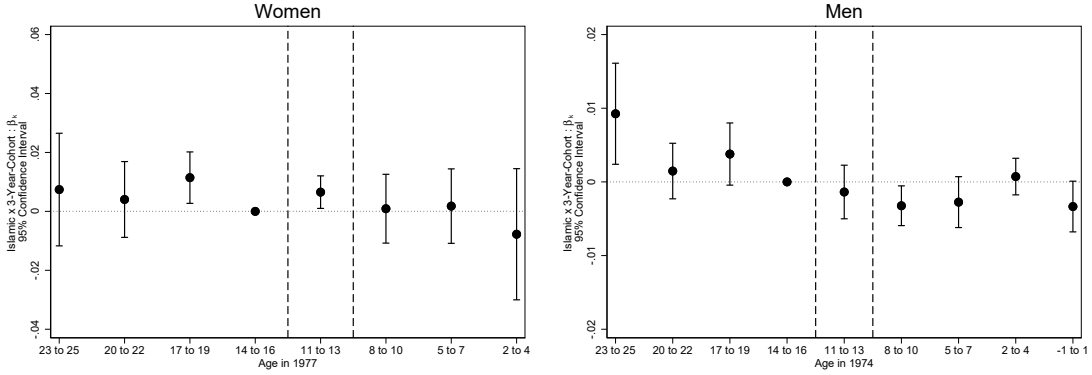
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



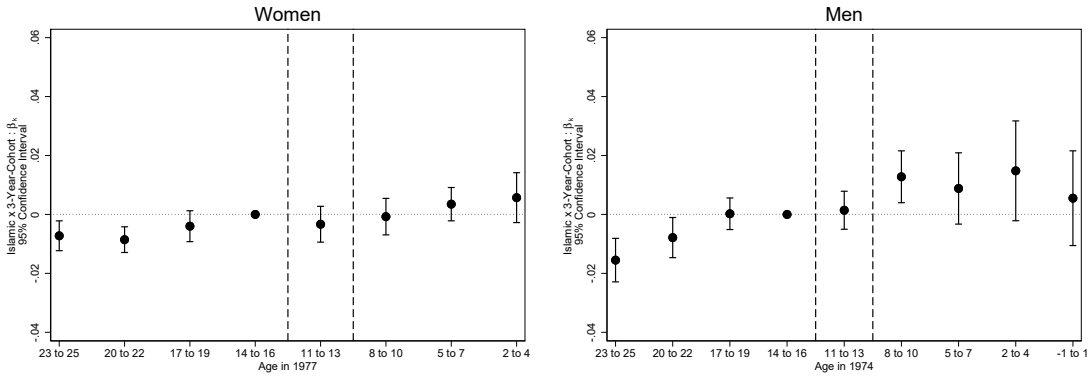
(c) Dep. Var.: Primary School Completed (Falsification Test)



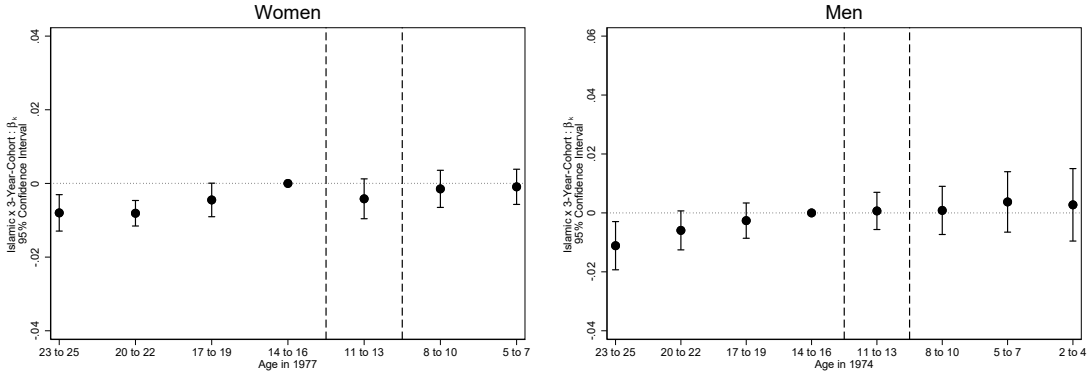
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (5) for women and men subsamples, respectively. The sample contains only the individuals born in district centers. Islamic refers to intensity of treatment of each province as explained in section 5.2. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include province of birth and age-cohort fixed effects. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by province of birth.

Figure D.31: Access to Islamic Schools and Education with province-level evidence - Effects by 3-Age-Cohorts - Placebo Sample (Rural-borns)

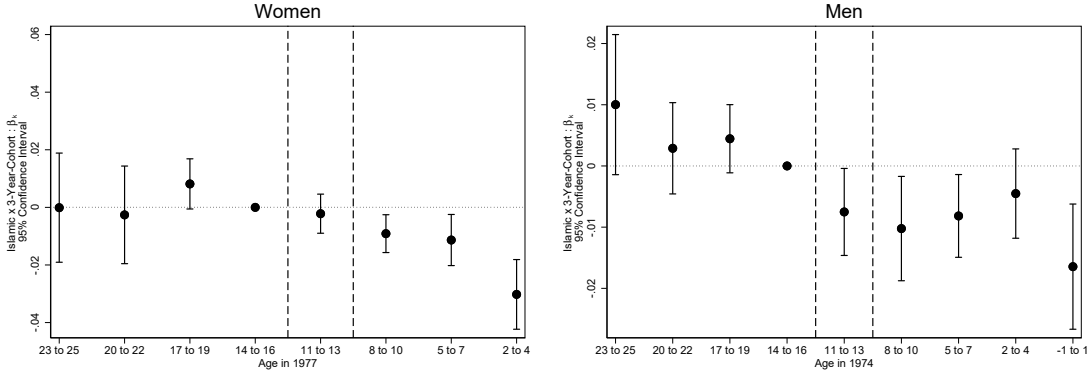
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



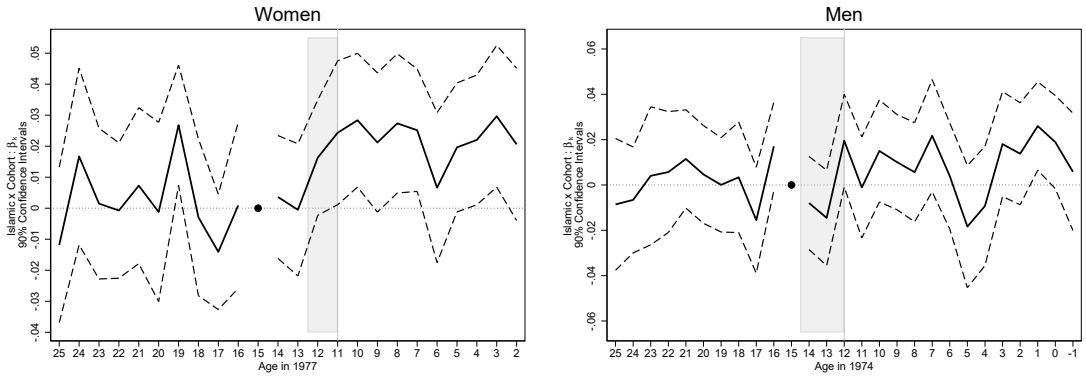
(c) Dep. Var.: Primary School Completed (Falsification Test)



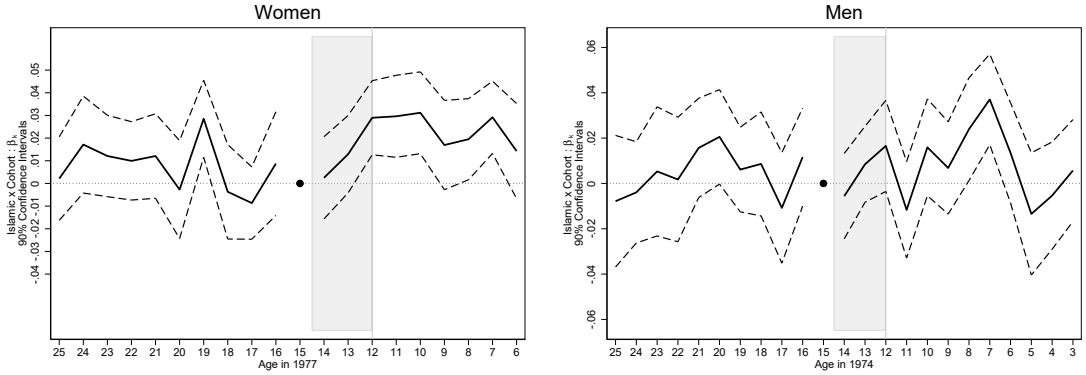
Notes: This figure reports 3-age-specific estimates of β_k and 95% confidence intervals in equation (5) for women and men subsamples, respectively. The sample contains only the individuals born in rural areas. Islamic refers to intensity of treatment of each province as explained in section 5.2. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include province of birth and age-cohort fixed effects. Cohorts between two vertical lines include half fully-exposed and half partially-exposed cohorts. Cohorts on the right side of the second vertical lines are fully-exposed. Cohorts aged between 14-16 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by province of birth.

Figure D.32: Access to Islamic Schools and Education - Effects by Single-Age-Cohorts

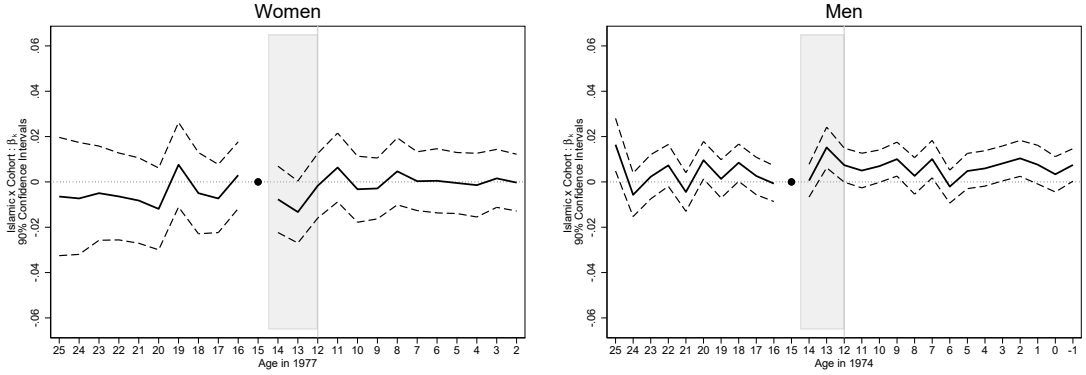
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed

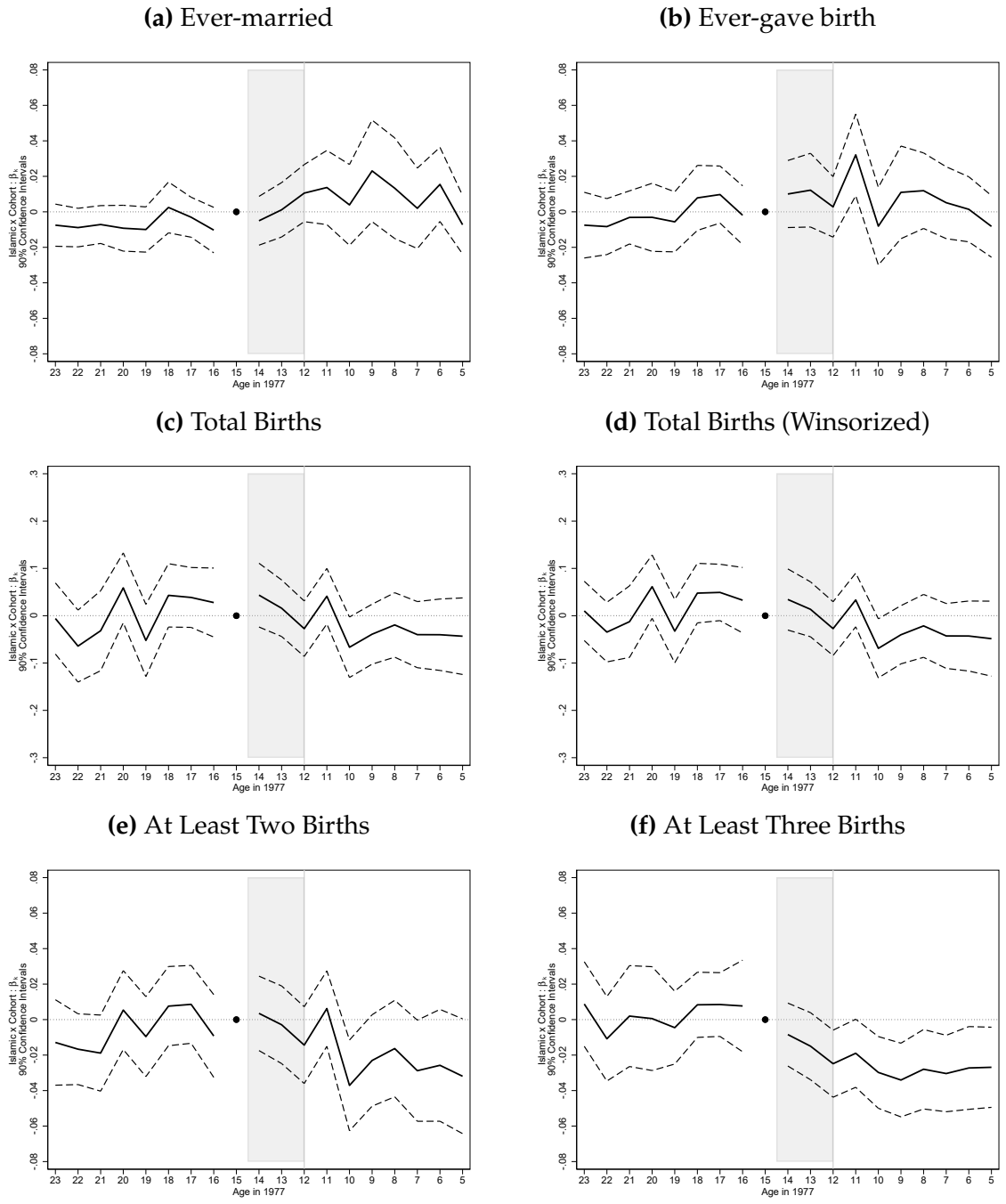


(c) Dep. Var.: Primary School Completed



Notes: This figure reports age-specific estimates of β_k and 95% confidence intervals in equation (1) for women and men subsamples, respectively. The sample contains only the individuals reside in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has ever completed lower secondary school in panel (a), upper secondary school in panel (b), and primary school in panel (c). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts on the right side of the vertical lines are fully-exposed. Cohorts aged 15 in 1977 for women and in 1974 for men serve as the reference group. Standard errors clustered by district center of residence.

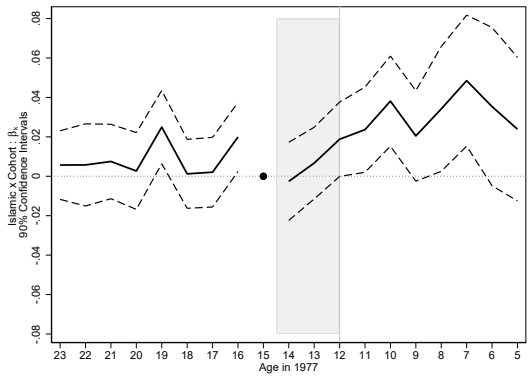
Figure D.33: Access to Islamic Schools and Family Outcomes - Effects by Single-Age-Cohorts



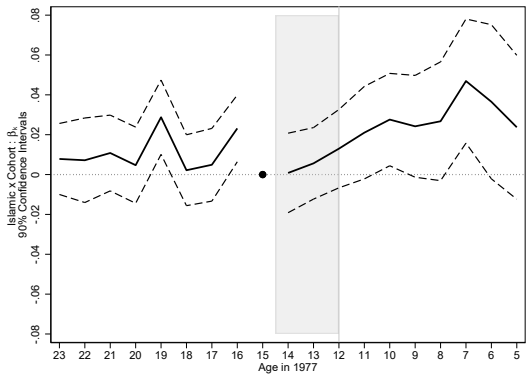
Notes: This figure reports age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district centers in 1990. The dependent variables include an indicator equal to one if the individual has ever married in panel (a), ever gave birth in panel (b), given two or more births in panel (d), and given three or more births in panel (e). The dependent variables measure the total number of birth given in panel (c) and total number of birth winsorized at the 98th percentile in panel (d). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts on the right side of the vertical lines are fully-exposed. Cohorts aged 15 in 1977 for women serve as the reference group. Standard errors clustered by district center of residence.

Figure D.34: Access to Islamic Schools and Labor Outcomes - Effects by Single-Age-Cohorts

(a) Participate in Labor Force



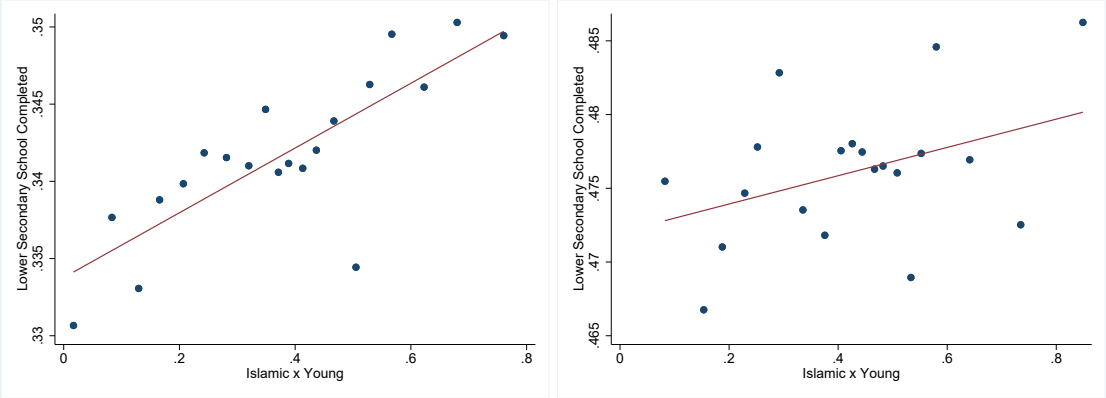
(b) Worked Last Week



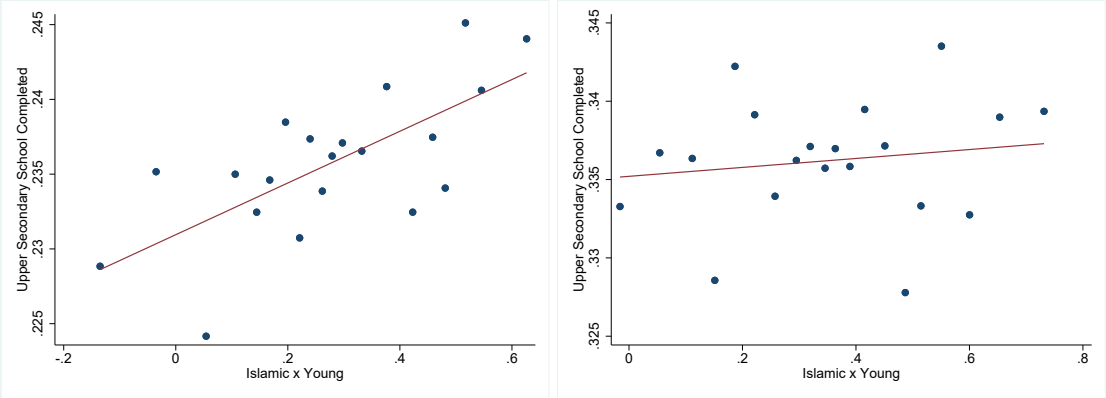
Notes: This figure reports age-specific estimates of β_k and 95% confidence intervals in equation (1) for women subsample. The sample contains the women aged 18 and older who reside in district-centers in 1990. The dependent variables include an indicator equal to one if the individual participates labor force in panel (a), and was working the week prior to census in panel (b). All specifications include district-center and province-by-cohort fixed effects, and the baseline controls interacted with cohort dummies. Cohorts on the right side of the vertical lines are fully-exposed. Cohorts aged 15 in 1977 for women serve as the reference group. Standard errors clustered by district center of residence.

Figure D.35: Added Variable Plots for Education Outcomes

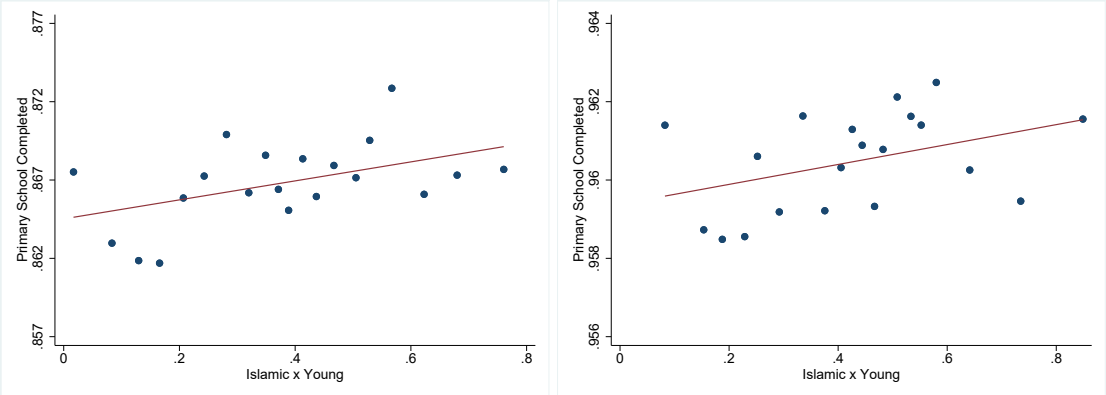
(a) Dep. Var.: Lower Secondary School Completed



(b) Dep. Var.: Upper Secondary School Completed



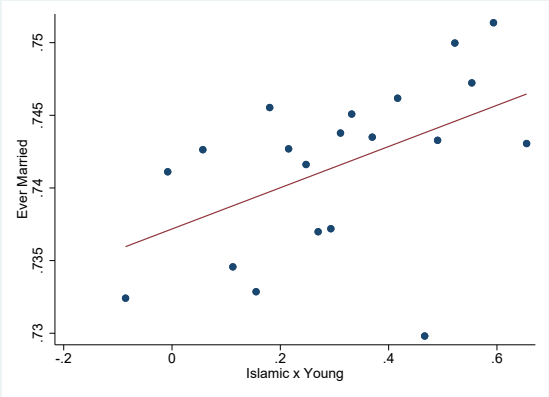
(c) Dep. Var.: Primary School Completed



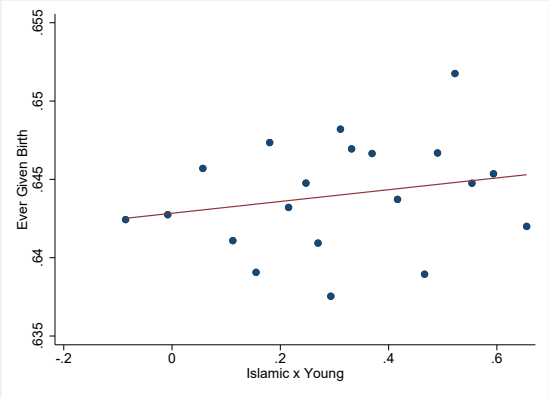
Notes: This figure presents added variable plots that shows the relation between education outcomes and main parameter of interest "Islamic x Young" after accounting for controls in the main specification in equation 2. The plots on the left side correspond to women, while those on the right side correspond to men.

Figure D.36: Added Variable Plots for Family Outcomes

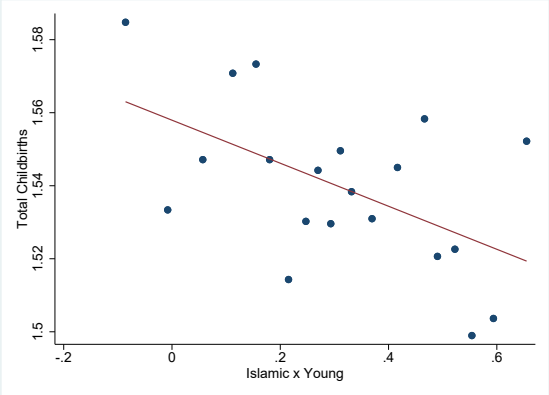
(a) Ever Married



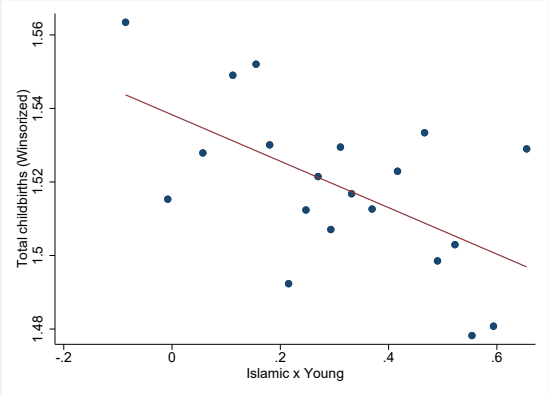
(b) Ever Given birth



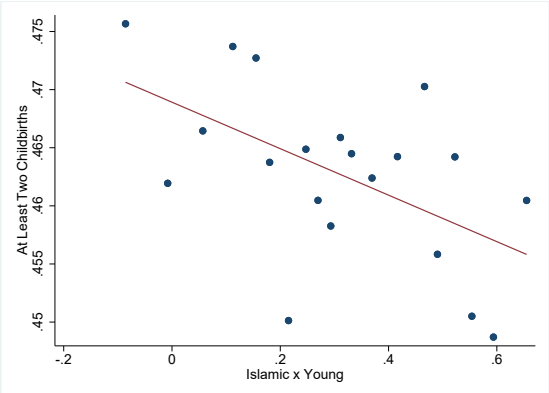
(c) Total Childbirths



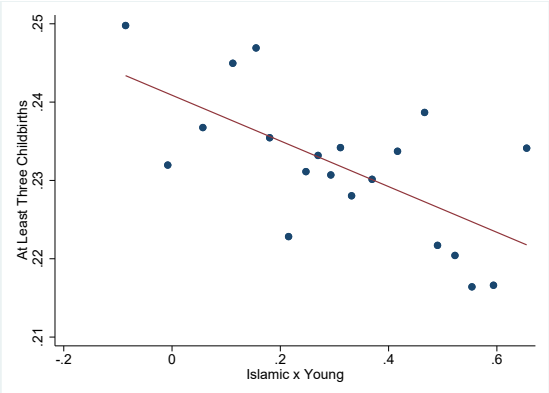
(d) Total Childbirths (Winsorized)



(e) At Least Two Childbirths



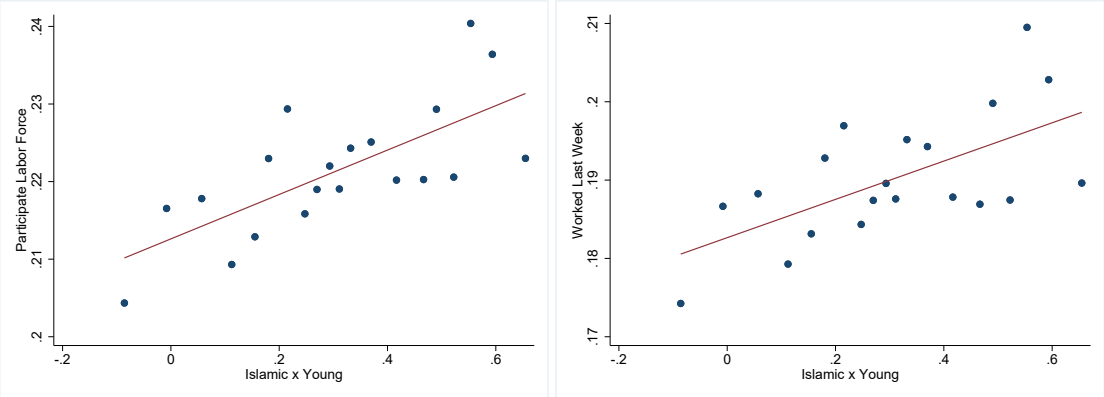
(f) At Least Three Childbirths



Notes: This figure presents added variable plots that shows the relation between family outcomes and main parameter of interest "Islamic x Young" after accounting for controls in the main specification in equation 2.

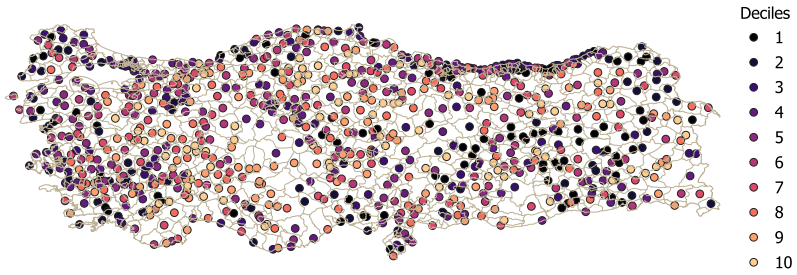
Figure D.37: Added Variable Plots for Labor Market Outcomes

(a) Participate in Labor Force **(b)** Worked Last Week



Notes: This figure presents added variable plots that shows the relation between labor market outcomes and main parameter of interest "Islamic x Young" after accounting for controls in the main specification in equation 2.

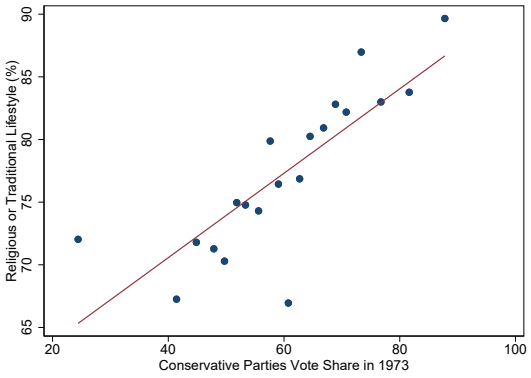
Figure D.38: 1973 Conservative Vote Share Deciles



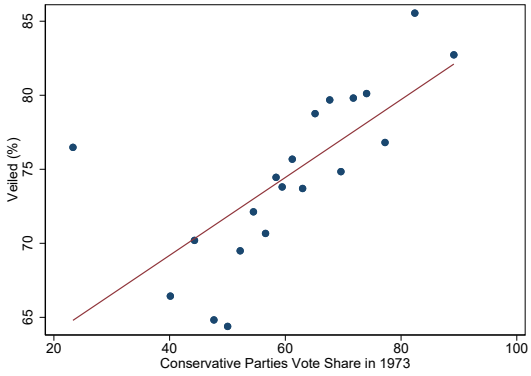
Notes: Map of Türkiye showing the 1973 conservative vote share deciles. Each dot represents a district center as of 1990.

Figure D.39: The Relationship Between Conservativeness Proxy and Contemporary Religiosity

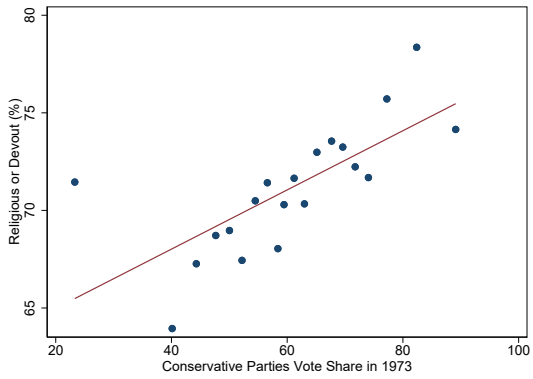
(a) Have a Religious or Traditional Lifestyle



(b) Veiled

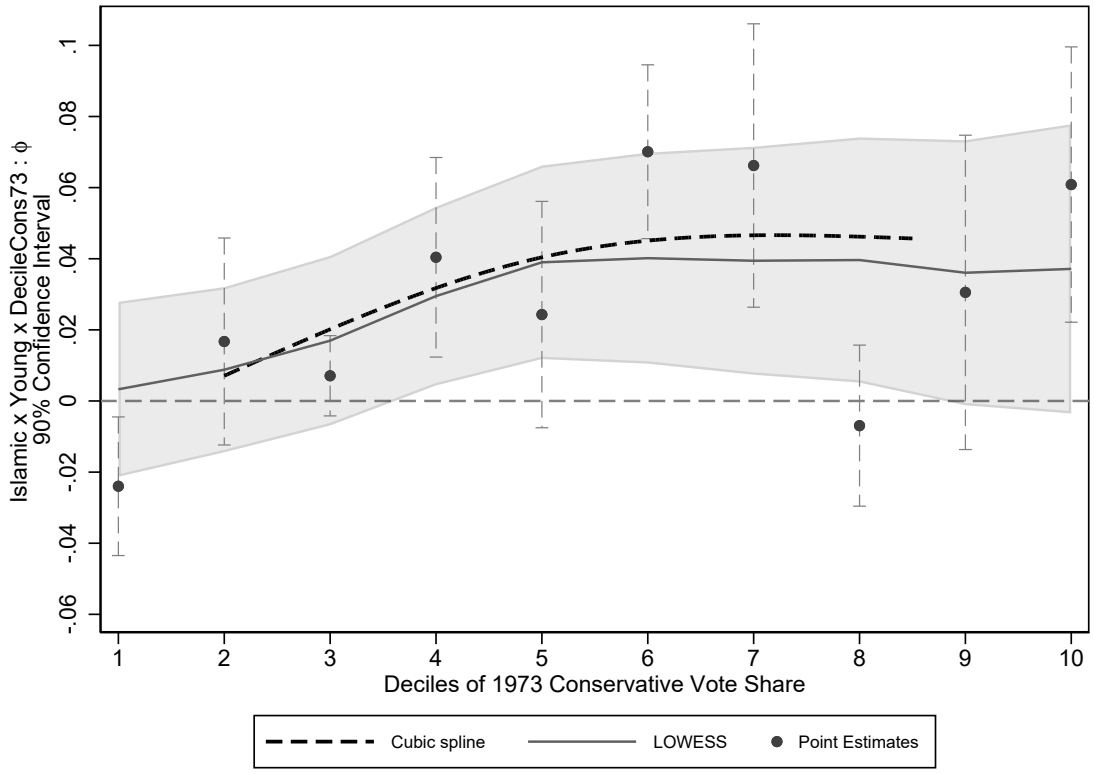


(c) Is Religious or Devout



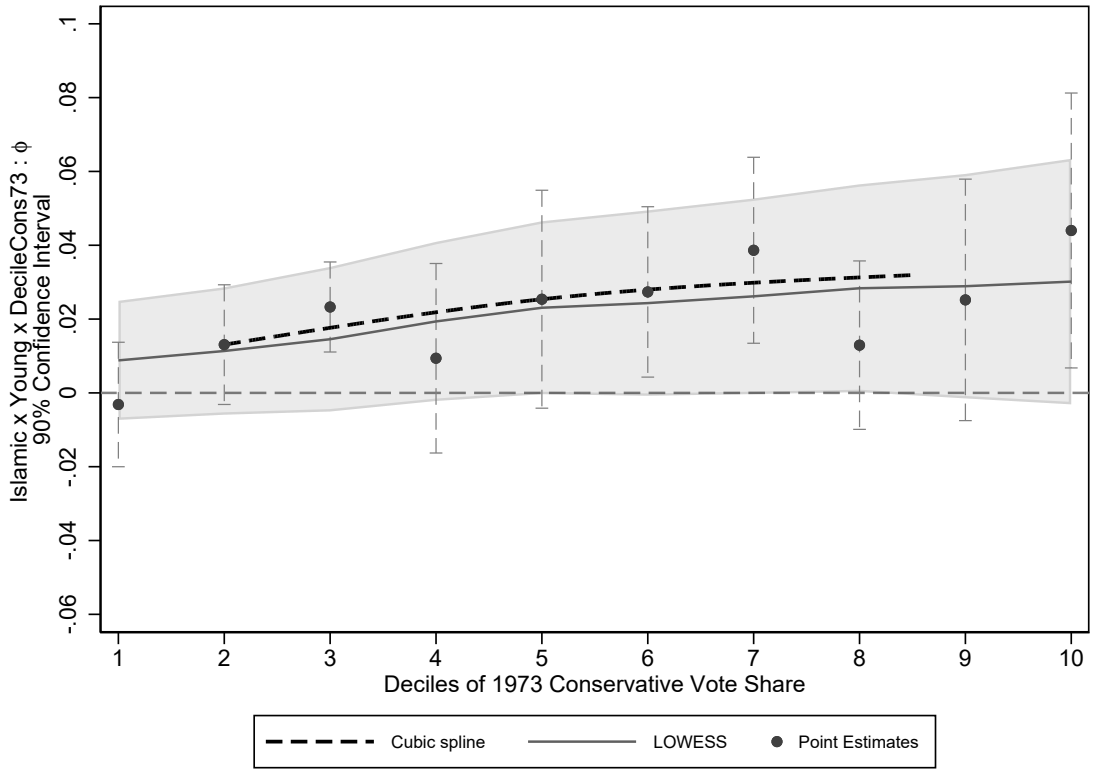
Notes: This binned scatter-plot figure presents the relationship between conservative parties' vote share in 1973 and several self-reported religiosity outcomes from KONDA's monthly Barometer series between 2010 and 2015, provided by Livny (2020). Notably, the KONDA data lacks information for about 520 district centers in panel a, and for 368 district centers in panels b and c.

Figure D.40: Impact of Islamic Schools on Upper Secondary Schooling in District Centers with Higher Conservativeness (Deciles)



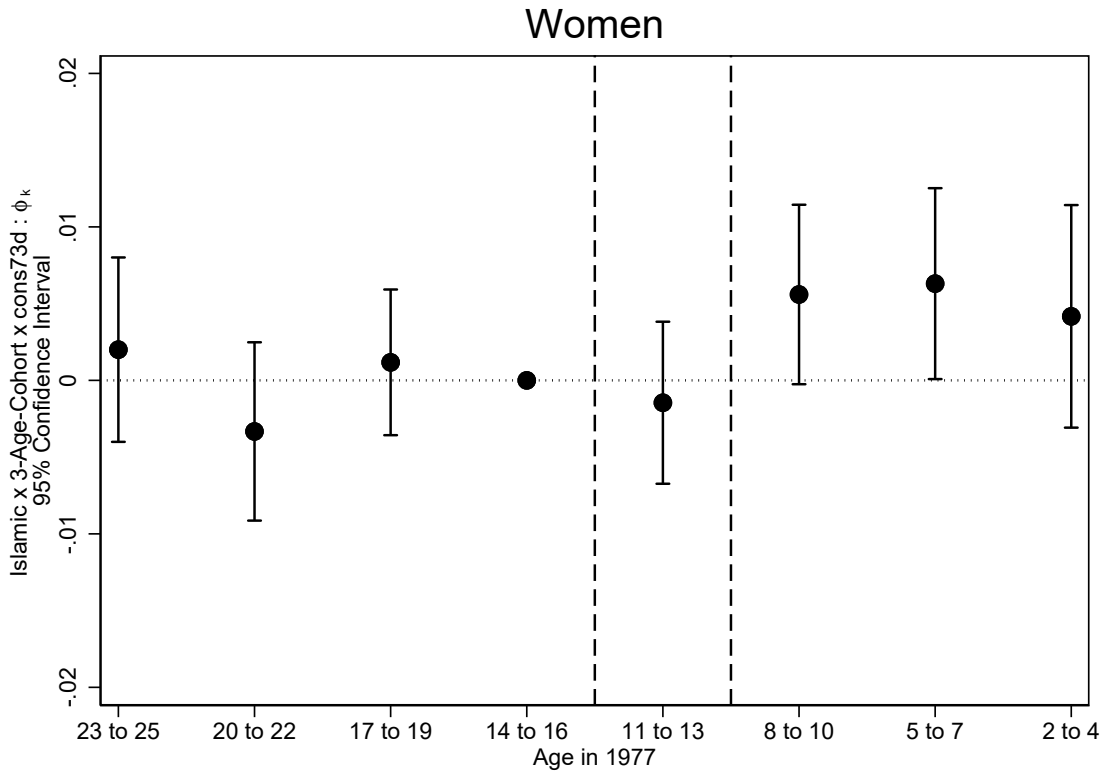
Notes: This figure presents decile-specific point estimates of ϕ along with 90 confidence intervals, based on a modified version of equation (3). It also includes a LOWESS-smoothed curve with associated confidence intervals, as well as a cubic spline fit, using the subsample of women. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed lower secondary school. All specifications include district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies. Standard errors clustered by district center of residence.

Figure D.41: Impact of Islamic Schools on Upper Secondary Schooling in District Centers with Higher Conservativeness (Deciles)



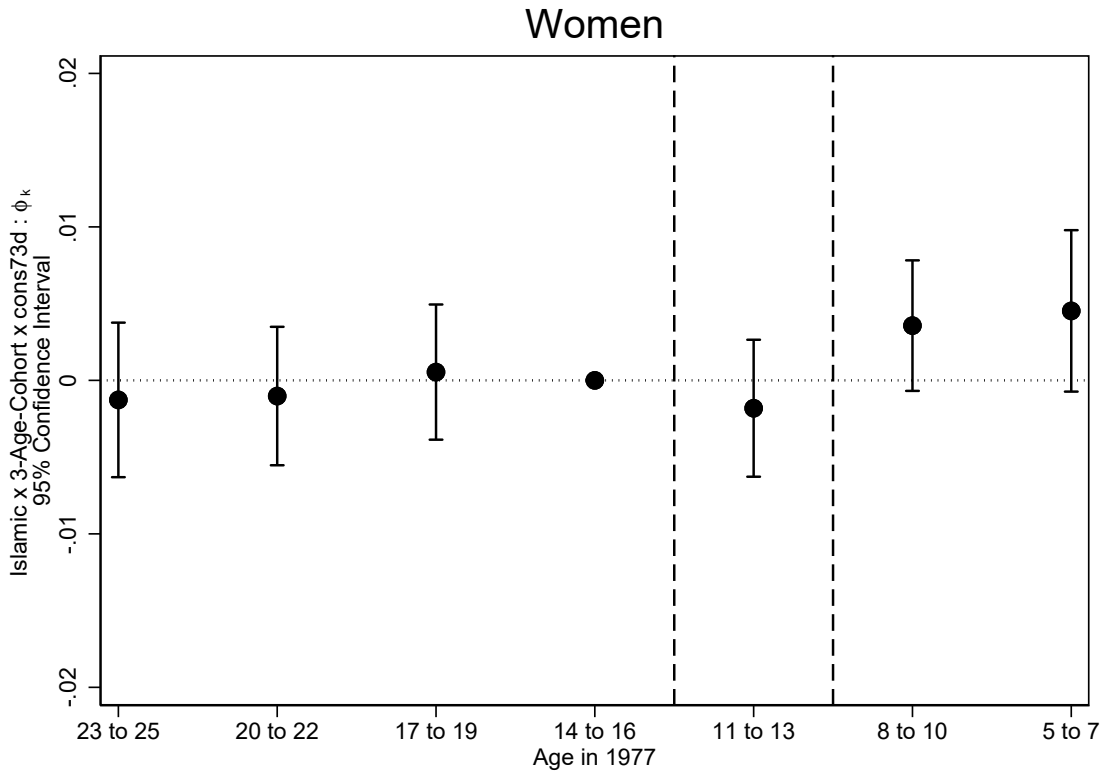
Notes: This figure presents decile-specific point estimates of ϕ along with 90% confidence intervals, based on a modified version of equation (3). It also includes a LOWESS-smoothed curve with associated confidence intervals, as well as a cubic spline fit, using the subsample of women. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed upper secondary school. All specifications include district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies. Standard errors clustered by district center of residence.

Figure D.42: Impact of Islamic Schools on Lower Secondary Schooling in District Centers with Higher Conservativeness (Event Study)



Notes: This figure reports 3-age-specific estimates of ϕ_k and 90% confidence intervals for modified version of equation (3) for the subsample of women. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed lower secondary school. All specifications include district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half-exposed and half-nonexposed cohorts. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged between 14 and 16 in 1977 for women serve as the reference group. Standard errors clustered by district center of residence.

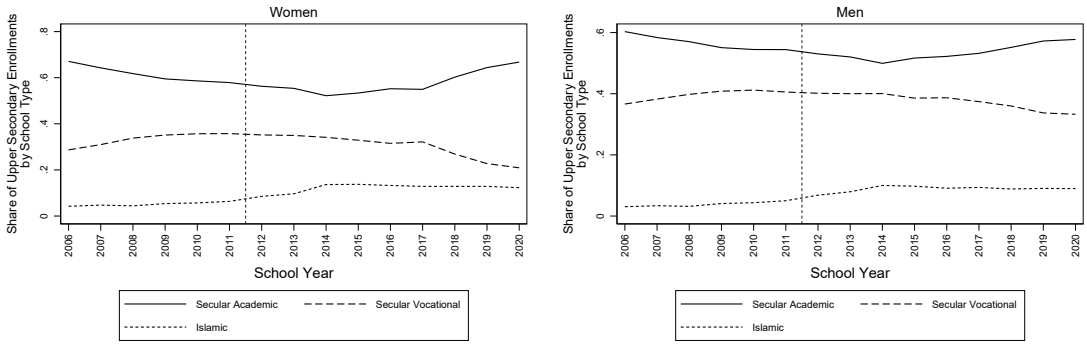
Figure D.43: Impact of Islamic Schools on Upper Secondary Schooling in District Centers with Higher Conservativeness (Event Study)



Notes: This figure reports 3-age-specific estimates of ϕ_k and 95% confidence intervals for modified version of equation (3) for the subsample of women. The sample contains only individuals resident in district centers in 1990. Islamic refers to district centers with an Islamic school in 1980. The dependent variables include an indicator equal to one if the individual has completed upper secondary school. All specifications include district center and province-by-cohort fixed effects and the baseline controls interacted with cohort dummies. Cohorts between two vertical lines include half-exposed and half-nonexposed cohorts. Cohorts on the right side of the second vertical lines are fully exposed. Cohorts aged between 14 and 16 in 1977 for women serve as the reference group. Standard errors clustered by district center of residence.

Figure D.44: Enrollment Ratios by School Type in Modern-day Türkiye

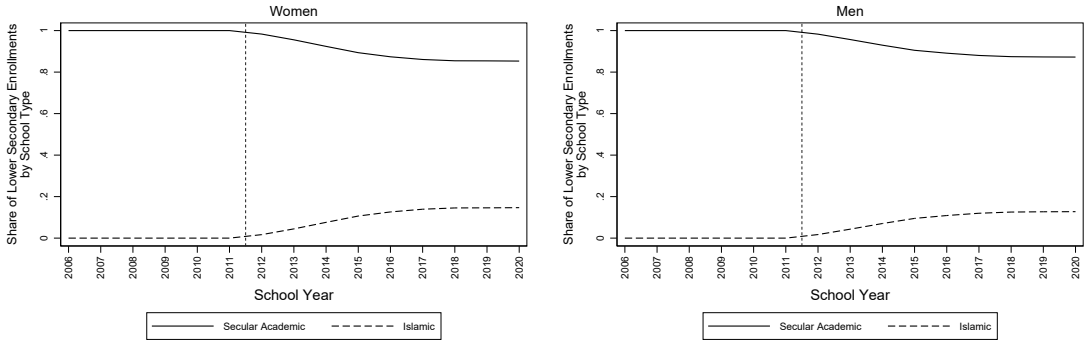
(a) Women **(b)** Men



Notes: This figure shows the evolution of enrollment rates in a given school year by school type. Enrollment ratios calculated by dividing each school type enrollments to total school enrollments for a given schooling year for each gender. Source: National education statistical yearbooks of Ministry of Education.

Figure D.45: Enrollment Ratios by School Type in Modern-day Türkiye

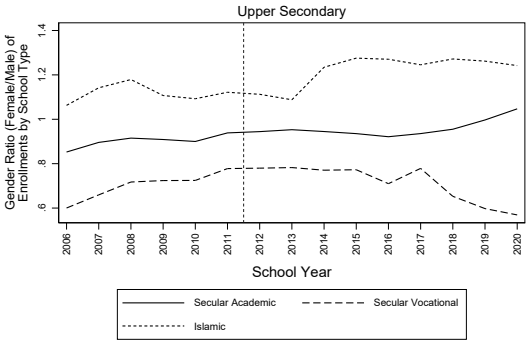
(a) Women **(b)** Men



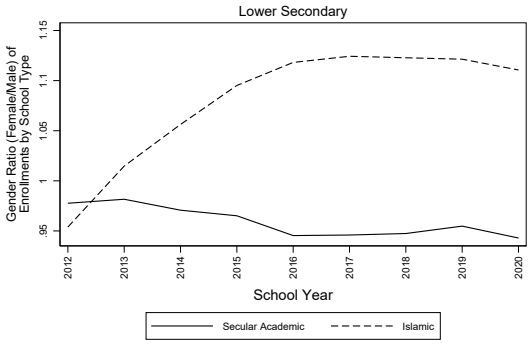
Notes: This figure shows the evolution of enrollment rates in a given school year by school type. Enrollment ratios calculated by dividing each school type enrollments to total school enrollments for a given schooling year for each gender. Source: National education statistical yearbooks of Ministry of Education.

Figure D.46: Gender Ratios by School Type in Modern-day Türkiye

(a) Upper Secondary



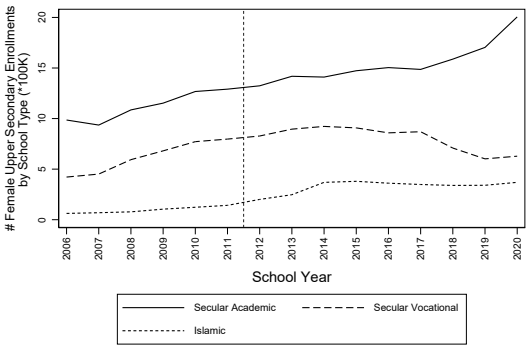
(b) Lower Secondary



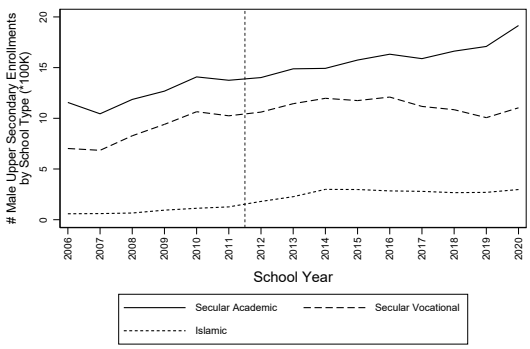
Notes: This figure shows the evolution of gender ratios in a given school year by school type. Gender ratios calculated by dividing female enrollments of male enrollments for each school type. Source: National education statistical yearbooks of Ministry of Education.

Figure D.47: Upper Secondary Enrollments by School Type in Modern-day Türkiye

(a) Women



(b) Men



Notes: This figure shows the evolution of enrollments per 100K in a given school year by school type for upper secondary education. Source: National education statistical yearbooks of Ministry of Education.

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