
**SUSTAINABLE
DEVELOPMENT
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CHAPTER 5

WOMEN EMPOWERMENT THROUGH COMPULSORY SCHOOLING REFORM: THE CASE OF TÜRKİYE

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Abstract

This study investigates the causal impacts of the 1997 compulsory schooling reform on women's empowerment in Türkiye. The reform extended the compulsory education duration from 5 years to 8 years. The policy had an impact on individuals born in 1987 onwards, whereas those born in earlier years were unaffected. This allows us to employ a regression discontinuity design (RDD) and reveal the causal impact of the reform on women's educational outcomes, their status in the family, and their perceptions and attitudes towards gender roles in relation to the Fifth Sustainable Development Goal. We examined the 2008, 2013, and 2018 waves of the Turkish Demographic and Health Survey (TDHS), which is a nationally representative micro dataset. Results show that this large-scale reform has led to significant improvements in women's educational outcomes. The policy has led to increases in the years of education, and completion of grade 8 and grade 11 for women, as well as a decrease in educational disparities between spouses. However, when we check other empowerment-related outcomes within the family, results show that the extent of empowerment is quite limited. Only one outcome in each set of variables (perception of gender roles, perception of physical violence, financial independence) shows empowerment. This suggests that higher educational attainment and improved educational status compared to the husband are not reflected in daily lives and the perceptions of women. All in all, stronger educational outcomes for women resulting from the policy have minor empowering effects.

Keywords: Compulsory schooling, women empowerment, policy evaluation, regression discontinuity design

1. Introduction

Gender-based violence, unpaid domestic and care work, unequal pay and work opportunities, and underrepresentation in politics and leadership positions are a few examples of the problems women face in society. Gender inequalities are context-dependent, and they are shaped by long-standing social norms and practices. While some countries are doing well in this regard, some have very severe inequalities. According to the United Nations (2022a):

“Inequalities faced by girls can begin right at birth and follow them all their lives. In some countries, girls are deprived of access to health care or proper nutrition, leading to a higher mortality rate.”

Türkiye is an upper-middle-income country that has made remarkable development progress during the last century, but the positive results of development have not been equally reflected in men’s and women’s outcomes. Türkiye’s Human Development Index (HDI) value was 0.583 in 1990 and increased to 0.820 in 2019 (UNDP, 2020b). According to UNDP (2022a), while Türkiye has recently risen to a greater level of human development, inequality remains a major concern, particularly due to persistent gender discrepancies. The HDI value for males and females in 2019 was 0.848 and 0.785, respectively, which indicates the magnitude and persistence of gender inequality. This implies that the positive benefits of development have not equally affected men and women, and recognizing the barriers to women’s empowerment is critical.

In this study, we aim to investigate the effects of a major education policy in Türkiye through a gender lens. 1997 compulsory schooling reform increased the duration of compulsory education from 5 years to 8 years and students who finished grade 4 in the summer of 1997 were affected by the new policy. The reform involved substantial investment in education infrastructure and resulted in equalizing educational outcomes of rural/urban area residents and boys/girls (Kırdar, Dayıoğlu, & Koç, 2016). Through this policy, girls who would not continue beyond the compulsory schooling received three more years of education and this is likely to affect their gender role perceptions, marriage, birth and labor market outcomes. Therefore, the policy has great potential to empower affected individuals. We intend to assess the impacts of the 1997 compulsory schooling policy on women’s outcomes to determine the level of empowerment through education and the barriers to achieving gender equality in the Turkish setting.

By assessing the empowerment effects of the reform, we will contribute to the women’s empowerment and policy evaluation literature. We will analyze the causal impacts of compulsory schooling on women’s empowerment by using three waves of nationally representative

data, therefore the results of this study will inform the extent of and barriers to women's empowerment in Türkiye. As the positive benefits of economic development are not shared equally by genders, insights coming from this study will be quite important. In the rest of the paper, the next section gives the conceptual framework by discussing gender inequality and its dimensions and women's empowerment, section three discusses a general overview of women's empowerment in Türkiye, women's current status and the institutional framework of compulsory schooling, in section four data and methodology will be explained, in section five results will be documented and section six discusses the results and concludes.

2. Conceptual Framework

2.1. Gender Inequality and Its Dimensions

Gender inequality impacts the lives of women all around the world; these inequalities put women at a disadvantage in many aspects of public and private life. Women usually face barriers to having a say in household decisions, obtaining a quality education, participating in the labor market and representing themselves in politics. However, women make up half of the population and their inability to benefit from the same resources and opportunities as men harms society and its long-term development. For this reason, ensuring gender equality has been one of the key policy areas on the global agenda in the past three decades. The most recent example of global policy action is the fifth Sustainable Development Goal¹, which aims to achieve gender equality and empower all women and girls by 2030. It specifically targets the following results:

- 5.1. Ending discrimination against women and girls;
- 5.2. Ending all violence against and exploitation of women and girls;
- 5.3 Eliminating forced marriage and genital mutilation;
- 5.4 Valuing unpaid care and promoting shared domestic responsibilities;
- 5.5 Ensuring full participation in leadership and decision-making
- 5.6 Universal access to reproductive health and rights;
- 5.7 Equal rights to economic resources property ownership and financial services;
- 5.8 Promoting the empowerment of women through technology; and
- 5.9 Adopting and strengthening policies and enforceable legislation for gender equality.

1 For further information, see <https://www.globalgoals.org/goals/5-gender-equality/>

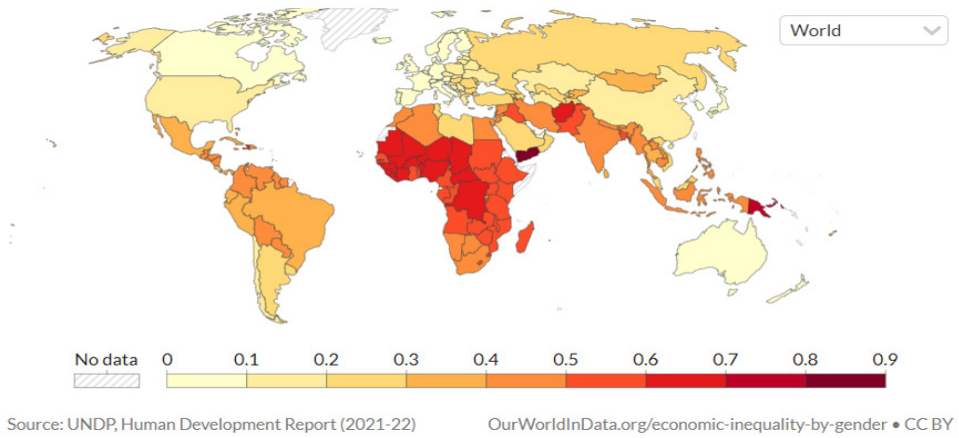


Figure 2. Gender inequality index score across countries in 2021
Source: UNDP (2022b) Development Report

According to the GII, Türkiye reduced its inequality score from 0.611 in 1990 to 0.272 in 2021. This indicates that Türkiye has achieved significant progress in eliminating inequality throughout the years and the progress is visible in Figure 3. However, because of the substantial gender gap in labor force participation and parliamentary representation, Türkiye has a higher score and hence more inequality than the average of industrialized countries (see Figure 2). This index addresses the need for policies that would increase women's labor market and political participation to fight against gender inequality in Türkiye.

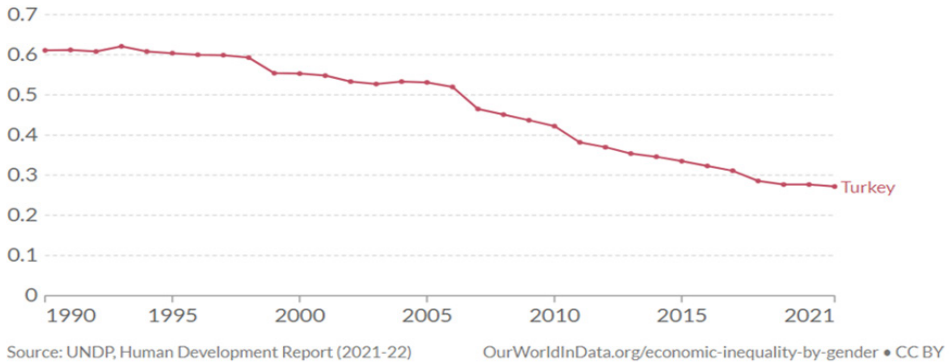


Figure 3. Gender inequality index score of Türkiye through years
Source: UNDP (2022b) Human Development Report (2021-22)

To understand the nature of gender inequalities in depth, one can focus on the public and private spheres in Türkiye. Kağıtçıbaşı (1986) argues that after the establishment of the Republic, legal and institutional reforms established the framework for ending sex segregation and discrim-

inatory legal treatment of women. Although there was a legal institutional setting to reduce gender inequality, many women's daily living conditions remained unchanged following the reforms. She remarks that the structures in the private sphere arise from many factors ranging from economic conditions to sex roles, from religious beliefs to family and household structures. Therefore, it is unrealistic to expect legal and institutional reforms to result in total cultural change.

İlkkaracan (2012) argues that like Middle East and North African countries, Türkiye's macroeconomic performance also contributed to the weak feminization of the labor force and helped the institutionalization of the patriarchal contract: the gendered division of labor. She argues that the male-breadwinner/female-housewife household is represented in the Turkish legal system as well.² Until the 2003 revision, according to the Turkish Civil Code, men are the family's head and breadwinner, while women are homemakers; it also made married women's involvement in the labor force dependent on their husbands' permission. Therefore, we understand that one factor that contributes to the extent of gender inequality in Türkiye is the traditional division of labor and women's internalization of related gender norms.

Although there is an egalitarian legal institutional setting in Türkiye, we see the need for women's empowerment both in public (educational attainment, labor force participation, political engagement) and private (household) spheres.³ Gender inequalities at micro and macro levels reinforce each other and help the vicious cycle of bad practices. To support women in the public sphere, policies with regard to the private sphere such as increasing women's bargaining power and autonomy in the household might be helpful. For example, cash transfers to mothers might increase their decision-making power in the family and subsequently the school enrollment rate of their daughters. However, a nationwide compulsory schooling reform allowing girls to continue school longer might change the household dynamics and women's status in the household through various mechanisms (age at marriage, labor market participation, change in husband characteristics, etc.). Since compulsory schooling reforms are big in scale and affect the enrolment choices of certain groups throughout the country, a careful analysis is needed to uncover their all effects on gender equality and to understand the channels and challenges of women empowerment in society. Because of this, we will evaluate the results of the 1997 compulsory schooling reform in Türkiye through a gender lens.

2 İlkkaracan (2012) also remarks that there is an egalitarian legal institutional setting in Türkiye, but some laws reflect the male bias.

3 The evaluation of gender equality performance of Türkiye between 2000-2019 suggests a gap between Türkiye's human development and gender development performance. As such Türkiye ranks in the Global Gender Inequality Index 68th despite ranking 54th in the Human Development Index (UNDP Türkiye, 2022a).

2.2. Women's Empowerment

As we mentioned previously, women's empowerment has been on the development agenda for a long time. First of all, women's empowerment is a valuable goal on its own. Kabeer (2005) argues that empowerment is an inherent rather than an instrumental objective, openly regarded as an end in itself rather than as a means to an end.

Kabeer (1999) asserts that empowerment is a fuzzy term that has not been properly defined. She defines the phrase by discussing all the essential facets, including agency, resources, and accomplishments. For her, empowerment entails reclaiming the ability to make choices after having been previously deprived or denied the power to do so. Transformation occurs as a result of empowerment, and most crucially, women experience an improvement in their ability to reach critical life decisions. When assessing empowerment in various circumstances, agency, resources, and accomplishments are crucial factors to take into account, according to Kabeer (1999). Decision-making requires resources, agency is the mechanism for making decisions, and achievement is the result of the process. Because of empowerment, having agency means doing more than just making decisions and it also calls power dynamics into question. Therefore, in this study we will regard empowerment as women's ability to make choices, have the necessary resources while doing choices and control their own lives.

Education plays a critical role in empowering women. It provides women with the knowledge and skills they need to participate in the workforce and contribute to their families and communities. It also helps them gain confidence and independence, leading to greater autonomy and decision-making power. Access to education enables girls and women to develop critical thinking skills and to become informed citizens who can participate in their communities and contribute to decision-making processes. It can also help to break down gender stereotypes and promote gender equality.

Studies have shown that educated women are more likely to have better health outcomes, marry later, and have fewer children (Brunello, Fort, Schneeweis, & Winter-Ebmer, 2015; Monstad, Propper, & Salvanes, 2008; Cygan-Rehm & Maeder, 2013). They are also more likely to earn higher wages and to be in positions of leadership and influence. In addition, educated women are better able to advocate for their own rights and to access resources and services, such as healthcare and financial services. Therefore, education is essential to the empowerment of women, as it provides them with the tools and knowledge they need to take control of their lives and contribute to their families, communities, and societies.

3. General Overview

3.1. Women Empowerment from a Historical Perspective in Türkiye

Women's empowerment in Türkiye is an ongoing struggle with roots dating back to the Ottoman Empire (Yenilmez, 2017). Türkiye has a long history of patriarchy, where women have been confined to the domestic sphere and have had limited access to education and employment opportunities. Peculiarly, the established social norms and beliefs have shaped the status of women and placed them in a lower position than men (UNDP, 2005). Women have long been expected to fulfill specific roles within the family and community, with their values largely judged based on their ability to meet these expectations. While there have been some changes in attitudes toward gender roles in Türkiye over the years, traditional beliefs continue to influence the status of women and their duties. For instance, according to recent statistics, childcare responsibility falls on women in 94.4% of households. Similarly, women do most of the house chores like tidying the house, cleaning, and cooking in 85.6%, 80.9%, and 84.8% of the households, respectively (TURKSTAT, 2022). Therefore, these norms constitute various challenges that limit women's opportunities and prevent them from reaching their full potential. Nevertheless, there have been tremendous efforts to promote gender equality and empower women in all aspects of life since the proclamation of the Republic. The Republic era, which began in 1923, brought about significant changes in women's rights. Most remarkably, Turkish women gained major rights - the rights of child custody, divorce, and inheritance, the right to vote both in local and general elections as well as run for political office - much earlier than their Western counterparts (Cinar & Ugur-Cinar, 2018). Hence, within the secularization process of Türkiye, traditional gender roles have been challenged, and the government has introduced various policies and initiatives aimed at promoting women's education, employment, and empowerment.

One important initiative to promote girls' educational outcomes is the 1997 education reform, which extended compulsory education from 5 years to 8 years. Although the policy aims to increase compulsory education for both girls and boys, the effect of the policy on girls' education is more significant. While before the policy change, the net schooling ratio of girls in secondary school was lower (44.62%) than that of boys (60.6%), and the policy decreased the gap substantially in terms of educational attainment between males and females (Kirdar et al., 2016). However, despite the mandatory education reform, some parents, especially those living in rural areas, did not comply strictly with the policy. Hence, another initiative was implemented in 2003, the "Girls' Education Campaign," which aims to increase enrollment and reduce dropout rates among girls in primary and secondary schools. Additionally, high school

education became compulsory in 2012, and the expansion of higher education/universities has taken place since 2016, which improves access to education by women.

In addition to opportunities provided in education, Türkiye has taken steps to increase women's participation in the workforce in recent years. The first action plan "More and Better Jobs for Women: Women's Empowerment through Decent Work in Türkiye" was enforced to enhance women's employment in 2016. The government has also introduced policies such as flexible working hours, childcare facilities, and extended maternity leave to help women balance work and family responsibilities. Furthermore, there are policies in place to combat inequality in the workplace and promote equal pay for equal work like "The Strategy Paper and Action Plan on Women's Empowerment 2018-2023". Additionally, the "Women's Entrepreneurship Program," which provides training, mentoring, and financial support to women desiring to start their businesses, has been implemented to empower women.

However, gender-based violence, such as domestic abuse and honor killings, remains prevalent in Turkish society. The government has established women's shelters and helplines to support women who are victims of violence or abuse. Moreover, it has taken steps to address these issues, specifically, the 6284 Law to Protect Family and Prevent Violence Against Women, enforced in 2012, criminalizes domestic violence and establishes protective measures for victims. After this law, the "National Action Plan on Combating Violence Against Women" began to be prepared by the Ministry of Family, Labour and Social Services for every 3 or 4-year period.

3.2. Current Status of Women in Numbers

Women's status in Türkiye has undergone significant changes over the past few decades as the country has experienced rapid modernization and development. However, despite some progress in recent years, there are still significant challenges facing women, particularly in terms of gender inequality.

One of the key indicators of gender inequality is the low female labor force participation in Türkiye. Solely 32.8% of women participated in the labor force in 2021, well below the OECD average of 64.8% (TURKSTAT, 2021a; OECD, 2021). Accordingly, the female employment to population ratio remains at a low level of 28%. The pay gap between women and men is also a pressing issue which women earn 15.6% less than their male peers (ILO, 2020). Additionally, working women are more likely to be employed in informal, low-paying jobs without benefits or job security.

Another significant challenge facing women is intimate partner violence. According to the gender statistics report (TURKSTAT, 2021b), the percentage of women who had suffered from either physical violence, or sexual violence, or both at least once during their lifetime is 35.5%, 12%, and 37.5%, respectively. The government has taken steps to address this issue. A recent development in this regard is the enforcement of the “Protocol on the Empowerment of Women and Institutional Capacity Building and Increasing Cooperation and Coordination for Combating Violence against Women” in 2019.

Although the statistics have revealed an underwhelming situation, there have been some positive developments for women in Türkiye. For example, the representative percentage of female ambassadors has increased steadily over the past two decades, from 6.9% in 2002 to 27.2% in 2022 (TURKSTAT, 2022). A similar pattern exists for the female representatives in the Assembly, in which the proportion of women has almost quadrupled and reached 17.3% in the same period. Additionally, the number of female academics is very close to that of males in higher education. Moreover, the proportion of women aged 25 and over who have completed at least one level of education was 87.3% in 2021. Of those, 18.5% hold high school degree, and 20.9% have completed higher education (including master’s and doctorate’s degrees), a figure which has doubled in the last decade.

3.3. Institutional Framework

The education policy implemented in August 1997 increased compulsory schooling from 5 to 8 years. Within the reform, the 5+3+3 education system combined the first two tiers, primary and lower secondary school, and merged them under the scope of compulsory primary education. The 3-year upper secondary school education remains optional. Students lower than grade 5 at the end of the 1996/1997 academic year were bound to the policy. Hence, individuals who completed grade 4 in this academic year and were born in 1987 comprise the first cohort influenced by the policy.

According to the National Education Statistics announced by the Ministry of National Education (MoNE), the net schooling ratio was 89.4% in primary schools (grades 1-5) and 52.8% in lower secondary schools (grades 6-8) in the 1996/1997 academic year, whereas the net schooling rate in primary education (grade 1-8) reached 95.3% in the 2000/2001 academic year. New investments had been made to increase the supply side of education and accommodate newly coming students before the enforcement of the policy. Before the policy change, the budget allocated to the MoNE was 15%, while after that, it increased to 37.34% (Kırdar et al., 2016). In this context, MoNE followed several strategies, like constructing schools and

classrooms, assigning new teachers, busing children residing in rural areas to schools, and providing free school uniforms and textbooks to children from socioeconomically disadvantaged backgrounds.

In the literature, researchers highlight two underlying motivations for implementing education reform. The first is political reasons, which Gulesci and Meyersson (2013) reviewed. After the Welfare Party (an Islamist party) held the parliament's largest share in the 1995 National Elections, the conflict between the Islamist movement and secular circles began to increase, and Türkiye experienced the 1997 military memorandum, known as the postmodern coup. Following National Security Council suggestions, the 1997 compulsory schooling expansion was implemented, which led to a drop in the enrollment of students in the religious schools which were highly popular before. The other motivation was to ease the accession process of Türkiye to the European Union (Dursun, Cesur, & Mocan, 2018; Dinçer, Kaushal, & Grossman, 2014). The lower educational attainment and regional disparities were some of the obstacles in the way. So, increasing compulsory education would lower the disparities in Türkiye.

This study investigates the causal effects of the 1997 education reform on women's empowerment. Similarly, a bunch of studies examine the effects of education in Türkiye, using this policy change as a quasi-experimental design, on several outcomes of individuals, like teenage marriage and fertility (Kırdar, Dayıoğlu, & Koç, 2018), gender inequality (Kırdar et al., 2016), labor market outcomes (Aydemir & Kırdar, 2017), voting behavior (Cesur & Mocan, 2018), happiness (Dursun & Cesur, 2016), physical and domestic violence (Erten & Keskin, 2018; Gulesci, Meyersson, & Trommlerová, 2020), and health (Tansel & Karaoglan, 2016). In addition to these, the effect of this policy on the outcomes of second generations, especially related to health issues, has been recently examined (Usta, 2020; Özer, Fidrmuc, & Eryurt, 2018; Güneş, 2015). Moreover, Dinçer et al. (2014) use this reform to reveal the effect of education on women's fertility and empowerment. As a proxy for women's empowerment, they investigate the attitudes towards gender roles, modern contraception methods, antenatal visits, and knowledge of the ovulation cycle. They provide evidence that the proportion of women who make antenatal visits, use contraception methods, and have knowledge of the ovulation cycle increased along with education. At the same time, there has been no effect on attitudes towards gender roles. Similar to this research, we explore women's empowerment through education by using recent statistics, which broadens the time period, and by employing a different identification strategy, which will be discussed in detail in the next section.

4. Data and Methodology

4.1. Data

The data used in this study come from the Turkish Demographic and Health Survey (TDHS) waves of 2008, 2013, and 2018. The TDHS provides a nationally representative dataset. The Hacettepe Institute of Population Studies surveys Turkish families, and 15-49-year-old ever-married women are selected for the key modules to collect information on health-related outcomes of both mothers and their children and women's status in the family. The data also includes detailed information about the socio-demographic characteristics and household dynamics of the respondents.

The TDHS dataset is excellent for our study because it allows us to investigate the impacts of schooling reform on women's empowerment in a regression discontinuity design. Individuals' schooling levels can be discovered in a variety of characteristics, including educational accomplishments, highest grade completed, and years of schooling. Moreover, a variety of variables in the data can be viewed as markers of women's empowerment, for instance, women's opinions toward gender roles and physical violence, as well as the frequency of controlling behavior by their husband/partner.

There are 20,108 ever-married women in the pooled dataset. Women range in age from 15 to 49, with a mean age of 34.7. In the study, we restrict our sample to birth cohorts near the cutoff date, and descriptive statistics are presented for women born between 1981 and 1992.⁴ Table 1 shows the educational attainment of ever-married women. The sample's average years of schooling is 7.2. The completion rates for grades 8 and 11 are roughly 49 percent and 30 percent, respectively. On average husbands are 1.4 years more educated than wives and in almost 21 percent of households the wife is more educated than the husband.

	Mean	SD	Obs
Years of Schooling	7.213	4.315	6979
Educational Attainment			
Grade 8	0.487	0.499	6979
Grade 11	0.296	0.456	6979
Difference between husband and wife schooling	1,404	0.679	6494
Wife is more educated	0.209	0.407	6495
Note: Data comes from 2008 2013 and 2018 TDHS. Summary statistics are displayed for women of cohorts 1981-1992.			

4 The reason of the sample restriction will be explained in detail in Section 3.2 Identification Strategy.

Table 2 displays the sociodemographic characteristics of the sample to better comprehend the condition of women. The women in the sample, on average, are 27.8 years old and have 1.8 children. 73.7% of them live in urban areas and 54.7% of those have held a job previously. The average wealth index score is 2.8 out of 5. The average age of their spouse is 32.5 and they have roughly 9.8 years of education.

	Mean	SD	Obs
Age	27.794	4.607	6980
Urban residence	0.737	0.440	6980
Number of children	1.824	1.317	6980
Ever-worked	0.547	0.497	6980
Wealth level	2.824	1.372	6980
Partner's age	32.479	6.176	6739
Partner's years of education	9.814	10.851	6580

Note: Data comes from 2008 2013 and 2018 TDHS. Summary statistics are displayed for women of cohorts 1981-1992.

Table 3 summarizes women's attitudes toward gender roles. These statements demonstrate the extent to which women accept unfair gender norms. Observing the impact of policy on these variables would provide insight into the change in women's bargaining power and understanding of gender equality. 14% of women in the sample believe that crucial choices should be made by men, nearly 50% agree that women with children should not work, and 75% agree that women should be virgins when they marry.

	Mean	SD	Obs
Important decisions should be made by men	0.140	0.347	6948
Husband should help with household chores	0.650	0.476	6938
Educating a son is better than a daughter	0.862	0.280	6956
Women with children should not work	0.497	0.500	5007
Women should be more involved in politics	0.761	0.426	6242
Women should be virgin on the wedding night	0.750	0.432	6708

Note: Data comes from 2008 2013 and 2018 TDHS. Summary statistics are displayed for women of cohorts 1981-1992.

Table 4 depicts women's attitudes regarding physical violence. Wife beating is accepted in a variety of conditions, with 10% of respondents supporting it in the case of neglecting children. Nevertheless, the percentage of women who agree with other assertions is low, 14 % believe violence is justified in at least one of these instances. Approval of physical violence in marriage implies significant women's disempowerment, since they are not untroubled by a practice that is destructive to their health and well-being.

Table 4. Descriptive statistics: The attitudes toward physical violence			
	Mean	SD	Obs
Beating is justified if the wife ...			
neglects the children	0.100	0.300	6943
argues with the husband	0.075	0.264	6919
refuses to have intercourse	0.027	0.162	6932
burns the food	0.013	0.117	6963
Agrees with at least one reason	0.14	0.347	6980
Note: Data comes from 2008 2013 and 2018 TDHS. Summary statistics are displayed for women of cohorts 1981-1992.			

Table 5 contains summary statistics on ever-worked status and controlling behaviors that ever-married women face. The survey asks how frequently certain activities occur, and we consider that there is a controlling action if the answer is frequently or occasionally. The most common controlling behavior faced by women is that their husband demands to know where they are with 38%. The share of other controlling behaviors, such as the husband preventing her from meeting friends is roughly 11%, and the husband limiting contact with her relatives is 7.5%. Finally, 45% of women report being subjected to at least one of these controlling behaviors. If we check the summaries of economic independence variables we see that 54% of women report that they worked at least once in their life and almost 24 % say that they have money to spend.

Table 5. Descriptive statistics: Controlling actions and ever-work			
	Mean	SD	Obs
Husband...			
limits contact with her family	0.075	0.263	6971
insists on knowing where she is	0.387	0.487	6966
prevents her from seeing friends	0.109	0.312	6971
accuses her of being unfaithful	0.042	0.200	6968
distrusts with money	0.059	0.236	6968
Facing at least one controlling action	0.448	0.497	6980
Woman has her own money to spend	0.238	0.426	5094
Woman ever-worked	0.547	0.497	6980
Note: Data comes from 2008 2013 and 2018 TDHS. Summary statistics are displayed for women of cohorts 1981-1992.			

4.2. Identification Strategy

The 1997 compulsory schooling policy brought an exogenous variation in the education outcomes of individuals according to their birth cohorts. While the reform affected students who were in at most 4th grade in the 1996/1997 educational year, i.e., individuals born in

1987 and after, the older cohorts were not influenced by the policy change. Hence, this setting enables us to employ regression discontinuity design (RDD) and to reveal the causal relationship between the policy and women's empowerment in Türkiye.

RDD is a quasi-experimental design and through this setting, we mimic a natural experiment by comparing outcomes of treated (affected by the policy) and non-treated (not affected by the policy) cohorts. This strategy allows obtaining the treatment effect at the cutoff point (where the treatment status changes) with the assumption that cohorts born one year apart from each other (i.e. 1986 and 1987) show no systematic difference except their treatment status.

The core of RDD is based on 3 points: (i) explaining the running variable which determines whether an individual is treated or not, (ii) focusing on the cutoff, and (iii) comparing the observations on either side of the cutoff. In our study, the 1997 education policy creates a cutoff that some students were affected by the reform (treated) and some were not (non-treated). The running variable determines the treatment status and it is the year of birth, in our case since school starting is mainly settled according to age in Türkiye. Therefore, in our setting individuals who were born before 1987 were not affected by the reform, while those who were born in 1987 and after were affected, as we mentioned the year 1987 is the cutoff point where the treatment status changes.

The key assumptions of RDD are the continuity, the local randomization of treatment assignment, and the absence of manipulation around the cutoff. The continuity assumption requires that the relationship between the running variable and the potential outcomes is continuous around the cutoff point. This means that there are no sudden jumps or discontinuities in the outcomes solely due to the running variable. The local randomization assumption states that treatment assignment is as good as random around the cutoff point, and there are no systematic differences between individuals born just before and after the cutoff date, except for the treatment effect of the education reform. Finally, the absence of manipulation assumption implies that individuals cannot manipulate their year of birth to be assigned to a particular group. As we know the year of birth is a predetermined variable, manipulating this information is very hard and education reform is an exogenous random event, independent from the year of birth. Therefore, all these assumptions hold in our study, so that the regression discontinuity design can provide a valid estimate of the causal effect of the education reform on women's empowerment and enables us to find the average treatment effect (ATE) of the policy for the subsample that we focus on. The only possible issue is that parents did not strictly comply with the starting age of school and did not send their children to school when

they were at the age of 7. Yet, this is not a problem in terms of violation of the assumptions; it only creates a fuzziness at the cutoff.

The assignment to the treatment is a deterministic function of birth year, as illustrated below;

$$D_i = \begin{cases} 0, & x < 1987 \\ 1, & x \geq 1987 \end{cases}$$

where D_i is a treatment assignment, taking 1 if an individual was treated (affected by the policy), and 0 if an individual was not treated.

Following the basic regression model proposed by Hunnington-Klein (2022);

$$Y_i = \beta_0 + \beta_1 f(x_i) + \beta_2 D_i + \varepsilon_i$$

where the dependent variable, Y_i , is the outcome of interest, which could be a measure of women's agency, employment, or decision-making power. $f(x_i)$ is a function of the running variable (i.e., year of birth) centered around the cutoff. We will follow a parametric estimation strategy and use both linear and quadratic functions of the running variable $f(x_i)$ for the estimation. D_i shows the treatment status which is explained above. β_2 is our parameter of interest and shows the average treatment effect of the education policy. Finally, standard errors, ε_i , are clustered according to the year of birth to take into account potential heteroscedasticity.

In a regression discontinuity design, the choice of bandwidth is crucial for the validity and precision of the estimated treatment effect. The bandwidth determines the range of values around the cutoff point that are included in the treatment and control groups. It should be wide enough to capture the true effect of the policy change but narrow enough to avoid contamination from individuals who are too dissimilar. One approach to selecting the bandwidth is to use a data-driven method proposed by Imbens and Kalyanaraman (2012). Alternatively, researchers can use a priori knowledge or theoretical considerations to determine the appropriate bandwidth. In this study, following the literature (Kırdar et al., 2016; Kırdar et al., 2018), we include 4-year and 6-year bandwidths around the cutoff. Using multiple bandwidths helps examine the robustness of the estimated treatment effect.

5. Estimated Findings

In this section, we document the estimated results depicting the effect of the compulsory education policy on the educational attainment of women, the educational gap between women (wife) and men (husband), the perceptions about gender roles, attitudes towards physical

violence, controlling actions, and employment outcomes of women. In all regressions, our sample consists of ever-married women born between 1981 and 1992 (1983 and 1990 for narrower bandwidth) from 2008, 2013, and 2018 TDHS datasets. In order to check the robustness of our results we carry out the analysis for two different time intervals, 6-year and 4-year intervals on both sides of the cutoff. Additionally, we adopt a parametric estimation approach and use linear time trends, which can be validated from Figure 4 which is the graphical illustration of the education variables and shows the jumps at the cutoff.

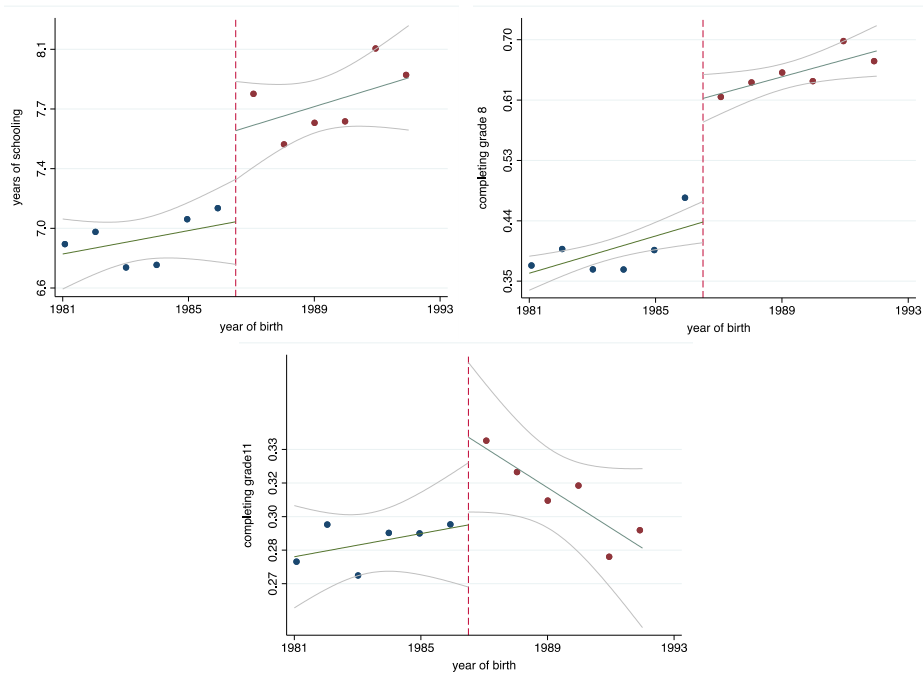


Figure 4. Educational outcomes of married women

In Table 6, we can see the impact of policy on the educational outcomes of ever-married women. The increase in years of schooling, and the probability of completing grade 8 and grade 11 are statistically significant for both bandwidths. In particular, the policy increased, on average, the schooling among women by 0.6 years, and the completion rate of grades 8 and 11 by 15-17 and 3-4 percentage points, respectively. When we compare these numbers with mean values, we see that women's completion rate of grade 8 increased by approximately 30% while the increase is 10% for completing grade 11 within the policy. Hence, it is obvious that the education reform has provided an opportunity for women to attain basic education and increased their enrollment rates. The results also reveal that interspousal education differences have decreased thanks to the

policy.⁵ More specifically, the difference between the husband's and wife's schooling decreased by 0.4 years. Moreover, the households where the wife is more educated than the husband increased by 7-8 percentage points. So, we can deduce that the reform effectively decreases the educational gap between women and men and contributes to women's empowerment in this regard.

Table 6. The impact of policy on educational outcomes of ever-married women

	6-Year Intervals	Obs.	4-Year Intervals	Obs.
Years of schooling	0.573** (0.186)	6979	0.555*** (0.133)	4744
Completing grade 8	0.179*** (0.030)	6979	0.151*** (0.023)	4744
Completing grade 11	0.039*** (0.004)	6979	0.031*** (0.005)	4744
Difference btw husband & wife schooling	-0.427** (0.144)	6823	-0.461** (0.170)	4644
Wife is more educated	0.085*** (0.026)	6824	0.073** (0.028)	4645

Note: Data comes from 2008, 2013, and 2018 TDHS married women sample. The year of birth is used as assignment variable. 6-year and 4-year intervals include 1981-1992 and 1983-1990 birth cohorts, respectively. Standard errors are clustered in year of birth level.

Table 7 displays the impact of the policy on the perception of women regarding gender roles. Figure A2 in the appendix shows the graphical representation of these variables. Most of the findings are statistically insignificant except for the perception of women politicians. The policy led to a 3 to 6 percentage points increase in the share of women who think that women should be more involved in politics. Additionally, the share of women who perceive that education is better for a son than a daughter decreased by 2 percentage points in the narrower bandwidth. Finally, the proportion of women who state that husbands should help with domestic chores decreased with the policy but the result is not robust when we look at a narrower bandwidth. Overall, these findings do not provide strong evidence for women's empowerment in terms of their bargaining power and awareness of gender inequality, yet we see that the policy leads women to feel the need for higher political participation and engagement.

Table 7. The impact of policy on perceptions of gender roles

	6-Year Intervals	Obs.	4-Year Intervals	Obs.
Important decisions should be made by men	0.005 (0.014)	6948	0.004 (0.014)	4720
Husband should help with household chores	-0.050** (0.020)	6939	-0.017 (0.032)	4710
Educating a son is better than a daughter	-0.015 (0.010)	6956	-0.019* (0.009)	4727
Women with children should not work	0.013 (0.017)	5007	-0.018 (0.010)	3383
Women should be more involved in politics	0.031** (0.014)	6242	0.058*** (0.013)	4255
Women should be a virgin on the wedding night	0.008 (0.035)	6708	0.006 (0.037)	4556

Note: Data comes from 2008, 2013, and 2018 TDHS married women sample. But, the data for the variable asking whether women with children work comes from 2013 and 2018 TDHS married women sample. The year of birth is used as assignment variable. 6-year and 4-year intervals include 1981-1992 and 1983-1990 birth cohorts, respectively. Standard errors are clustered in year of birth level.

5 Figure A1 in the appendix shows the graphical representation of the variables for interspousal educational differences.

In Table 8, estimated findings for women's attitudes towards physical violence are stated. Figure A3 in the appendix shows the graphical representation of these variables. The results are generally insignificant so there was little change in women's opinion on physical violence despite the education policy. The only decrease in this issue comes from the statement that beating can be justified if women refuse to have intercourse. The proportion of women who agree with the statement decreased by 1 percentage point thanks to the policy. Although this is an indication of empowerment, the effect of policy on the physical violence attitudes is quite limited.

	6-Year Intervals	Obs.	4-Year Intervals	Obs.
Beating is justified if the wife ...				
neglects the children	0.013 (0.017)	6943	0.000 (0.019)	4716
argues with husband	-0.014 (0.020)	6919	-0.032 (0.018)	4703
refuses to have intercourse	-0.011*** (0.003)	6932	-0.012** (0.004)	4707
burns the food	-0.005 (0.005)	6963	-0.008 (0.005)	4730
Agrees with at least one reason	-0.006 (0.020)	6980	-0.028 (0.019)	4745

Note: Data comes from 2008, 2013, and 2018 TDHS married women sample. The year of birth is used as assignment variable. 6-year and 4-year intervals include 1981-1992 and 1983-1990 birth cohorts, respectively. Standard errors are clustered in year of birth level.

Table 9 reveals the effect of policy on the husband's controlling actions and women's economic independence. Figure A4 in the appendix shows the graphical representation of these variables. We do not find any significant impact of the education on employment of women. This shows that although education is one of the most important channels to integrate women into the labor market, it is not valid in our ever-married women sample, mainly because the obstacles are bigger for married women to participate in the labor market. However, we find a positive impact on the proportion of women who have money to spend, which is an indicator of economic independence and higher bargaining power of women. The percentage of women having money to spend increased by 3 to 5 percentage points with the policy. For controlling actions, in line with the literature (Erten & Keskin 2018) the findings suggest that as education increases, husbands tend to impose greater restrictions on women. However, the results are not robust in both bandwidths, so we argue that there is suggestive evidence in this regard. We solely find a robust and significant impact on the experience of women who reported that their husbands insist on knowing where they are. More specifically, the proportion of women stating this increased by 2 percentage points at the cutoff.

Table 9. The impact of policy on controlling actions and ever-work

	6-Year Intervals	Obs.	4-Year Intervals	Obs.
Husband ...				
limits contact with her family	-0.002 (0.017)	6971	0.024* (0.011)	4738
insists on knowing where she is	0.017** (0.008)	6966	0.017*** (0.004)	4734
prevents her from seeing friends	0.004 (0.024)	6971	0.010 (0.025)	4738
accuses her of being unfaithful	0.007 (0.005)	6968	0.011** (0.005)	4736
distrusts her with money	-0.013* (0.006)	6968	-0.002 (0.004)	4736
Facing at least one controlling action	0.013 (0.011)	6980	0.024* (0.010)	4745
Woman has her own money to spend	0.032** (0.011)	5094	0.045*** (0.007)	3440
Woman is ever-worked	0.018 (0.016)	6980	0.016 (0.014)	4745

Note: Data comes from 2008, 2013, and 2018 TDHS married women sample. But, the data for the variable asking whether women have money spending by herself comes from 2013 and 2018 TDHS married women sample. The year of birth is used as assignment variable. 6-year and 4-year intervals include 1981-1992 and 1983-1990 birth cohorts, respectively. Standard errors are clustered in year of birth level.

6. Conclusion and Discussion

In this study, we examined the causal relationship between the 1997 compulsory schooling reform and women's empowerment in Türkiye. To evaluate the results of the policy, we compared the outcomes of treated and untreated women by employing a regression discontinuity design and we used 3 waves of nationally representative Turkish Demographic and Health Survey data from the years 2008, 2013, and 2018.

The 1997 education reform plays a fundamental role in women's empowerment since it equips them with knowledge, skills, and confidence to participate fully in society. The estimated findings reveal that the reform increased women's years of schooling, and their probability to complete secondary school (grade 8) and high school (grade 11). Moreover, the educational difference between spouses decreased in the family with the reform. Because the policy is quite effective in improving women's educational outcomes and lowering the spousal educational gap, it is expected to improve women's status and bargaining power in the family as well.

When we check the empowerment-related outcomes of women within the family, results suggest that the extent of women's empowerment is quite limited, suggesting that higher educational attainment and improved educational status compared to husbands are not reflected in daily lives and the perceptions of women. We only see a small increase in the share of women

who agree with the statement that there should be more women politicians (the estimate is 5% over the mean), and there is a considerably bigger increase in the share of women who disagree with the statement that beating can be justified if a wife refuses to have intercourse with the husband (estimate is 40% over the mean). We also see suggestive evidence that the higher educational attainment of women might lead to conflict and more controlling actions faced by women. This result is in parallel with the findings of Erten and Keskin (2018) in the Turkish setting. In our case the effect is minor, the share of women who report that their husbands insist on knowing where they are increases by 1.7 percentage points which is 4 percent over the mean of the outcome. Then, we do not show any effect of the policy on the probability of ever working, we see the share of women who report that they have money to spend increases by 4 percentage points which is 24 percent over the mean of the outcome. This situation is an indication of the higher bargaining power of women in the household, yet the level of education and bargaining power are not enough to participate in the labor market for women. All in all, stronger educational outcomes for women coming with the policy have quite minor empowering effects.

In light of these findings, we can argue that there are considerable challenges that hinder women's empowerment in Türkiye. The traditional gender roles and societal norms deeply rooted in Turkish culture continue to limit women's opportunities and reinforce gender inequalities. Women face barriers in accessing decision-making positions, experiencing violence, and achieving equal pay and work opportunities. The low female labor force participation rate and the persistent gender pay gap clearly indicate the existing disparities.

To address these challenges and achieve true gender equality, a comprehensive approach is needed. It is crucial to continue promoting policies and initiatives that focus on increasing women's education, improving their access to economic opportunities, and combating violence. Additionally, efforts should be made to challenge and transform the traditional gender norms that perpetuate inequality in both the public and private spheres. This requires not only legal and institutional reforms but also changes in societal attitudes and behaviors toward gender roles and women's rights.

In conclusion, while Türkiye has made significant strides toward gender equality and women's empowerment, there is still work to be done. Continued efforts from policymakers, civil society organizations, and individuals are crucial in challenging and transforming the existing norms and creating an inclusive and equitable society where women can fully participate and thrive. Achieving gender equality is not only a matter of justice and human rights but also a prerequisite for sustainable development and a prosperous future for Türkiye.

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Appendix

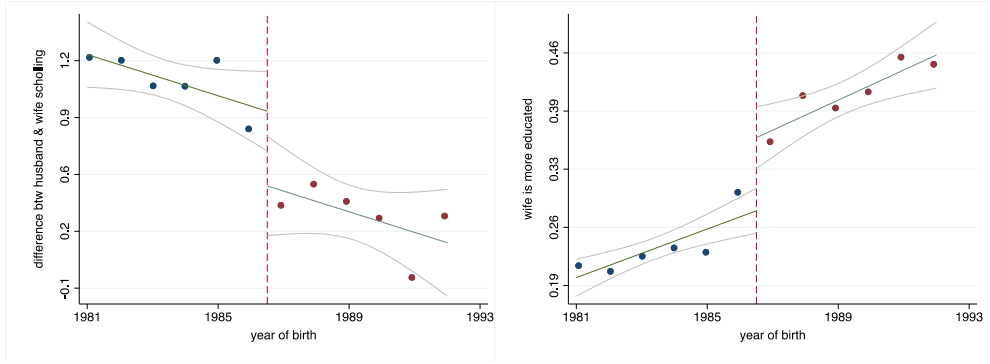


Figure A1. Intersperse educational differences

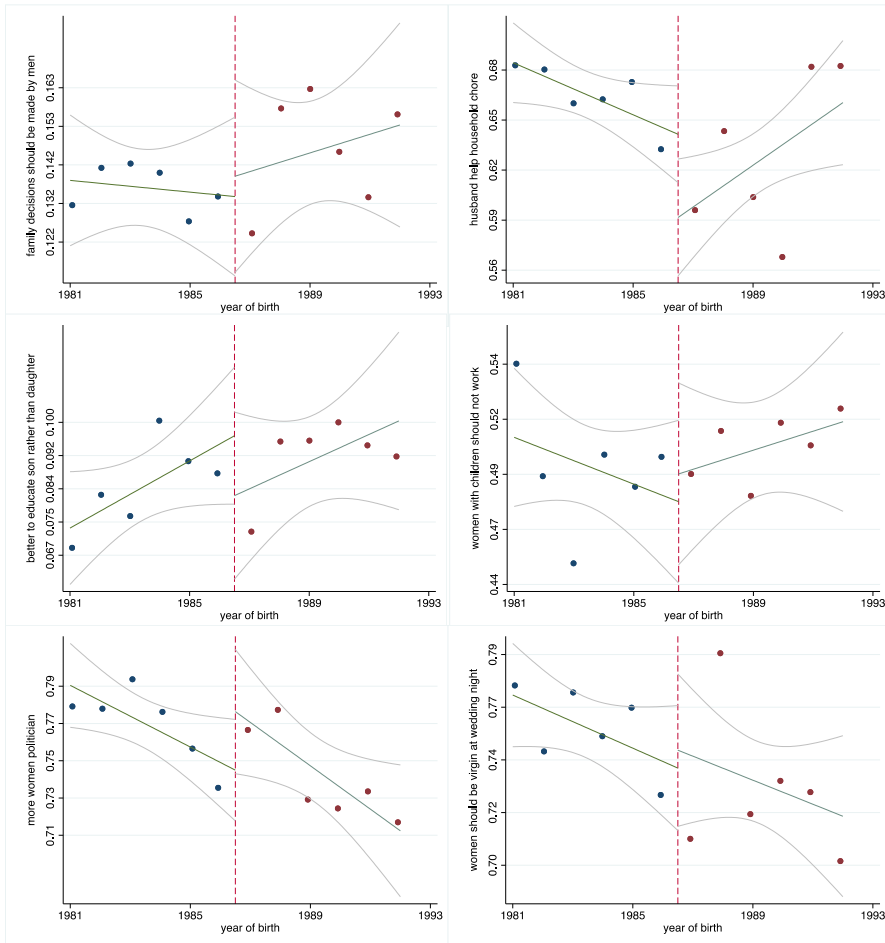


Figure A2. Perceptions about gender roles

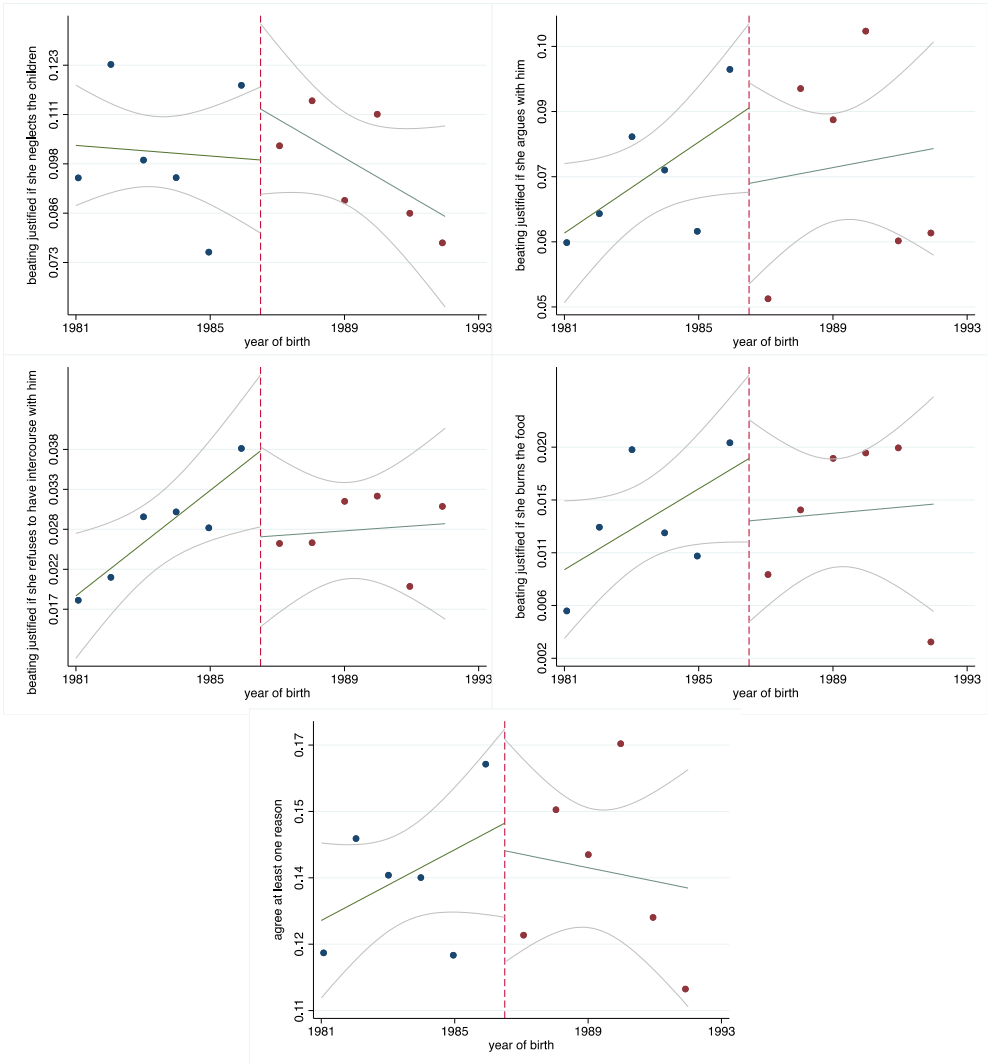


Figure A3. Attitudes towards physical violence

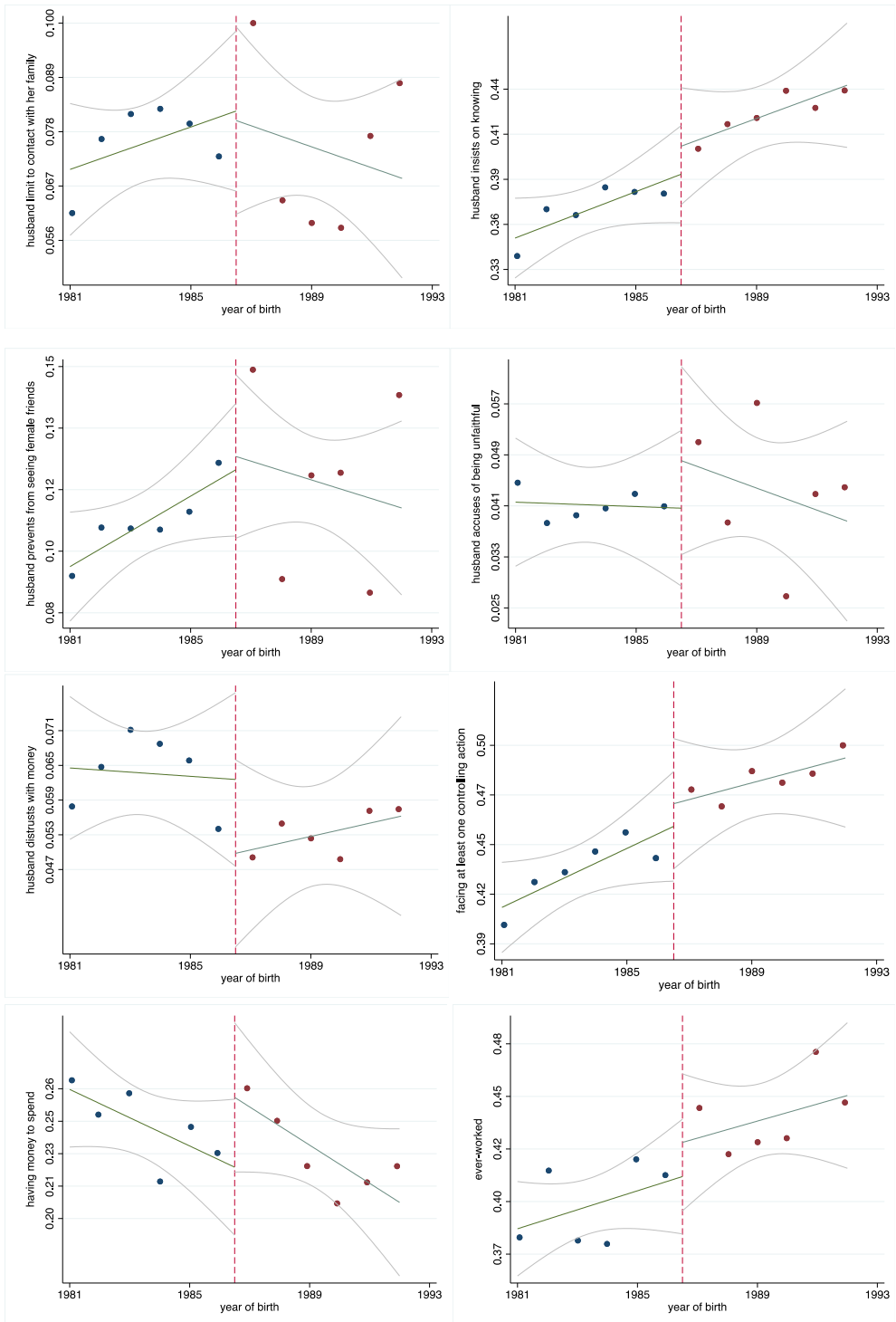


Figure A4. Controlling actions and ever-worked status