

RÉPUBLIQUE DU SÉNÉGAL

Un peuple- un But- une Foi



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Impact Evaluation of Public Policies

Theme :

Analysis of a Regression Discontinuity Model

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1 Introduction

Meyersson used a method called regression discontinuity design to study how the Islamic party affects women's empowerment in Turkey. This means looking at data from Turkish towns and finding out that the Islamic party has a big impact on empowering women, especially those who are poor and religious. Meyerson started by giving treatment to some places to see the real impact. The regression discontinuity design is used because it's tricky to compare towns based on the type of mayor they elect. This is not random; towns more likely to pick an Islamic mayor might also have issues with women's education for other reasons. So, this method helps avoid that problem. In this design, towns below a certain point get a regular mayor (control group), and those above get an Islamic mayor (treatment group), with the winning margin as a control. Overall, when Turkey elected Islamic mayors through fair voting, it helped women get more into education and politics. Surprisingly, this didn't make people more Islamic over time. This mainly happened in poorer and religious parts of Turkey, showing that it boosted the less fortunate and religious people.

2 Dicussion about preview results

The table below reveals that women aged 15 to 20 seem to have a lower probability of obtaining a high school diploma in Islamic municipalities (14%) compared to secular municipalities (16.6%). Additionally, in 1994, all municipalities had an average of 12.0% Islamic mayors. In Islamic municipalities, the presence of an Islamic mayor is almost certain (100%), while it is non-existent in secular municipalities. In summary, the table suggests significant differences between Islamic and secular municipalities regarding the percentage of women aged 15 to 20 who have completed their high school education, with a tendency to be lower in Islamic municipalities. However, there are no significant differences for men in this age group. The main explanatory variable, the presence of an Islamic mayor in 1994, shows a strong polarization, with a concentration of Islamic mayors in Islamic municipalities and a complete absence in secular municipalities.

TABLE 1 – SUMMARY STATISTICS

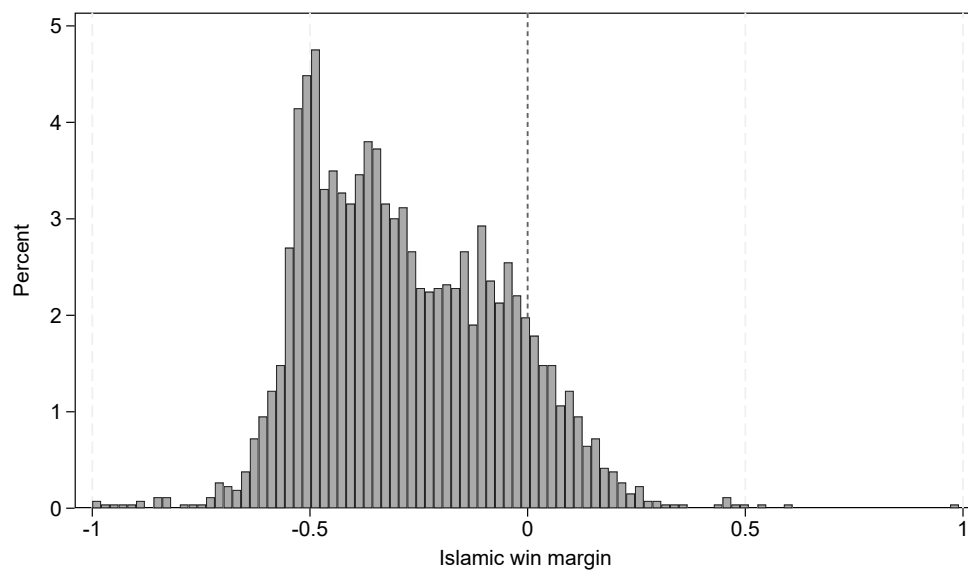
	Mayor type			Difference
	All	Islamic	Secular	(2)-(3)
	(1)	(2)	(3)	(4)
	Mean	Mean	Mean	Est.
	(S.D.)	(S.D.)	(S.D.)	(S.E.)
<i>Main outcome variable</i>				
Share women aged 15-20 with high school education	0.163	0.140	0.166	-0.026***
	(0.096)	(0.090)	(0.096)	(0.006)
Share men aged 15-20 with high school education	0.192	0.196	0.192	0.004
	(0.077)	(0.076)	(0.078)	(0.005)
<i>Main explanatory variable</i>				
Islamic mayor in 1994	0.120	1.000	0.000	1.000
	(0.325)	(0.000)	(0.000)	(0.000)

3 Discussion about a graph

Before delving into the results of the RD (Regression Discontinuity), the author performs two standard validity checks following the methodology proposed by Imbens and Lemieux (2008). The first check pertains to the continuity of the density of the determining variable, namely the Islamic win margin, at the discontinuity. To assess this, the Figure below initially presents a histogram of the determining variable across the entire range, divided into 2 percent intervals. It is crafted to more formally implement the McCrary (2008) density test aimed at

detecting a jump at the discontinuity. The results of these checks are discussed on the density associated with this histogram. Neither of the two figures reveals any clear pattern or significant clustering around the discontinuity. In other words, there are no clear indications of non-random behaviors or data manipulations near the threshold. It's also important to note that these preliminary steps aim to ensure that the design of the RD is appropriate and that the data does not exhibit systematic distortion around the discontinuity, which could compromise the validity of subsequent results.

FIGURE 1 – A global Histogramm



4 Discussion about the second table

The table below provides insights into the impact of high school completion for women aged 15 to 20. Firstly, it is noticeable that, for both linear and non-linear specifications without control variables, the completion coefficients are negative and statistically significant, albeit with a very low explanatory power (below 5%). This implies a negative association between women's high school completion and governance linked to Islamic regimes. However, due to the limited explanatory power of the model, these results are not sufficiently convincing. Moreover, it is observed that when control variables are introduced, the completion coefficient becomes positive and significant. This indicates a positive causal effect between the Islamic party regime and high school completion, regardless of the model specification and bandwidth. The linear specification shows a model explanatory power exceeding 55%, regardless of the bandwidth. All these observations confirm that the advent of the Islamic party has had a positive impact on

the empowerment of women in their high school completion process.

TABLE 2 – ISLAMIC RULE AND HIGH SCHOOL EDUCATION

Outcome	Completed high school in 2000							
Age cohort	15-20							
Control function	None		Linear				Quadratic	Cubic
Bandwidth	Global		h		$\frac{h}{2}$	$2h$	\hat{h}	\hat{h}
Covariates	No	Yes	No	Yes	Yes	Yes	Yes	Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A : Women								
Outcome mean	0.163	0.163	0.152	0.152	0.144	0.166	0.166	0.152
mayor1994	-0.0258*** (0.006)	0.0111** (0.005)	0.0320*** (0.011)	0.0320*** (0.011)	0.0325*** (0.010)	0.0221*** (0.006)	0.0221*** (0.006)	0.0434*** (0.014)
Bandwidth	1.000	1.000	0.240	0.240	0.120	0.480	0.240	0.240
R^2	0.001	0.555	0.026	0.026	0.647	0.581	0.581	0.654
Observations	2628	2628	1020	1020	589	2049	2049	1020

5 Conclusion

Through Meyersson's article, I learned a lot about studying the effects of public policies using a regression discontinuity model. One important thing I got from this study is the positive impact that municipalities led by the Islamic party, previously criticized for its views on women, had on empowering and educating women aged 15 to 20. Islamic mayors clearly encouraged more women to get involved, both in education and politics, without showing strong party preferences. However, the article also points out a big problem with the way the author studied things, called the external validity problem. It means that the results should be understood in a specific context because of the unique nature of Turkish local politics. So, it's hard to separate the positive effect of Islamic rule on disadvantaged and religious communities from the things that make it difficult for them to get involved in the first place. These things show why we need to be careful in how we study things and really understand the situation when we look at the results of this analysis.