Do Women Mayors Enhance Patent Innovation?

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Very preliminary, please do not cite, reference, or quote. Comments welcome!

Abstract

We investigate how female political leaders might impact innovation, as measured by the effect of the election of women mayors on patent grants in U.S. cities. To address endogeneity, we employ a regression discontinuity (RD) design and compare patent grants based on inventor location in U.S. cities where a female candidate barely won a mayoral election with such grants in cities where a female candidate barely lost. Preliminary results show that female mayors significantly increase the number of granted patents relative to male mayors. These findings persist over time, as there are significant effects when a female incumbent wins for a second time. The findings are also robust to different bandwidth choices, polynomial orders of the assignment variable, and discontinuity checks in the covariates.
Keywords: women political leaders, regression discontinuity design, local innovation, patent grants.

JEL-Classifications: O31, D72, P48.

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1 Extended Abstract

This paper investigates how female mayorships in U.S. cities impact local innovation, as measured by patenting activity. We collect data on over 5,000 mayoral elections in 800 U.S. cities between 1975–2014, including the name, vote share, and gender of the winner and runner-up. To address endogeneity, we employ a regression discontinuity (RD) design and compare patent filings and grants based on inventor and assignee firm location in U.S. cities where a female candidate barely won a mayoral election with applications and grants in cities where the female candidate barely lost. We augment our election dataset with rich patent-level data, including information on inventor gender, assignee firm, and monetary value of patents.

Our preliminary results indicate that female mayors significantly outperform male mayors in terms of local innovation activity, which holds both in the short-term and in the long-term. These findings are robust to different bandwidth choices, polynomial orders of the assignment variable, and discontinuity checks in covariates.

We seek to explore which channels explain this effect by merging establishment-level data into our innovation and election dataset. We use Dun & Bradstreet's National Establishment Time Series (NETS) data to investigate whether treatment effects are driven by: (i) general local economic improvement proxied by sales, employment, or establishment growth of firms; (ii) start-up activity; and/or (iii) growth in female-owned firms.

Moreover, we seek to introduce a new empirical methodology that could broadly apply to other projects involving establishment-level data. In particular, we augment the standard RD framework with a new differences-in-differences style of quasi-counterfactual feature. Namely, we apply a within-firm estimator for firms with establishments in treated cities (where an election takes place) as well as neighboring control cities (where no election takes place).