Headscarves and Female Employment

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This paper defeats conventional wisdom by showing that Islamic expression is compatible with female empowerment. In 2013, the Turkish parliament outvoted the headscarf ban, allowing females wearing headscarves to work in all state institutions. Using a unique dataset and exploiting quasi-random variation in contested local elections, I investigate the heterogeneous impact of a pro-Islamist local government, in the presence and absence of a headscarf ban, on the female composition of municipal employees. This paper has two main contributions. First, pro-Islamist political rule has a positive impact on female share only when institutions allow religious females to work. Second, the effect of Islamist party takeover on female share is negative when religious women are denied jobs. Islamist political rule empowers women only when the institutions are compatible with pro-Islamist preferences.

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1 Introduction

Religious conservatism, especially in Islam, is associated with patriarchal values. An often-voiced concern is therefore whether pro-Islamist institutions undermine women's emancipation.[1] Indeed, findings from the World Values Survey demonstrate that religious people have less progressive attitudes towards women's rights, and are less favorable with respect to working women. The relationship is stronger for Muslims (Guiso et al. [2003]).

In recent years, many Western democracies have endorsed bans that limit the use of the Islamic veil, on the grounds that Islam is incompatible with values of their societies.[2] The Turkish government has taken the opposite approach, and has gradually lifted a longstanding restriction on headscarves. Turkey's Islamic-rooted Justice and Development Party (AKP, hereafter) advocates that this has bolstered democratic standards by promoting equality among women. Until 2013, women with veils remained proscribed in state institutions. Wearing visible symbols at work was prohibited for civil servants, as they had to be impartial and neutral by law. This paper examines the interaction between a pro-Islamist policy (repeal of the headscarf ban), and a pro-Islamist institution (pro-Islamist local governance). It then considers the implications of this interaction for female share of employees in local governments, where the mayor has direct influence.

Do pro-Islamist policies hinder female employment? Given the legislations described above, this so far unaddressed research question is timely. I test this hypothesis in a setting where a democratically elected pro-Islamist political party has implemented a pro-Islamist policy, using a unique administrative dataset. This paper provides striking evidence showing that under pro-Islamist party rule, pro-Islamist policies can improve female employment outcomes by alleviating labor market entry barriers for women wearing headscarves, who otherwise are prevented from joining the public workforce.

I implement a difference-in-discontinuities design in the spirit of Grembi et al. [2016], to identify the differential effect of AKP victory in local elections

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[1]Fish [2002] shows that the status of women is significantly worse in societies with religious traditions. Donno and Russett [2004] find that Islamist governments tend to support both autocratic government and repression of women's rights.

[2]For a timeline of the recent legislations in the West concerning the Muslim veil, see: https://www.theguardian.com/world/2017/mar/14/headscarves-and-muslim-veil-ban-debate-timeline

when headscarves are allowed or not. This method rests on the intuition of combining difference-in-differences and regression discontinuity. I exploit two sources of variation: exogenous timing of the nationwide headscarf legislation, and quasi-random variation in mayor type in contested local elections. The mayor's type is Islamist or secular, defined by the mayor's political party affiliation.[3] I compare the female share of employees within municipal governments in municipalities with marginally elected Islamist and secular mayors, before and after the introduction of headscarves. I condition on having a secular incumbent to isolate the effect of religious party takeover. Municipalities where the secular mayor won by a small margin are arguably appropriate counterfactuals for municipalities where the Islamist mayor won marginally.

This paper establishes two main findings. First, as a result of lifting the headscarf ban, the female share of personnel increases in municipalities where the pro-Islamist mayor marginally won the local elections. Second, when women are deterred from covering their heads in state offices, the pro-Islamist mayor reduces the female share of municipal employees by about 85%. Hence, a pro-Islamist mayor can positively influence female employment outcomes only under pro-Islamist institutions.

In the absence of data on employment flows, I observe the equilibrium result of supply and demand. I draw on the seminal theories of Becker et al. [1971] and Akerlof and Kranton [2000] to conjecture the potential mechanism. When religious women cannot work, Becker et al. [1971]'s taste-based discrimination model implies that Islamist mayors would substitute the departing female workers by males. On the other hand, when religious identity is observable, consistent with Akerlof and Kranton [2000], secular men and women would be excluded by pro-Islamist mayors. Religious individuals can signal their piety through visible symbols: such as the veil for women, and the Islamic beard for men.[4] Lifting of the headscarf ban reveals the religious identity of female employees. Given that secular and religious men cannot be identified by their outer appearance, in contrast to women; secular women would be the group suffering from this negative externality when religious women have access to public sector jobs and the poli-

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[3]I consider a mayor to be pro-Islamist if he is from the pro-Islamist party AKP, and secular if he is from any other political party.

[4]The Islamic beard is forbidden in the dress-code of public sector employees.

cymaker has pro-Islamist preferences.

The paper is outlined as follows: Section 2 surveys the literature, section 3 outlines the institutional framework, section 4 describes the empirical strategy, section 5 documents the findings, and section 6 concludes.

2   Related Literature

Economics of religion is a relatively new field in Economics. Iyer [2016] provides an overview of the emerging literature on economics of religion. Kuran [2017] focuses on the causal connections between Islam and economic performance, and aspires to pin down the historical and contemporary institutional mechanisms that explain the economic trajectory of the Muslim world. McCleary and Barro [2006] evaluate how religion and economic performance interact, considering religion both as a dependent and an independent variable. The current study relates to two strands of this broad literature: effects of Islamist political rule, and economics of identity.

Several recent studies have shown that society's and women's welfare seem to have improved in several dimensions under Islamist political rule. Blaydes [2014] finds that women living in a neighborhood in Cairo ruled by radical Islamists had better reproductive health outcomes than women in a comparable neighborhood dominated by non-Islamist local leaders. Bhalotra et al. [2014] show that Muslim political representation improves health and education outcomes in India in the district from which the legislator is elected. Henderson and Kuncoro [2011] detect lower corruption in districts where Muslim parties had higher representation in the assemblies in Indonesia.

Effects of Islamist political rule are dual in nature. On the one hand, Islamist governments can expand opportunities for females by removing some participation constraints (e.g. alleviating the ban on headscarves in schools and workplaces). On the other hand, the propagation of patriarchal values reinforces traditional gender roles in the society. Arat [2010] refers to this trade-off between expansion of religious freedoms and threats to gender equality as "Turkey's democratic paradox".

Meyersson [2014] demonstrates this phenomenon, by showing that religiously

conservative political leaders can have socially progressive effects. In municipalities where the pro-Islamist party marginally won the 1994 local elections, females were more likely to complete high school, and marry at a later age. These results are explained by the success of the pro-Islamist party on effectively removing barriers to education for the poor and pious: by increasing the number of school buildings (economic barriers), and alleviating the enforcement of headscarf ban (belief constraints).[5] Estimated effects are more pronounced in poorer and religiously more conservative communities.

Although Meyersson [2014] constitutes an important benchmark for this study, it is important to outline the differences between his paper and mine. First and foremost, my paper focuses on the impact of the repeal of the headscarf ban, whereas Meyersson [2014] only considers the effects of Islamist political rule at the local level. In addition, my study estimates a direct effect of the local politician. Municipal personnel are appointed by local authorities, which allows me to isolate the effect of the local politician from any spillover effects. The outcome of interest, gender composition of employees within the municipal government, is one which the mayor has the possibility to influence directly. My study encompasses a more recent time frame (15 years later), when Turkish politics have been relatively stable. The Islamist party which is the subject of my paper, the AKP, has been continuously in power (both at the local and national level) since 2002. The Islamist party considered in Meyersson [2014], Welfare Party (Refah Partisi), was shut down by the constitutional court in 1998; and the study considers a period with transitory and volatile political dynamics. Moreover, Meyersson [2014] does not consider how women fare in the labor market (under Islamist political rule). Nevertheless, the results resonate with Meyersson [2014]: pro-Islamist institutions can empower women under certain circumstances.

Despite the low female labor force participation rate in Muslim-majority countries, the causal link between pro-Islamist institutions and female employment remains largely unexplored by the literature. To my knowledge, this paper provides the first causal evidence on the effects of pro-Islamist policies and pro-Islamist political rule on female employment outcomes.

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[5]The Turkish mixed-gender education curriculum did not allow for students to wear religious symbols at school, including the headscarf for women. This ban was recently lifted in high school in 2014, raising a lot of controversy.

A relevant paper by Hayo and Caris [2013] investigates why female labor market participation is low in the MENA region countries, and relates to the role of identity. In an Akerlof and Kranton [2000] style framework, this paper claims that for religious individuals, Islamist identity based on traditional family values propagated by Islamist social environments clashes with the idea of being employed. Without making causal statements, Hayo and Caris [2013] tests the role of Islam and cultural tradition on females' labor market participation decisions, showing that traditional values deter women from participating in the labor market.

On the effect of veiling bans, the literature is scarce. Carvalho [2012] provides a theoretical framework of veiling, and offers an alternative view explained by social norms. Most importantly, it considers implications of veiling bans for transmission of religious values. The model predicts that, counterintuitively, compulsory veiling laws can lead to a decline in religiosity, while bans on veiling can inhibit social integration and increase religiosity. This paper suggests that attempts to regulate veiling can turn out to be counterproductive, regardless of whether they are motivated by secular or religious objectives.

Veiling is a means to signal piety, which is otherwise an unobservable trait. Patel [2012] considers the informational role of Islamic dress in the framework of a signaling game and finds that revealing religious identity can be rewarding in certain environments, such as the marriage market. Patel [2012] considers the enforcement of religious clothing by Islamist governments. Surprisingly, freedom of dress benefits pious women as it enables them to credibly signal their types using more conservative clothing styles. When Islamist governments enforce conservative clothing, this hinders religious Muslim women from revealing their types.

Finally, the seminal work of Akerlof and Kranton [2000] on economics of identity provides the theoretical foundation of my results. I propose religious identity as an explanation for the differential effects of Islamist political rule in an environment with and without the headscarf ban.

3 Political and Institutional Framework

3.1 Religion and Politics in Turkey

Religion and politics have long been intertwined in Turkish politics. Since transitioning to multi-party politics in 1946, Turkey's political history has been dominated by the conflict between the secular military and religiously rooted parties. Turkey has experienced three military coups d'état and several Islamist political parties have been closed by the military on the grounds that they undermined the secularist principles of the constitution.

The pro-Islamist Justice and Development Party (officially abbreviated AKP) has won pluralities in all legislative elections since 2002. AKP is the biggest pro-Islamist party currently in the political arena.[6] In 2008, the Public Prosecutor took AKP to court seeking to close down due to its anti-secular activities, but the Constitutional Court decided in the party's favour.

In the recent years, the AKP has been pushing for an increasingly religious agenda. Politicians from the AKP have been emphasizing the cohesion and integrity of the family over individual empowerment of women, and reinforcing traditional gender roles in media appearances. Some examples include: "Mothers' only career should be motherhood", "You cannot make women and men equal; this is against nature".[7]. This has raised some eyebrows in the international media as well (see New York Times [2012] and The Atlantic [2011].)

Headscarf rights have always been a salient and controversial issue in Turkish politics. The 1982 Turkish constitution, legislated with the principle of official secularism following the military coup, regulates clothing standards of civil servants, requiring that female civil servants' heads must be uncovered. An interpretation of this law in 1997 extended the ban on headscarves to all universities in Turkey. In recent years, Turkey's Islamist-rooted government led by AKP, has gradually abandoned the official ban on Muslim headscarves. In 2010, the ban was annulled in university campuses, 2013 for state institutions, 2014 for high schools, 2016 for policewomen, and in 2017 for female army officers.[8]

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[6]There are two other small pro-Islamist parties: the Welfare Party and the Great Union Party. They are not included in the main analysis, as will be explained later in the text.

[7]Hurriyet Daily News [2015], Newsweek [2014]

[8]Military was the final institution that the ban remained.

3.2   Local Governance

This subsection provides a brief overview of the structure and hiring roles of local government in Turkey, to provide better insight for the context. Municipalities are the main local authorities in Turkey, and provide public services (health, social assistance, education, and transportation) within their borders.[9] Municipalities function under direct influence of a mayor, elected by plurality in local elections for a five-year term. The influence of mayors has increased gradually as pressures from the central government eased in the post-1980 period.[10]

The law of municipalities explicitly states that mayors oversee municipal recruitment (creation, termination and change of positions). Municipal personnel comprise 5% of total public personnel, and is employed in secretariat, fiscal services, technical services, municipal police and other units that are established with respect to specific demands of the municipalities (State Personnel Department [2015]).[11] Public services in municipalities are carried out by four types of staff: civil servants, permanent workers, contracted workers and temporary workers. The focus of this study is civil servants, who constitute the largest group of municipal personnel, and 4% of total public labor force. The analysis is restricted to civil servants for two reasons. First, regular and reliable social security data was available only for this group. Second, civil servants do comparative administrative tasks, ruling out the confounding effect of potential gender segregation due to the nature of tasks.

Civil servants are higher-status staff and are assigned to administrative positions. All civil servant positions are tenured. Civil servants need a high school or university diploma (depending on the job opening) to take the centralized Public Personnel Selection Exam, or a special exam for specific higher-status positions. Municipal personnel appointed in civil servant positions (subject to Social Secu-

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[9]Municipal revenues constitute a non-negligible portion of the national budget: The revenues of local governments constitute 3.9 % of GDP, and expenses of local governments constitute 4.1% of GDP (2013 figures from Ministry of Development [2015]).

[10]Bayraktar [2007] provides a historical perspective on the evolution of Turkish municipal framework. Bayraktar [2007] and Bayraktar and Massicard [2012] discuss the personal empowerment of the mayors.

[11]Expert and technical staff such as lawyers, architects, engineers, computer analysts, physicians, nurses, chemists and technicians may be employed on a contractual basis in the municipality based on the needs.

rity Law 657) earn the highest salary among municipal employees. The salaries of civil servants working in municipal governments varied between 2,500-3,000 TRY in 2015, equivalent to €874-1,048, which is at least twice the minimum wage.[12]

Municipalities have become an important ground for politicians to implement their preferred policies.[13] To prevent partisan and patronage policies in municipal recruitment, the principle of standards for permanent staff was established in 2007 (Resmi Gazete [2007]). Accordingly, the Ministry of the Interior determines the number, titles and qualifications of the staff that local authorities can hire.[14] Within certain limits determined by the center, municipalities can freely appoint and reappoint staff.[15]

Hiring and firing practices are similar and quite inflexible for permanent staff. Municipalities announce vacancies to hire employees with respect to their needs, indicating the number and qualifications for the available posts to the Ministry of Interior for hiring civil servants. Municipal authorities then choose from the pool of applicants (sent by these institutions) after a written or oral exam. A change in the Municipal Decree in 2007 abolished central placement of municipal personnel after the public personnel exam. This change undermined the objectivity of the central civil servant appointment system and created room for preferential recruitment.

4 Difference-in-Discontinuities Design

In order to address the research question, I exploit the timing of the local elections and of the repeal of the headscarf ban. The timeline below demonstrates the two treatments and the two periods in my analysis. The first treatment is the mayor treatment, indicating whether the AKP mayor won or lost the local elec-

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[12]Source: http://www.isilanlarim.net/belediyede-calisan-personel-memur-maaslari-ne-kadar/. The minimum wage was 1,201 TRY in 2015, amounting to €420. Source: http://www.muhasebetr.com/2015-asgari-ucret/

[13]See Bayraktar and Massicard [2012]. Newspapers frequently report that civil service positions are steadily being filled with AKP partisans.

[14]The main criterion in determining the permanent staff is the population of the locality. In addition, type of the municipality, its touristic and industrial values are also considered.

[15]There are two strict conditions: 1. the permanent staff cannot exceed the numbers determined by the central government (but it can be less). 2. spending on personnel cannot exceed 30 % of the municipal budget.

tions in 2009 and 2014, conditioning on a secular incumbent. The second treatment is the introduction of headscarves to all state institutions at the end of the year 2013. I refer to the period before the introduction of headscarves as $t = 09$, marked by the mayor elected in 2009 local elections; and the period after the introduction of headscarves as $t = 14$, marked by the mayor elected in 2014 local elections. This timeline allows me to compare two Regression Discontinuities (RD) in a Difference-in-Discontinuities (diff-in-disc) design introduced by Grembi et al. [2016]. One crucial difference with respect to Grembi et al. [2016] is that the headscarf treatment is independent of the running variable, as the law applies to all municipalities at the national level.

Headscarves

AKP mayor   AKP mayor

2009   2014

t=09   t=14
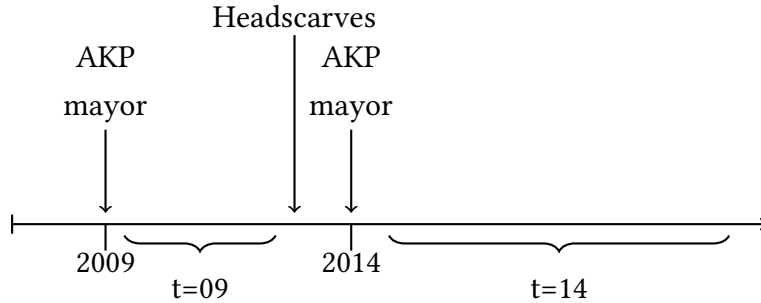
4.1 Empirical Setup

M_{it} denotes the mayor treatment for municipality i at time $t \in \{09, 14\}$, conditional on having a secular incumbent. M_{it} is equal to one if AKP mayor takes over, and equal to zero otherwise. x_{it} denotes the running variable, defined as the AKP win margin and constructed as the vote share difference between AKP and the largest secular party (vote share of the secular party with the most votes among secular parties). x_{it} ranges between -1 and 1, and determines sharp assignment to the mayor treatment, with the cutoff being equal to 0. The assignment to AKP mayor follows a deterministic rule: $M_{it} = \mathbb{1}(x_{it} \geq 0)$, where $\mathbb{1}$ is the indicator function.

$$x_{it} = \begin{cases} x_{i,09}, & t = 09 \\ x_{i,14}, & t = 14 \end{cases}$$

H_{it} denotes the introduction of headscarves: whether headscarves were allowed or banned at the time of election. The headscarf treatment is equal to 0 in $t = 09$, when headscarves are banned; and equal to 1 in $t = 14$, when the ban has been lifted.

4.2 Identification

Let $Y = (Y_t^1, Y_t^0)$ denote potential outcomes, and $Y_t = Y_t^0 + \tau_t M_{it}$ be the observed outcome. Following the notation in Hahn et al. [2001], let Y_t^+ and Y_t^- denote the observed mean outcomes marginally above and below the 0 cutoff of AKP win margin. $\bar{x}$ denotes the discontinuity point, and is equal to 0.

$$Y_t^+ \equiv \lim_{x_t \to \bar{x}^+} E\{Y_{it} | x_{it} = \bar{x}\} = E\{Y_t | \bar{x}^+\}$$

$$Y_t^- \equiv \lim_{x_t \to \bar{x}^-} E\{Y_{it} | x_{it} = \bar{x}\} = E\{Y_t | \bar{x}^-\}$$

Under the standard continuity and local randomization assumptions, the sharp RD estimator identifies the causal effect of AKP mayor at time t, and can be expressed as:

$$\tau_{09} = Y_{09}^+ - Y_{09}^-$$

$$\tau_{14} = Y_{14}^+ - Y_{14}^-$$

Finally, the diff-in-disc estimator is defined as the difference between the two RD estimators:

$$\delta \equiv \tau_{14} - \tau_{09} \tag{1}$$

Identification in this setting requires additional assumptions to the standard continuity assumptions of RDD, which are listed below and discussed extensively in the following sections.

1. *Continuity:* All potential outcomes are continuous in x at 0.

$$E\{Y_t^0 | \bar{x}^+\} = E\{Y_t^0 | \bar{x}^-\} \qquad \forall t \in \{09, 14\}$$

$$E\{Y_t^1 | \bar{x}^+\} = E\{Y_t^1 | \bar{x}^-\} \qquad \forall t \in \{09, 14\}$$

2. *Local Parallel Trends:* The effect of AKP mayor at $x = 0$ is constant over time in the case of no change in headscarf law. This assumption requires observations just below and above the 0 threshold to be on a local parallel trend, in the absence of policy change in H. The parallel trend assumption of difference-in-differences (DID, in what follows) must be met only in a neighborhood of the win margin threshold. In the absence of a change in headscarf law, this implies:

$$\tau_{14} = Y_{14}^1 - Y_{14}^0 = Y_{09}^1 - Y_{09}^0 = \tau_{09}$$

3. *Homogeneity:* Probability of receiving the headscarf treatment does not depend on mayor type.

Under assumptions 1 and 2, δ is the average treatment effect (ATE) of how relaxing the headscarf ban changes the effect of AKP mayor on female share of employees in municipalities.

5   Islamist Political Rule and Female Employment

5.1   Data Description

I combine data from several sources. Data for 2009 and 2014 local elections come from the Turkish Statistical Institute (TurkSTAT).[16] Electoral returns data include vote counts for all parties, the number of actual and registered voters, and total vote counts for each municipality.[17] In the analysis that follows, pro-Islamist mayor is defined as a mayor from the Islamic-rooted party AKP. Two other parties can be classified as pro-Islamist: the Welfare Party (SP), and the Great Union Party (BBP). In the main analysis, I exclude municipalities where AKP won or lost to one of the other pro-Islamist parties.[18]

The main outcome variable is the share of female employees within the municipal governments. I use unique administrative data based on social security

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[16]I also use data on 2004 Local Elections from the same source to control for incumbency in 2009.

[17]Votes for independent candidates are pooled, and therefore not considered here.

[18]Dropping these observations do not affect the results, as this constitutes a very small number of municipalities.

records on civil servants working in municipal governments, which covers the entire population of municipalities. It is a challenging task to obtain administrative data on Turkish labor market.[19] Data is not available prior to 2008. This restricts my analysis to the 2008-2017 period. This data reports end of the year stocks of personnel in each municipality by gender, from 2008 to 2017.[20] An important limitation of the data is that there is no information on hires, fires, and quits; which makes it impossible to pin down supply and demand effects.[21]

I use additional characteristics of municipalities to test validity of the design. Data on all covariates are at municipality level, and come from different datasets: the Address Based Population Register, and National Education Statistics Database of the Turkish Statistical Institute (TurkSTAT).[22] Demographic characteristics include municipality-level averages of population and distribution of age groups, education statistics (literacy rate and completed schooling) by gender, and the proportion of never-married females between ages 15-30. Data on labor market characteristics are not available.

Table 1 summarizes the characteristics of municipalities for $t = 09$, and Table 2 for $t = 14$, by mayor type.

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[19]Personnel data has been prepared specifically for this study by the Social Security Institution of Turkey. Municipality-level personnel data has been aggregated from individual social security records, by extracting the municipality names from work places.

[20]I use data from June for 2017, since end of the year data was not yet available as this paper was written.

[21]Data on characteristics of employees (including age, education, tenure, wages) was not provided due to confidentiality purposes.

[22]All data have been prepared by the TurkSTAT at municipality level upon request.

Table 1: Descriptive Statistics for $t = 09$

	$t = 09$	
	Secular Mayor	*AKP Mayor*
AKP vote share (2009)	0.315	0.463
	(0.109)	(0.097)
Voter Turnout (2009)	0.875	0.869
	(0.061)	(0.077)
No. Parties (2009)	5.976	5.877
	(1.934)	(2.180)
Literacy Rate (2008)	0.822	0.828
	(0.088)	(0.080)
High School Completion (2008)	0.190	0.179
	(0.068)	(0.062)
High School Completion-females (2008)	0.143	0.131
	(0.069)	(0.059)
Never-married Ratio (2008)	0.647	0.657
	(0.145)	(0.129)
Observations	3,192	3,264

Election data comes from the local elections in 2009, other characteristics belong to the pre-election year 2008. Sample means and standard deviations are reported.

Table 2: Descriptive Statistics for $t = 14$

| | $t = 14$ | |
	Secular Mayor	AKP Mayor
AKP vote share (2014)	0.323	0.497
	(0.113)	(0.095)
Voter Turnout (2014)	0.894	0.897
	(0.053)	(0.057)
No. Parties (2014)	6.565	6.436
	(2.675)	(2.361)
Literacy Rate (2013)	0.936	0.940
	(0.050)	(0.039)
High School Completion (2013)	0.187	0.184
	(0.073)	(0.065)
High School Completion-females (2013)	0.140	0.132
	(0.075)	(0.062)
Never-married Ratio (2013)	0.650	0.667
	(0.150)	(0.117)
Observations	1,828	2,688

Election data comes from the local elections in 2014, other characteristics belong to the pre-election year 2013. Sample means and standard deviations are reported.

Due to the nature of the Regression Discontinuity, which exploits discontinuity in mayor type at the win margin, I only keep municipalities where the AKP was ranked first or second in the local elections of 2009 and 2014. Unfortunately, personnel information is missing for a subsample of the municipalities due to administrative errors.[23] I keep municipalities for which there is employment data for each year between 2008 and 2017. I further restrict the sample to municipalities with a secular incumbent. The true effect of Islamist political rule is revealed in municipalities where the AKP takes over.

This results in a final sample of 1,258 municipalities, and a total number of

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[23]The share of municipalities for which personnel information is missing varies between 10-12% across the years. Winner of the local elections (AKP or secular party) is balanced across municipalities that have missing data, and probability of match is not correlated with the mayor type or the AKP win margin.

12,580 observations from 2008-2017.[24] Among the municipalities, 672 are treated with an AKP mayor, and 586 are in the control group.

To measure female employment, the outcome of interest, I compute the female share of civil servants in municipalities. I define the outcome for $t = 09$ as the female share of municipal employees in years 2009-2013, and the outcome for $t = 14$ as the female share of municipal employees in years 2015-2017.[25] Table 3 presents summary statistics for the outcome variable, in $t = 09$ and $t = 14$, by mayor type. The next subsection documents the findings.

Table 3: %Females Employed in Municipalities

	Secular Mayor	AKP Mayor
Y_{09}	0.106	0.084
	(0.128)	(0.112)
Y_{14}	0.123	0.10
	(0.135)	(0.115)

The sample is split by period and by mayor type. Mean outcome and standard deviations are reported.

5.2 Main Results

Restricting the sample to municipalities with contested elections, I estimate the following model for each observed outcome of municipality i at time t.

$$Y_{it} = \alpha_0 + \alpha_1 x_{it} + \theta_0 M_{it} + \theta_1 M_{it} x_{it} + H_{it}[\gamma_0 + \gamma_1 x_{it} + \underbrace{\beta_0}_{\delta} M_{it} + \beta_1 M_{it} x_{it}] + \epsilon_{it}$$

$$(2)$$

To better characterize the diff-in-disc estimation, I formulate the equations for the two periods separately.

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[24]Moreover, there is no data across all years for some of the municipalities, due to municipal mergers legislated in 2012. Implications of the municipal mergers for the empirical analysis is discussed in detail in the Appendix.

[25]The rationale for excluding the year 2014 is that I consider this to be the adjustment year. Since the type of municipal personnel considered need to have qualified in a state personnel exam, it will require some time for women with headscarves to enter the public labor force, i.e., for the supply of religious women qualified for civil servant posts to adjust. The main result is robust to including the year 2014 in the sample.

$$Y_{i,09} = \alpha_0 + \alpha_1 x_{i,09} + \underbrace{\theta_0}_{\tau_{09}} M_{i,09} + \theta_1 M_{i,09} x_{i,09} + \epsilon_{i,09}$$

$$Y_{i,14} = (\alpha_0 + \gamma_0) + (\alpha_1 + \gamma_1) x_{i,14} + \underbrace{(\theta_0 + \beta_0)}_{\tau_{14}} M_{i,14} + (\theta_1 + \beta_1) M_{i,14} x_{i,14} + \epsilon_{i,14}$$

The diff-in-disc estimator, β_0, is defined as the difference between the two RD estimators, and identifies how relaxing the headscarf ban changes the effect of the AKP mayor on the female share of municipal employees. θ_0 provides the causal effect of the AKP mayor, in the presence of a headscarf ban ($t = 09$) with headscarves, and $\theta_0 + \beta_0$ identifies the causal effect of the AKP mayor when religious females can work.

Table 4 reports the three coefficients described above. I present the baseline local linear regression estimates from equation 2, with two different types of data-driven optimally computed bandwidths using the algorithm of Calonico et al. [2014].[26] Following Grembi et al. [2016], the optimal bandwidth for diff-in-disc estimation is computed as the mean of the two optimal bandwidths in RD estimations for $t = 09$ and $t = 14$. I report results with two optimal bandwidths computed differently (columns 1 and 3), and half of the optimal bandwidths (columns 2 and 4) to test robustness of results to smaller bandwidths.

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[26]Columns 1 and 2 report results with the mean squared error (MSE) optimal bandwidth; and columns 3 and 4 estimate results using the coverage error rate (CER) optimal bandwidth. The computation algorithms are explained in detail in Calonico et al. [2014]

Table 4: Main results

	Dependent variable: % Females employed			
	(1)	(2)	(3)	(4)
δ: AKP$_{14}$-AKP$_{09}$ (Headscarf)	0.138**	0.167**	0.153**	0.105
	(0.059)	(0.077)	(0.065)	(0.089)
τ_{09}: AKP$_{09}$	-0.093**	-0.069	-0.079*	-0.049
	(0.044)	(0.056)	(0.047)	(0.061)
τ_{14}: AKP$_{14}$	0.045	0.098*	0.074	0.056
	(0.040)	(0.054)	(0.046)	(0.065)
Observations	1,023	532	708	380
Bandwidth	0.0528	0.0264	0.0366	0.0183
Mean	0.109	0.120	0.112	0.130

Estimation method is local linear regression with two optimal bandwidths estimated following MSE-optimal and CER-optimal procedures described in Calonico et al. [2014]. Robust standard errors are clustered at the municipality level. *** p<0.01, ** p<0.05, * p<0.1.

The first parameter of interest is the effect of the introduction of headscarves on the difference between the AKP mayor effect in $t = 14$ and $t = 09$ on female share of municipal employees. The difference is positive and significant both statistically and economically. The difference in the AKP mayor effect between the two periods is 14 percentage points. The statistical significance disappears in the last specification, using a slightly smaller bandwidth of 1.9 percent, most likely due to low statistical power.

In $t = 09$, a marginally elected AKP mayor reduces the female share of employees in municipal governments, given by τ_{09}. When religious females are denied employment opportunities due to secular restrictions, an AKP mayor reduces the female share of municipal employees by about 9 percentage points. This corresponds to a relative decrease of 85%, significant both statistically and economically.[27] Columns 2 and 4 show that the pre-treatment RD estimate is not robust to

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[27]Unfortunately, there are no published statistics on typical personnel turnover ratios in municipalities in Turkey for this period. Günay [2011] provides some evidence that similarly high staff turnover ratios are observed following the local elections in 2004.

smaller bandwidths.

In $t = 14$, an AKP mayor boosts the female share of municipal employees. The sign of the coefficient τ_{14} is positive for all specifications but statistical significance is sensitive to bandwidth choice. This table shows that the negative effect of the AKP mayor on the female share of municipal employees observed in $t = 09$, disappears in $t = 14$, when headscarves are allowed for public employees. τ_{14} is the RD coefficient from pooling outcome data for all years in the post-headscarf period. The cross-sectional RD estimates for the year 2017 are reported in Table 13 in the Appendix, and are positive and statistically significant across bandwidth choices. Only the cross-sectional RD estimate for 2017 is statistically significant for $t = 14$ because it takes time for the labor supply of religious women to adjust. When the labor supply of religious women adjusts, men -whose religious identity are not visible to the mayor- are replaced by women, whose religious identity is observable to the mayor. Hence, a pro-Islamist mayor has a positive impact on female employment outcomes when religious women can work. The introduction of headscarves facilitates female employment for AKP.

Figures 1 and 2 present graphically the evidence in the table above, within a bandwidth of 10%. The top panel of Figure 1 shows the effect of AKP mayor on female share of employees in $t = 09$, when headscarves are banned in public offices. The bottom panel of Figure 1 shows the effect of the AKP mayor on the female share of employees in $t = 14$, when headscarves are allowed in state institutions. As evident from the figure, an AKP mayor reduces the female share of employees when religious females are denied jobs due to secular restrictions. Yet, an AKP mayor increases female share of employees when religious women can be employed.
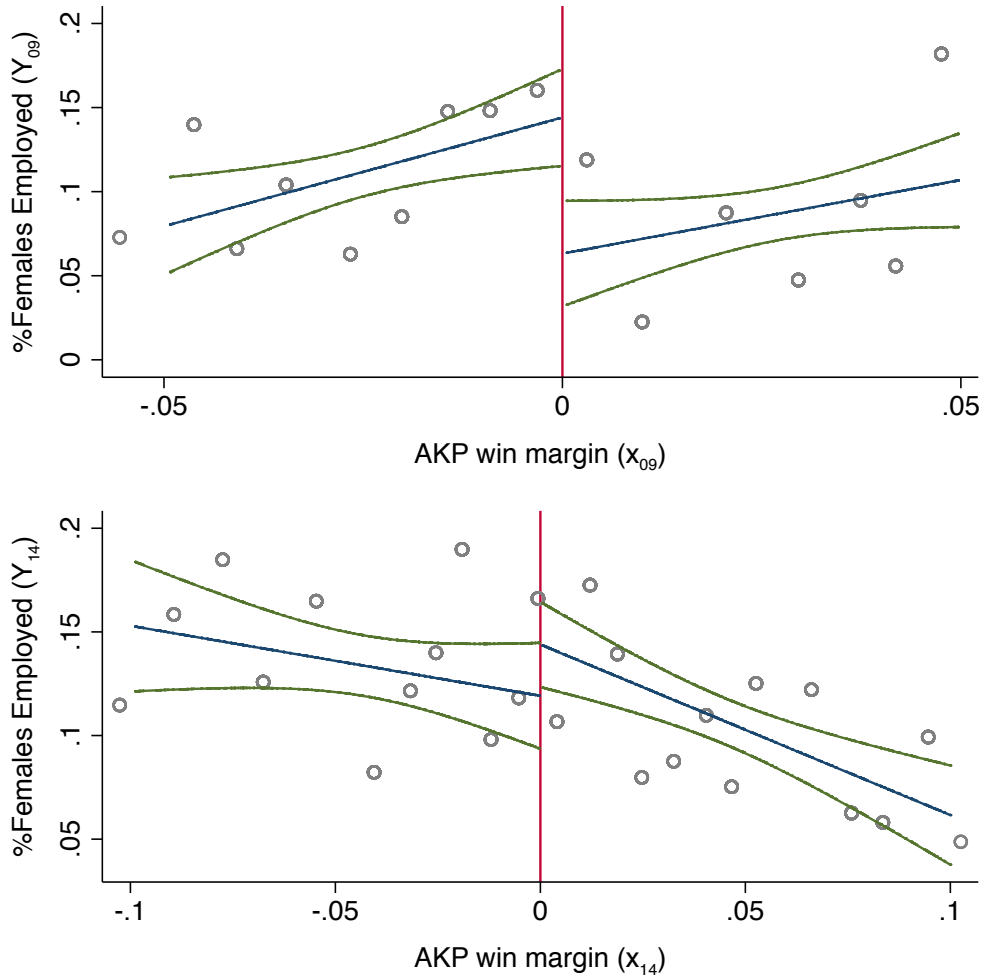
Figure 1: Vertical axis shows the mean outcome value, averaged over bins of 2% of AKP win margin. Horizontal axis represents the AKP win margin. The central line fits a local linear polynomial; and the lateral lines represent the 95 percent confidence intervals.

Figure 2 visualizes the difference in the AKP mayor effect, before and after the introduction of headscarves. To the right of the threshold, are municipalities where an AKP mayor took over. To the left of the threshold are municipalities where the secular mayor remained. The vertical axis plots the average differences between each $t = 14$ outcome and $t = 09$ 1outcome value, in bins of 2% AKP win margin.
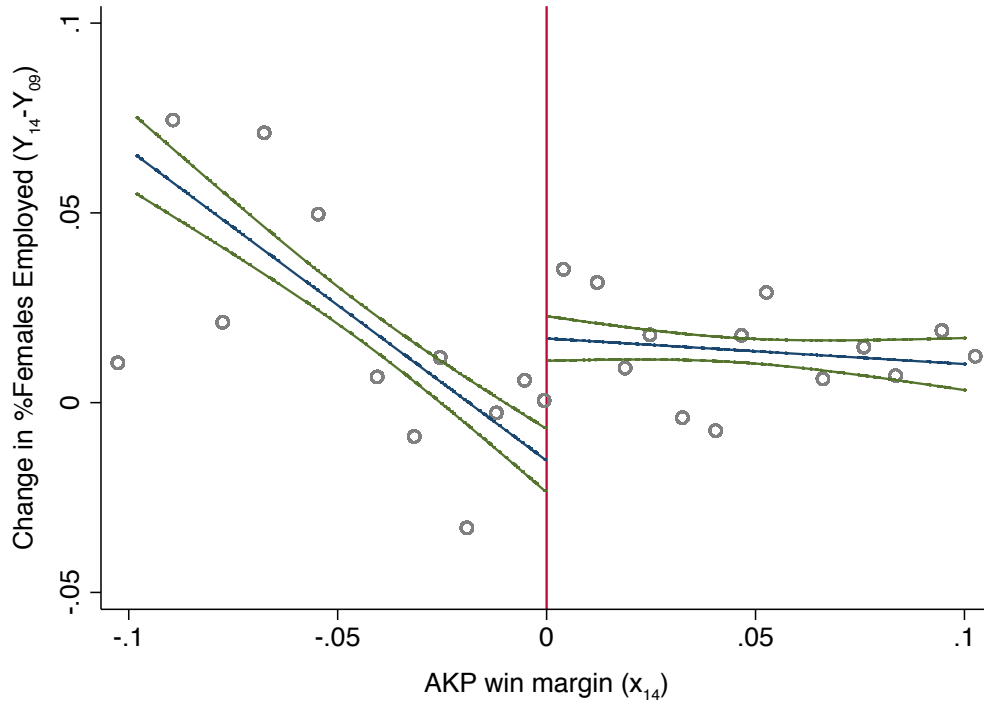
Figure 2: Vertical axis shows the difference of each outcome value for $t = 14$ and $t = 09$. Horizontal axis represents the AKP win margin. The central line fits a local linear polynomial; and the lateral lines represent the 95 percent confidence intervals. Bins are averaged over 2 % of vote share difference.

The change in the female share of municipal employees exhibits a sharp jump when moving from left to right of the threshold in the whole sample. With the relaxation of the headscarf ban, the female share of employees increased significantly more in municipalities where AKP won the elections by a slim vote margin. Near the threshold, however, the female share remained almost constant for secular municipalities.

Figure 3 sheds light on the timing of the headscarf law by showing that AKP mayors and secular mayors who marginally won the local elections in municipalities with a secular incumbent were on parallel trends before 2014. This figure plots the yearly RD coefficients. The pre-existing discontinuities reveal the negative AKP mayor effect before 2014, consistent with the RD results in the Appendix. The sign of the coefficient reverses in 2014, after the introduction of headscarves to public employment. This robustness check also indirectly suggests that the change in headscarf law was not anticipated in the previous years, especially considering
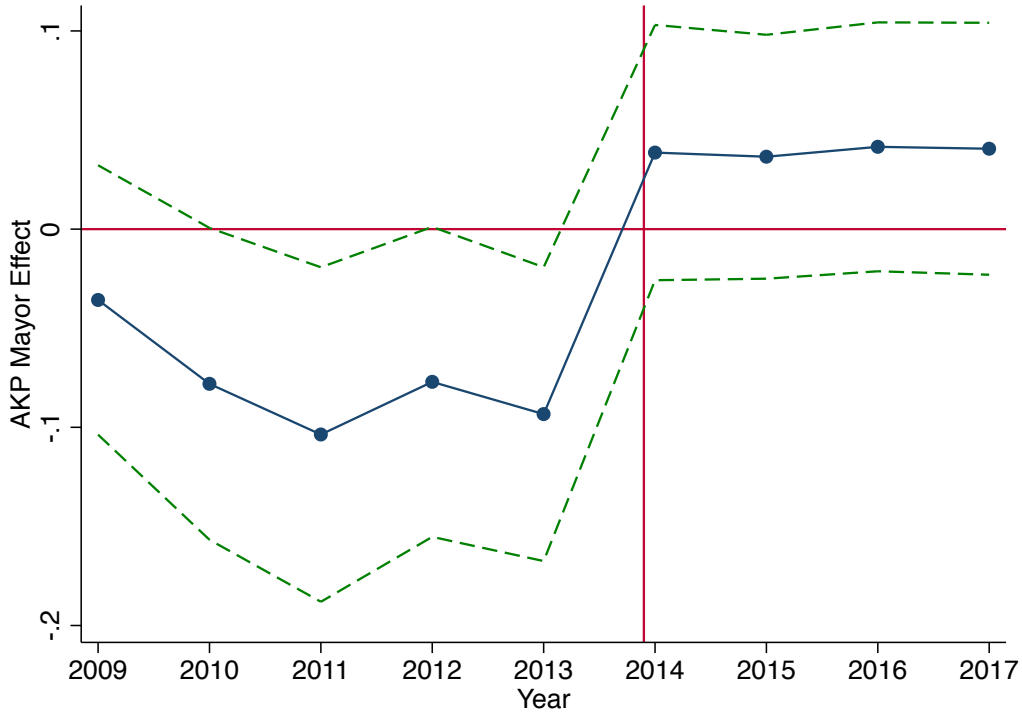
the difference between 2013 and 2014.

Figure 3: Yearly RD coefficients. Vertical axis contains point estimates of local linear RD regressions with optimal bandwidth computed following Calonico et al. [2014]. Horizontal axis plots the years. The central line is the point estimate; the lateral lines represent the 95 percent confidence intervals.

The results are, of course, a combination of supply and demand effects, since data on employment flows is unattainable. Nevertheless, the findings highlight the role of Islamic expression. The possibility to signal religiosity for women changes the effect of Islamist political rule on female share of municipal employees. This is consistent with a segregation result: a change in the composition of religious and secular females working in local governments headed by Islamist and secular mayors. Since the AKP mayor increases the share of females only when religious females are allowed to work, this suggests that they recruit religious females. And since the AKP mayor reduces the share of females when the religious females cannot work (without a change in total employment), this suggests that secular females move to other public institutions, and are replaced by male workers.

5.3   Robustness Checks

I proceed with some robustness checks. Figure 4 plots robustness of diff-in-disc estimates to different windows around the AKP win margin threshold. I plot the diff-in-disc coefficient for an array of bandwidths, including the optimal bandwidths employed in the main analysis, marked by the two vertical lines. The magnitude of the effect is mostly robust to bandwidth choice. Given the trade-off between bias and precision, smaller bandwidths yield larger confidence intervals in the expected direction of the bias. For bandwidths too large to be considered competitive elections, both the magnitude and statistical significance of the effect decline. Statistical significance disappears for a bandwidth of about 9% vote share difference, which is considerably large in the multi-party Turkish context. Estimates approach to zero and lose statistical significance as one extrapolates to larger bandwidths. Note that the diff-in-disc estimates converge to the diff-in-diff estimates as the bandwidth approaches 1.[28]

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[28]Results from a standard diff-in-diff analysis are presented in the Appendix.
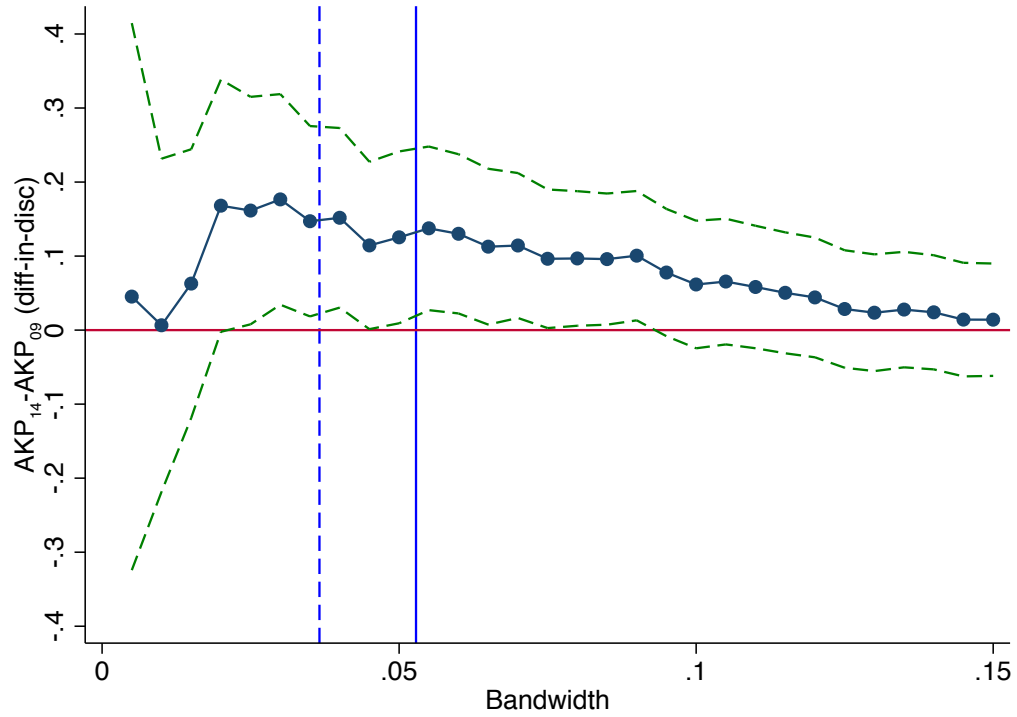
Figure 4: Vertical axis plots the diff-in-disc coefficients. Horizontal axis plots the different bandwidths used to estimate the reported diff-in-disc coefficients. Vertical lines mark the optimal bandwidths computed using the MSE and CER-optimal procedures following Calonico et al. [2014].

Next, I demonstrate robustness of diff-in-disc estimates to the inclusion of time-invariant covariates, year fixed effects, and higher order control functions. Table 5 presents the baseline diff-in-disc estimations with year fixed effects and time-invariant municipality characteristics included as covariates. As a time-invariant characteristic, I use a dummy for the region in which the municipality is located. Point estimates remain largely unchanged, with increased precision, as expected.

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Table 5: Robustness to covariates and year fixed effects

| | Dependent variable: % Females employed | | | |
	(1)	(2)	(3)	(4)
δ:AKP$_{14}$-AKP$_{09}$ (Headscarf)	0.124**	0.155**	0.143**	0.123
	(0.056)	(0.072)	(0.061)	(0.087)
τ_{09}: AKP$_{09}$	-0.082**	-0.064	-0.078**	-0.047
	(0.037)	(0.044)	(0.038)	(0.053)
τ_{14}: AKP$_{14}$	0.042	0.090	0.065	0.076
	(0.042)	(0.056)	(0.047)	(0.067)
Observations	1,023	535	713	380
Bandwidth	0.0531	0.0531	0.0368	0.0368
Mean	0.109	0.109	0.112	0.112
Covariates	1	1	1	1
Fixed Effects	1	1	1	1

Covariates include dummies for the seven geographical regions of Turkey. Estimation method is local linear regression with two optimal bandwidths estimated either following MSE-optimal or CER-optimal procedures described in Calonico et al. [2014]. Robust standard errors are clustered at the municipality level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 6 replicates the main analysis using higher order control functions of AKP win margin. Columns 1 and 2 report results from using quadratic control functions, and columns 3 and 4 contain results from control polynomials of third degree. The bandwidth used is MSE optimal following Calonico et al. [2014]. Columns 2 and 4 estimate the effect for half of the optimal bandwidth. The diff-in-disc estimates are robust to the inclusion of higher order control functions of the running variable. The computed optimal bandwidths and the point estimates are slightly larger in magnitude.

Table 6: Robustness to higher-order control functions

	Dependent variable: % Females employed			
	(1)	(2)	(3)	(4)
δ:AKP$_{14}$-AKP$_{09}$ (Headscarf)	0.154***	0.158**	0.163**	0.052
	(0.055)	(0.075)	(0.082)	(0.112)
τ_{09}: AKP$_{09}$	-0.098**	-0.072	-0.074	0.012
	(0.041)	(0.053)	(0.056)	(0.067)
τ_{14}: AKP$_{14}$	0.057	0.086	0.089	0.064
	(0.039)	(0.055)	(0.059)	(0.088)
Observations	1,895	1,127	1,539	900
Bandwidth	0.123	0.0615	0.0924	0.0462
Mean	0.106	0.110	0.106	0.104
Control function	2	2	3	3

Estimation method is local polynomial regression including control functions of degree 2 (columns 1 and 2), or of degree 3 (columns 3 and 4) of the AKP win margin, within the MSE-optimal bandwidth computed following Calonico et al. [2014], and half of the optimal bandwidth. Robust standard errors are clustered at the municipality level. *** p<0.01, ** p<0.05, * p<0.1.

I also investigate whether total municipal employment differs for Islamist and secular mayors, and before and after the introduction of headscarves. I do not detect a statistically significant effect of an AKP mayor on the size of the local government, measured by the total number of municipal employees adjusted by population, with or without a headscarf ban in place.[29] Hence, the estimated effects on the female share of employees result from changes in female recruitment. A reduction in the share of females implies that female employees are being replaced by male correspondents.

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[29]The diff-in-disc point estimate is 0.0007 (0.0006).

## 5.4 Validation of the Design

In this section I provide indirect tests of Assumptions 1 and 2. As discussed earlier, the estimation results rest on Assumptions 1 and 2 for the identification of the average treatment effect in the neighborhood of the AKP win margin threshold. Assumption 3 holds trivially since all municipalities comply with the nationally-implemented legislation of the headscarf ban, ensuring that compliance is not confounded by mayor type.

To test Assumption 1, I demonstrate that there is no manipulative sorting around the threshold, or differential manipulative sorting to Islamist and secular mayors in the two periods. Figure 5 displays results from the McCrary [2008] Density Test of a jump in the density of the running variable at the discontinuity point, for 2009 and 2014 local elections, respectively. This figure reveals no obvious sorting at the discontinuity for both elections as the estimates from the McCrary [2008] test are statistically insignificant.

Figure 6 tests the null hypothesis of continuity in the difference in the densities of AKP win margin for $t = 09$ and $t = 14$ at the discontinuity point, in municipalities with a secular incumbent, between the 2009 and 2014 elections. If election results were manipulated in favor of the AKP mayor in municipalities where there are more women with headscarves, my estimates would suffer from selection bias. Figures 5 and 6 are reassuring about the absence of manipulation, as there is no jump in either the separate densities, nor the difference between the two densities.
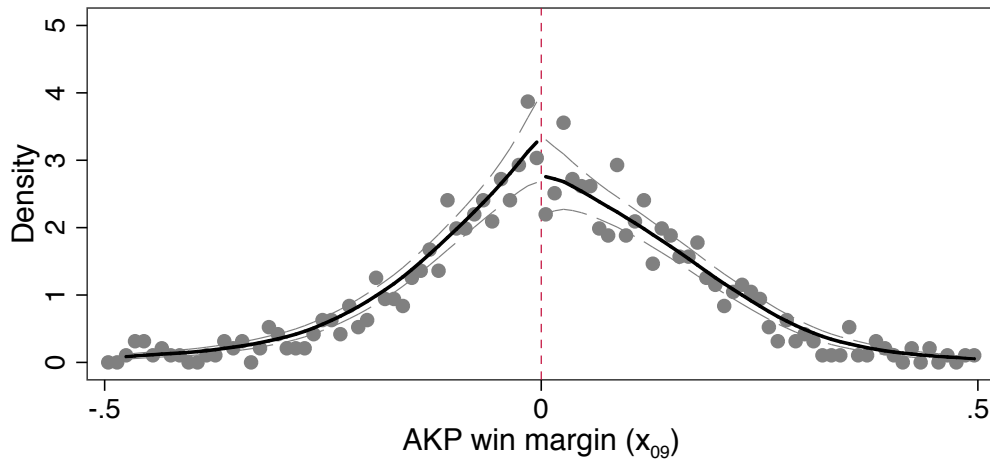
Discontinuity est. = -0.185, s.e. = 0.148
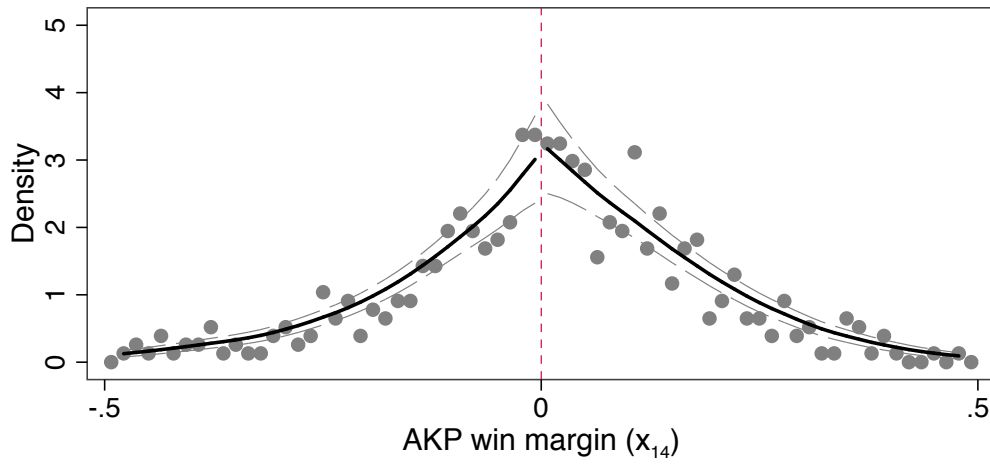
Discontinuity est. = 0.040, s.e. = 0.163

Figure 5: McCrary [2008] test of a jump at the discontinuity point. Density of the AKP win margin in $t = 09$ and $t = 14$, conditioning on secular incumbent.
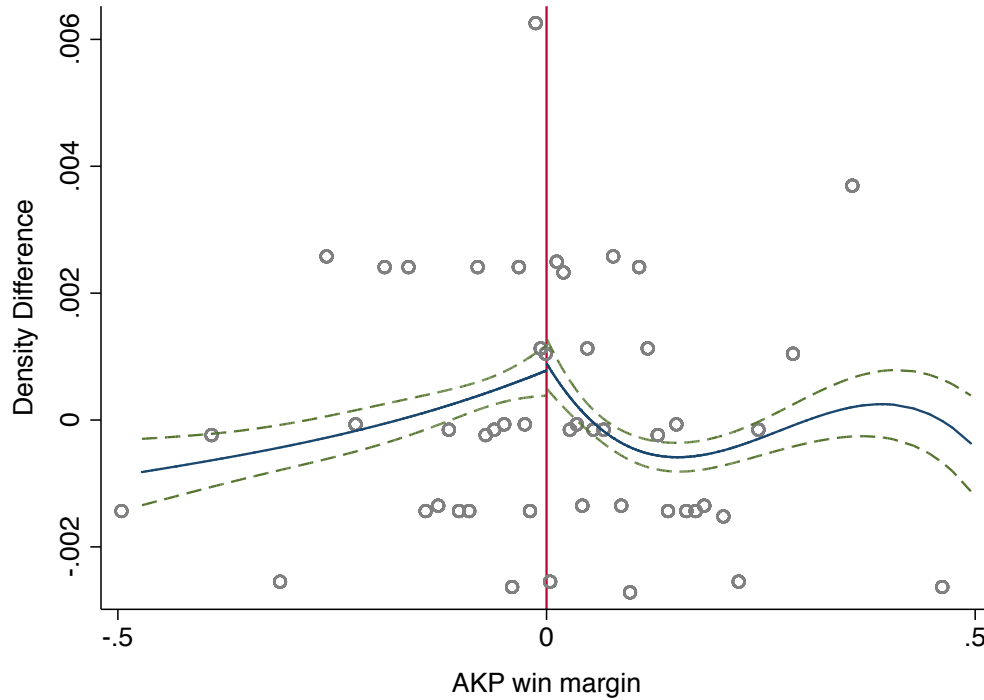
Figure 6: Test of the continuity of the difference between densities of the AKP win margin in 2014 and 2009 local elections, at the threshold. Bins represent averages over 2% Islamist win margin. A third-order polynomial is fitted. 95% confidence intervals are displayed.

To further verify the continuity assumption, I demonstrate continuity of pre-determined covariates at the discontinuity, and check for balancing of time-invariant characteristics of municipalities. Figures 7 and 8 show balancing of co-variates for the two RD's, confirming that the comparison groups with Islamist and secular mayors are statistically similar.

Figure 7 inspects the continuity of available covariates determined prior to the election outcomes in 2009. The set of covariates include: voter turnout in 2009 elections, number of political parties with votes, metropolitan dummy, population age shares, logarithm of population, never-married ratio of females to males in 15-30 cohort, literacy rate, high school completion rate, high school completion rate among females, and pre-treatment outcome, from the year 2008. The graphs depict unconditional local means of each covariate, along the AKP victory margin. The vertical line indicates the treatment cutoff, and a flexible local polynomial is fitted. Upon inspection of the figures, all of the covariates and the pre-treatment

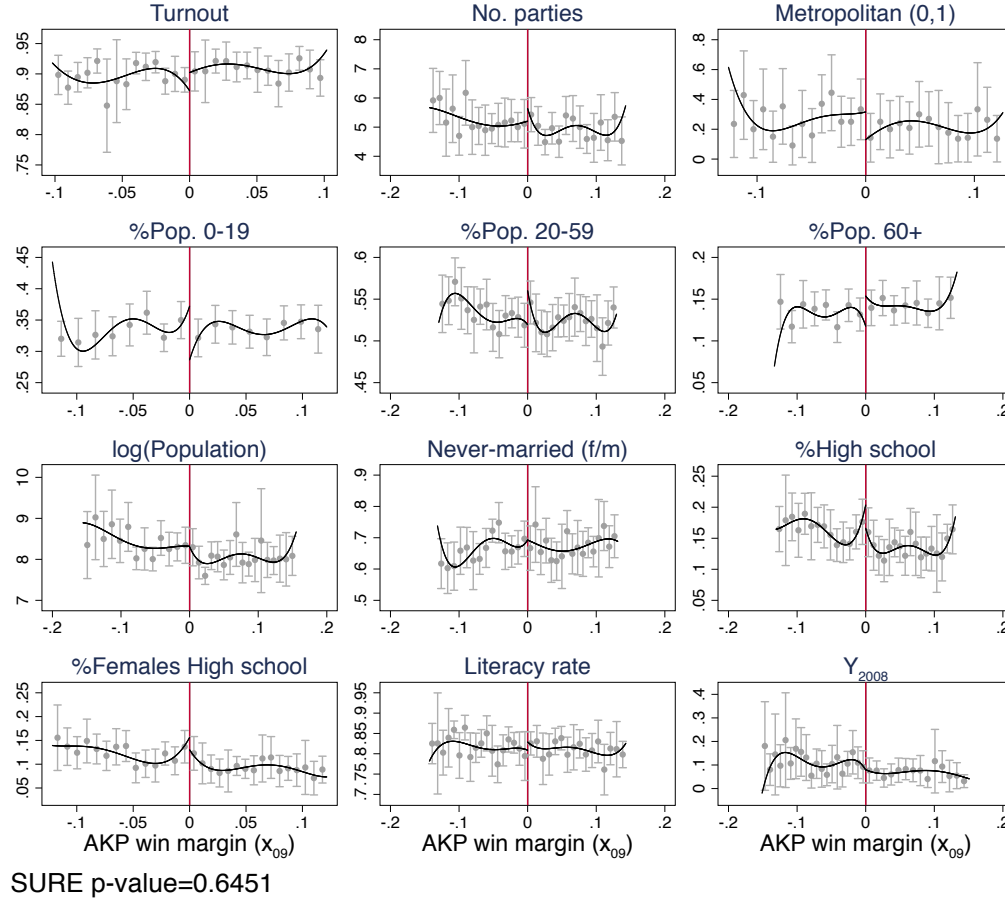outcome appear continuous over the cutoff point.[30]

Figure 7: Test for continuity of covariates for AKP mayor treatment in 2009. The set of covariates include turnout, number of parties, logarithm of population, never-married ratio, literacy rate, and high school completion rate among females. Dots represent unconditional local averages in optimally constructed bins (following Calonico et al. [2014]), by the AKP win margin in 2009 elections, within the optimal bandwidth calculated using the Imbens and Kalyanaraman [2011] algorithm. The vertical line marks the treatment cutoff. Ticks indicate 95% confidence intervals. The p-value from a SUR test of joint significance is reported.

I conduct identical validation tests for the analysis with the 2014 local elections, using pre-determined covariates from the year 2013. The set of covariates include: voter turnout, number of political parties with votes, metropolitan dummy, logarithm of population, gender ratio, never-married ratio of females to males for

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[30]The corresponding regressions are available upon request.

15-30 cohort, high school completion rate, ratio of high school completion among females to males, literacy rate, and pre-treatment outcome. Figure 8 displays continuity of binned variable means within the optimal bandwidth.[31] The placebo tests for the covariates and the pre-treatment outcome are satisfied.
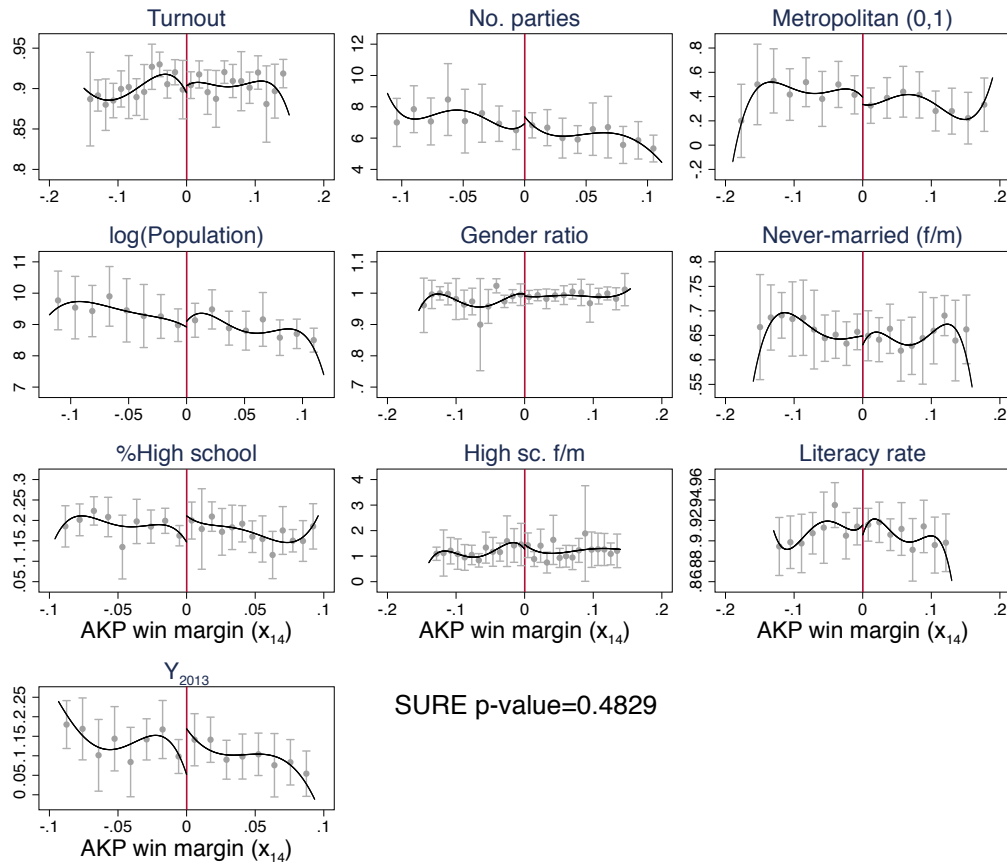

Figure 8: Test for continuity of covariates for AKP mayor treatment in 2014. The set of covariates include turnout, number of parties, logarithm of population, never-married ratio, literacy rate, and high school completion rate among females. Dots represent unconditional local averages in optimally constructed bins (following Calonico et al. [2014]), by the AKP win margin in 2014 elections, within the optimal bandwidth calculated using the Imbens and Kalyanaraman [2011] algorithm. The vertical line marks the treatment cutoff. Ticks indicate 95% confidence intervals. The p-value from a SUR test of joint significance is reported.

Table 7 presents diff-in-disc results from a falsification test, using time-invariant characteristics -geographical regions where the elections are held- as outcome

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[31]The corresponding regressions are available upon request.

variables.[32] Turkey is composed of seven geographical regions, which are constant over time. If identification is valid, the mayor elected in contested elections should not affect the proportion of cities in a given geographical region, before and after the introduction of headscarves. In other words, fixed characteristics of municipalities should not vary discontinuously just above and below the AKP win margin threshold. Geographic regions are an appealing dimension to test because both voting patterns and religious conservatism change greatly across regions. The results are robust, except for Region 1.[33]

Table 7: Balance tests of time-invariant characteristics

Region	R1	R2	R3	R4	R5	R6	R7
AKP_{14}-AKP_{09}	-0.341*	-0.054	-0.004	0.055	-0.041	0.025	0.253
	(0.189)	(0.147)	(0.200)	(0.119)	(0.159)	(0.190)	(0.180)
Observations	1,001	1,023	737	958	1,023	808	760
Bandwidth	0.0502	0.0527	0.0376	0.0477	0.0532	0.0408	0.0393

Dependent variables is the proportion of municipalities in a given geographical region. Estimation method is local linear regression with MSE-optimal bandwidth computed following Calonico et al. [2014]. Robust standard errors are clustered at the municipality level. *** p<0.01, ** p<0.05, * p<0.1.

To test Assumption 2, I show that municipalities where the AKP mayor barely won or lost the election were on parallel trends before the introduction of headscarves. Figure 2 in the previous subsection displays the local parallel trends assumption visually in a diff-in-diff framework.

Lastly, I conduct falsification tests using placebo years for the introduction of headscarves. The results are displayed in Table 8. First, I use 2009 as false treatment year for headscarves, since there was a change in mayor type but no change in headscarf law. I use data from the year 2008 for pre-headscarf and 2009-2013 for post-headscarf outcomes. The results are displayed in columns 1 and 2. Next, I use 2013 as false treatment year, to test anticipation of the policy. I use 2009-2012

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[32]An identical validity test is carried out in Grembi et al. [2016].

[33]The statistical significance of this estimate disappears when 13 municipalities in Region 1, subject to mergers are dropped from the sample.

for pre-treatment and 2013 for post-treatment. The corresponding results are displayed in columns 3 and 4. I repeat the main analysis, using two different optimal bandwidths, and experiment with half of each bandwidth. The false diff-in-disc estimates are in magnitude close to zero, and lack statistical significance. This further reassures about the validity of the design.

Table 8: Diff-in-disc estimates for placebo years

Dependent variable: % Females employed				
False Treatment Year	2009	2009	2013	2013
	(1)	(2)	(3)	(4)
Diff. in AKP effect	-0.053	0.000	-0.010	-0.002
	(0.049)	(0.075)	(0.027)	(0.039)
Observations	725	360	575	285
Bandwidth	0.0554	0.0277	0.0490	0.0245
Mean	0.0939	0.0920	0.0995	0.103

Columns 1 and 2 take 2008 as pre-headscarf and 2009-2013 as post-headscarf years. Columns 3 and 4 use 2009-2012 as pre-headscarf and 2013 as post-headscarf outcomes. Estimation method is local linear regression with two optimal bandwidths estimated following MSE or CER-optimal procedures described in Calonico et al. [2014]. Robust standard errors are clustered at the municipality level. *** p<0.01, ** p<0.05, * p<0.1.

6   Conclusion

Whether religious symbols should be banned in public is a politically charged issue. Many Western countries have recently regulated Muslim headwear in public or in certain institutions. However, these legislations have a dual nature. On the one hand, they are perceived as a threat to women's empowerment and to secularism. On the other hand, freedom of religious dress promotes equality, an essential component of democracy. I consider the interaction between a pro-Islamist policy (repeal of the headscarf ban) and a pro-Islamist institution (local governance by Islamist party); and the ramifications on female employment outcomes.

This study shows that Islamist political rule can improve female employment outcomes only when religious women are allowed to work. The effect is negative when religious females cannot work. The first result resonates with Meyersson's mechanism of the Islamist party removing barriers for the poor and the pious (Meyersson [2014]). Importantly, the effect of Islamist political rule on female employment depends on whether the institutions allow religious women to work or not.

Although the results of this paper are limited to a specific institutional setting, they have broader implications regarding the role of religious identity. In the framework of Akerlof and Kranton [2000], ability to signal piety improves employment outcomes for pious women, under the rule of a policymaker of the same (religious) type.

The data has two main limitations: lack of data on the religiosity of employees, and on employment flows. Consequently, one cannot infer the composition of religious employees before and after the repeal of the headscarf ban. The unavailability of data on employment flows renders it impossible to pin down supply and demand effects. Nevertheless, the results are consistent with a story of secular women flowing to other public institutions with the arrival of a pro-Islamist mayor, who replaces them with males (when religious women cannot work), or with religious females when religious women can work. Note that this may come at different costs for different types of women. Secular females are the group bearing the cost of discrimination against non-religious types, under Islamist political rule.

To conclude, the results of this paper imply that Islamist political rule empowers women only when the institutions are compatible with pro-Islamist preferences. This is a paradox as the same set of values that motivate women to wear headscarves, also propagate patriarchal values that keep women away from the labor and education markets.

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A Appendix

A.1 Municipal Mergers

In 2008 and 2012, Turkish municipalities were subject to mergers. The new legislations increased the number of metropolitan provinces, and town municipalities were merged to provincial or district municipalities in order to establish a sound population base. Some small town municipalities were abolished altogether, and lost their legal entities. A significant portion of municipalities were affected by the enacted law. The number of municipalities decreased from 3,215 to 2,950 in 2008, and to 1,396 in 2014.[34]

The mergers were legislated prior to the local elections in 2008 and 2012, but the new administration became effective with the local elections in 2009 and 2014.[35] Since the mergers were determined prior to the elections, they do not invalidate the randomization assumption in contested elections, even if they were endogenously determined .

Although a large number of municipalities were affected by the mergers, both pre and post-treatment data exists for a majority of the municipalities.[36] I drop the new municipalities from my sample, and validate that the merge dummy is continuous around the treatment cutoff. The results are further robust to an alternative empirical strategy with continuous treatment, where treatment at the level of pre-merger municipalities is weighted by the relative employment in the merged municipality.[37]

Table 9 demonstrates that the merger dummy does not exhibit discontinuity at the treatment cutoff. The estimates come from baseline Regression Discontinuity specifications with local linear function of the control variable and optimal bandwidths computed following Calonico et al. [2014].

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[34]Data on the historical evolution of the number of municipalities can be found at: http://www.tbb.gov.tr/en/local-authorities/types-of-local-governments/

[35]See Aygül [2016] and Oguz and Sonmez [2014] for a detailed overview and discussion of the mergers.

[36]There are 138 new municipalities in 2009 elections, and 41 new municipalities in 2014 elections that cannot be matched to pre-treatment data. Post-treatment data for municipalities that merged into others, is the outcome in the merged municipality. I do not consider these municipalities separately, as individual post-treatment outcome data is not available.

[37]Results are available upon request.

Table 9: Falsification test for mergers

	Dependent variable: Probability of merge	
Treatment	AKP_{09}	AKP_{14}
RD Treatment Effect	0.081	-0.151
	(0.080)	(0.108)
Observations	715	355
Bandwidth	0.18	0.14

Estimation method is local linear regression with optimal bandwidth estimated following the MSE-optimal procedure described in Calonico et al. [2014]. Robust standard errors are clustered at the municipality level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

A.2 Difference-in-Differences Results

As a benchmark, Table 10 reports results from difference-in-differences (diff-in-diff) estimations, comparing the female share of employees in municipalities with mayors from AKP and secular parties, before and after the introduction of headscarves. Here, the sample of analysis also includes infra-marginal municipalities, and not only the competitive municipalities.[38] In that respect, the following analysis also tests whether the diff-in-disc results hold also for the infra-marginal municipalities, and shows that they do not hold in a diff-in-diff framework. The effect of revoking the headscarf ban on female share of municipal employees is not significant statistically nor economically. The impact of lifting the headscarf ban is confounded by sorting of municipalities to AKP and secular mayors.

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[38]These are municipalities with the secular incumbent, where the pro-Islamist party was ranked first or second in the local elections. There is no restriction with regards to the victory margin.

Table 10: Diff-in-diff results

	Dependent variable: % Females employed		
	(1)	(2)	(3)
Headscarf	0.003	0.003	0.009
	(0.024)	(0.024)	(0.022)
Observations	3,381	3,381	3,381
Mean	0.101	0.101	0.101
Year FE	0	1	1
Covariates	0	0	1

Column 2 adds covariates, column 3 accounts for year fixed effects. Covariates include dummies for the seven geographical regions of Turkey. Robust standard errors are clustered at the municipality level. *** p<0.01, ** p<0.05, * p<0.1.

Figure 9 plots the coefficients in a difference-in-differences specification, showing that the standard parallel trends assumption of difference-in-differences is violated for the outcome of interest. Given the difference in pre-trends, the diff-in-diff coefficients suffer from endogeneity between assignment to mayor type, the headscarf treatment, and female employment outcomes. The figure shows that surprisingly, in 2014 and 2015, the standard diff-in-diff estimates show that AKP mayors employ a lower share of females in municipalities compared to secular mayors, after the introduction of headscarves.
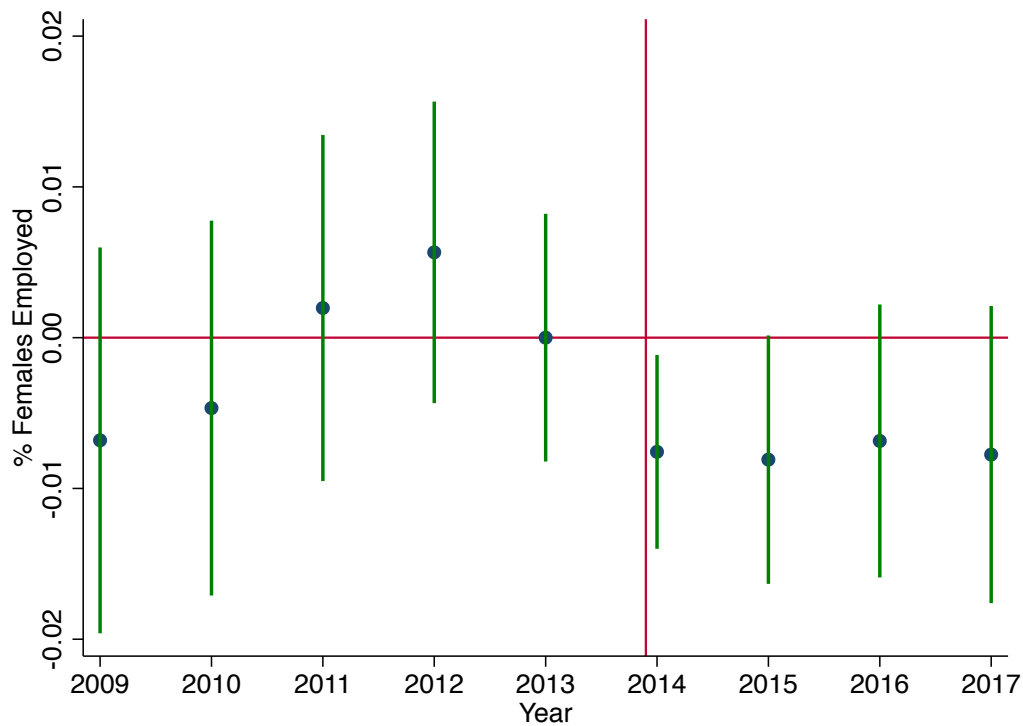
Figure 9: Diff-in-diff coefficients for each year 2009-2017. The coefficient on the year 2013 is the omitted category, for which confidence interval is obtained as the mean of the confidence intervals in the years 2012 and 2014. Treatment is defined as having an Islamist mayor. For each year, I plot the point estimate and the 95% confidence interval. The regression includes year fixed effects, and standard errors are clustered at the municipality level.

A.3   Cross-sectional Regression Discontinuity Results

For the sake of completeness, I also present the results from cross-sectional RD analysis, using as treatment Islamist party takeover in 2009 and 2014 local elections, respectively. Note that the standard validity checks for the RD are included in the main text.

I start by presenting results from $t = 09$. Figure 10 represents a graphical summary of the impact of AKP takeover in 2009. The graphs show the dynamics of female share of municipal employees, for the years 2010 and 2013. Each figure plots unconditional means of the outcome variable in optimally selected bins against the running variable, within the Imbens and Kalyanaraman [2011] optimal bandwidth. The vertical line marks the cutoff at zero. The graphs include fitted values of a local linear polynomial on each side of the cutoff.

In the short run (t+1), the outcome exhibits a negative jump at the cutoff, as displayed in the upper panel. Municipalities with a secular incumbent where the AKP marginally won the elections end up with a lower share of female employees. The lower panel shows that the negative AKP mayor effect is persistent, and similar in magnitude. Religious party takeover reduces the female composition of the municipal workers by about half.
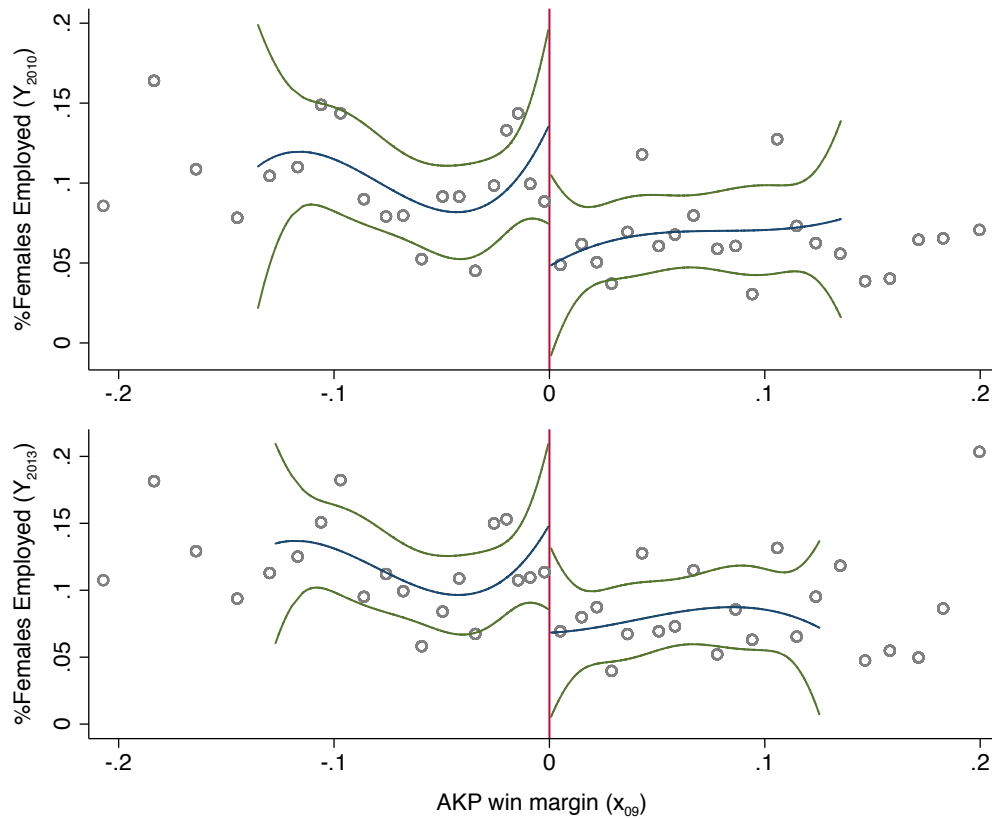

Figure 10: AKP mayor effect on share of females employed in 2010 and 2013, within the optimal bandwidth computed following Calonico et al. [2014]. Each dot represents the mean share of females employed for the given year, averaged over 2% of AKP win margin. Horizontal axis represents the AKP win margin for $t = 09$. The central line fits a third-order polynomial; and the lateral lines represent the 95 percent confidence intervals.

Although the negative AKP mayor effect on female employment outcomes in $t = 09$ is visible in the figures, a more refined analysis is required to analyze the RD treatment effect. Tables 11 and 12 report the corresponding RD regression results for 2010 and 2013 outcomes. Each column presents the estimation results for

the share of female employees in the given year, with variations of the bandwidth and local polynomial.

The first column of each table presents unconditional ordinary least squares (OLS) estimates of the mayor treatment. The raw correlations reveal an overall negative relationship between local governance by AKP mayor and the share of females employed in municipalities. The correlations are statistically significant at conventional levels. The rest of the columns report bias-corrected RD estimates and robust standard errors following Calonico et al. [2014]. Columns 2-4 present local linear RD estimates with different data-driven optimal bandwidths, and column 5 includes a fourth degree control function of the running variable.[39] Finally, column 6 reports more precisely estimated results from addition of covariates to a local linear model.[40]

Table 11: RD results for $t = 09$

	Dependent variable: % Females employed in 2010					
	(1)	(2)	(3)	(4)	(5)	(6)
AKP_{09}	-0.068***	-0.052**	-0.075**	-0.064**	-0.079**	-0.032***
	(0.010)	(0.026)	(0.032)	(0.027)	(0.040)	(0.012)
Observations	1173	587	564	457	826	496
Bandwidth	1.00	0.13	0.13	0.10	0.25	0.11
Control function	0	1	1	1	4	1
Covariates	0	0	0	0	0	1

The first column presents unconditional OLS estimates. The rest of the columns report bias-corrected local linear RD estimates and robust standard errors, calculated using Calonico et al. [2014]. The set of covariates include: turnout, number of parties, logarithm of population, never-married ratio in 15-30 cohort, literacy rate, and high school completion rate among females. *** p<0.01, ** p<0.05, * p<0.1.

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[39]Optimal bandwidth choice is discussed extensively in Imbens and Kalyanaraman [2011] and Cattaneo et al. [2017]; and sensitivity analyses to different bandwidths are recommended.

[40]The set of covariates are exactly those used in the previous section: turnout, number of parties, logarithm of population, never-married ratio in 15-30 cohort, literacy rate, and high school completion rate among females.

Table 12: RD results for $t = 09$

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: % Females employed in 2013					
AKP$_{09}$	-0.058***	-0.054**	-0.063**	-0.066**	-0.083**	-0.048***
	(0.010)	(0.025)	(0.026)	(0.026)	(0.036)	(0.018)
Observations	1172	555	713	427	828	457
Bandwidth	1.00	0.12	0.18	0.09	0.26	0.10
Control function	0	1	1	1	4	1
Covariates	0	0	0	0	0	1

The first column presents unconditional OLS estimates. The rest of the columns report bias-corrected local linear RD estimates and robust standard errors, calculated using Calonico et al. [2014]. The set of covariates include: turnout, number of parties, logarithm of population, never-married ratio in 15-30 cohort, literacy rate, and high school completion rate among females. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

The share of female employees is lower in municipalities that marginally switched to an Islamist mayor in 2009. The negative impact is nearly identical in the short and long run. Switching to an Islamist mayor lowers the share of females in the municipal government by about 5 percentage points (for the baseline bandwidth in column 2), which is persistent, representing a relative reduction of 62 percent. The effects are not driven by the specification of the control function or by bandwidth selection. The estimates remain negative and statistically significant across the columns.

Table 13 repeats the analysis for $t = 14$, and Figure 11 shows the results in graphical form. A local polynomial of degree 4 is overlaid using raw data on each side of the cutoff.
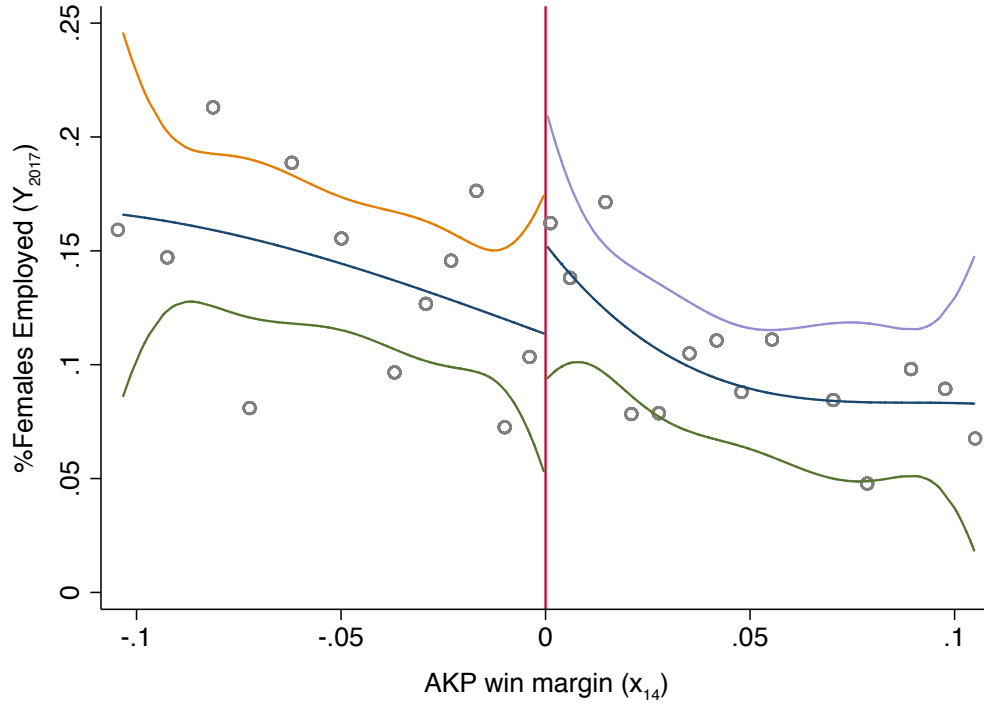
Figure 11: AKP mayor effect on share of females employed in 2017, within the optimal bandwidth computed following Calonico et al. [2014]. Each dot represents the mean share of females employed for the given year, averaged over 2% of AKP win margin. Horizontal axis represents the AKP win margin for $t = 14$. The central line fits a third-order polynomial; and the lateral lines represent the 95 percent confidence intervals.

The corresponding RD estimates are provided in Table 13, following the same specifications as the previously reported results. Although the raw correlation in column 1 indicates a negative relationship between switching to AKP mayor and the share of female employees in 2017, RD estimates have the opposite sign. In contrast to $t = 09$, local governance by pro-Islamist mayor in $t = 14$ promotes the share of female employees. The estimates are robust to additional bandwidths, increase in the order of the control function polynomial (columns 3-5), and to the inclusion of covariates.

Table 13: RD results for $t = 14$

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: % Females employed in 2017					
AKP$_{14}$	-0.046***	0.062*	0.079*	0.067*	0.097**	0.008*
	(0.011)	(0.034)	(0.044)	(0.037)	(0.043)	(0.016)
Observations	617	238	227	189	484	226
Bandwidth	1.00	0.09	0.08	0.07	0.30	0.08
Control function	0	1	1	1	4	1
Covariates	0	0	0	0	0	0

The first column presents unconditional OLS estimates. The rest of the columns report bias-corrected local linear RD estimates and robust standard errors, calculated using Calonico et al. [2014]. The set of covariates include: turnout, number of parties, logarithm of population, never-married ratio in 15-30 cohort, literacy rate, and high school completion rate among females. *** p<0.01, ** p<0.05, * p<0.1.