Applied Statistical Analysis II Replication Study

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Corporate Board Quotas and Gender Equality in the Workplace

Latura, A., & Weeks, A. C. (2022).
American Journal of Political Science.

Research Question:

Do corporate board gender quotas increase attention to gender equality in workplace policies?

Theory:

Firms may increase attention given to gender equality due to:

1) Critical mass of women on board = comfortable to address women's issues (Mendelberg, Karpowitz, and Goedert 2013)

2) "Spillover" - adoption of quota produces "policy feedback effects" (Pierson 1993; Campbell 2012)

Study Details

Data, Case Selection & Method

- Data: novel dataset of firm-level attention to gender equality issues. 962 annual and sustainability reports from 96 companies.
- Subject Countries: Italy (quota) & Greece (no quota)
- Method: difference-in-difference design; text analysis to compare pre- and post- implementation attention to gender inequality issues in reports. OLS regression.

Study Details

Model & Variables

- Model Specification:

```
m1 <- lm(prop_attn ~ year_f + company + quota + sustain + pct_rev_change,
      data=data_final)
```

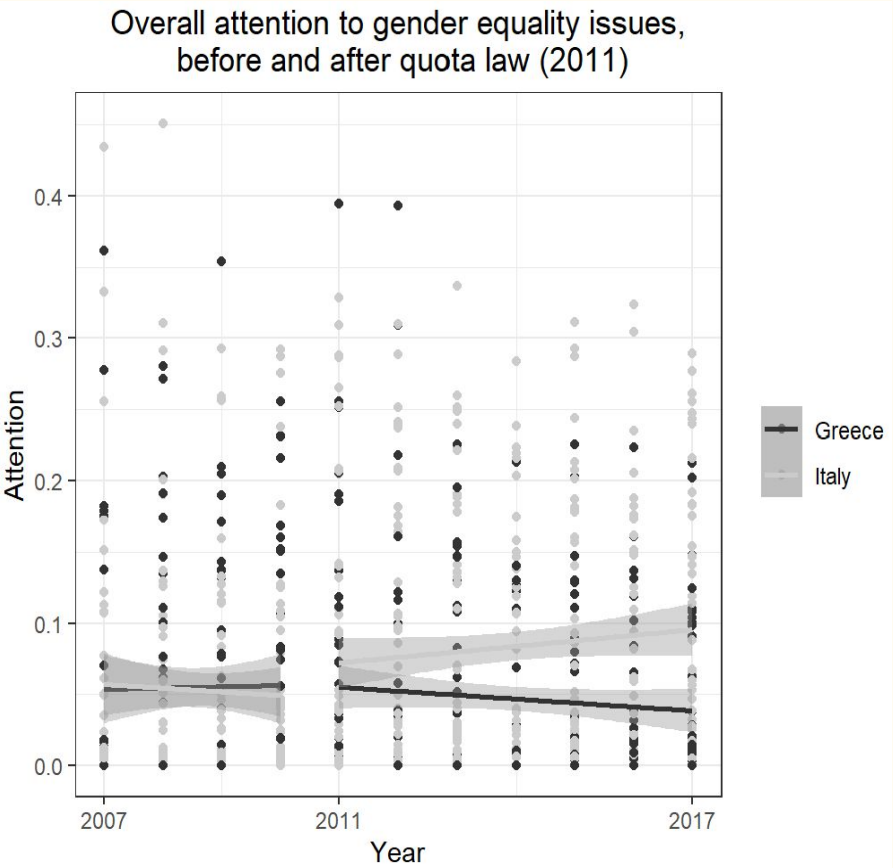
- Dependent Variable: Company attention to gender equality issues (% gender equality tokens from total annual/sustainability report)

- Independent Variables: Quota (binary), sustainability report (binary), % revenue change (continuous), financial year (integer), company (unordered categorical)

Results

- The figure shows an increasing trend for overall attention to gender equality issues for Italian companies following introduction of the quota law (2011).

- Overall attention for Italian companies increases from approx. 0.05% to 0.09%, an increase of over 50%.



Results

Table 2: Effects of Quota Law on Company Attention to Gender Equality

	Dependent variable:				
	Overall	Leadership	Pay	Family Care	Discrim/Harass
	(1)	(2)	(3)	(4)	(5)
Quota	0.033**	0.012***	0.002*	0.020*	-0.001
	(0.010)	(0.003)	(0.001)	(0.009)	(0.001)
Sustainability	0.122***	0.017***	0.001	0.101***	0.003
	(0.015)	(0.005)	(0.001)	(0.015)	(0.003)
Percent Revenue Change	-0.000	-0.000	-0.000***	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Company FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	761	761	761	761	761
R2	0.801	0.722	0.548	0.743	0.463
Adjusted R2	0.770	0.680	0.479	0.704	0.380

Note: *p<0.05; **p<0.01; ***p<0.001
Robust standard errors clustered around company in parentheses.

Adoption of quota leads to a 0.03% increase in attention to gender inequality issues on average, holding other variables constant.

My Spin

Challenge assumptions of original model specification and propose alternative

Original model makes some big assumptions...

% Revenue Change

- Author's offer no theoretical reasoning for its inclusion
- Assumption that YoY relative performance affects company's attention to gender equality issues; proxy for company performance?
- Results of OLS show that effect is not statistically differentiable from zero

Company case selection

- Highest revenue companies from Borsa Italia and Athex exchanges; assumption of similarity in behaviour
- Spread of revenue for these companies is large... IQR = €408m - €8.7b
- May actually be significant disparity in terms of public attention and resources available.

Proposed additional variables

Revenue (absolute)

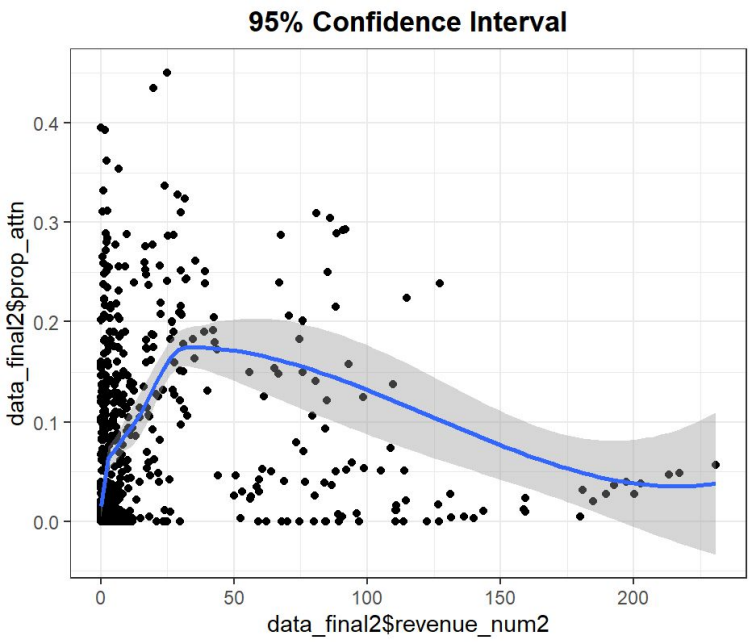
- Add as continuous variable; as revenues grow companies expected to dedicate more funds to programmes and policies, including gender equality
- Higher revenue expected to drive higher proportion of attention up to a point; very high revenue companies may have huge roster of programmes, diluting proportion of attention to gender equality

Word Count

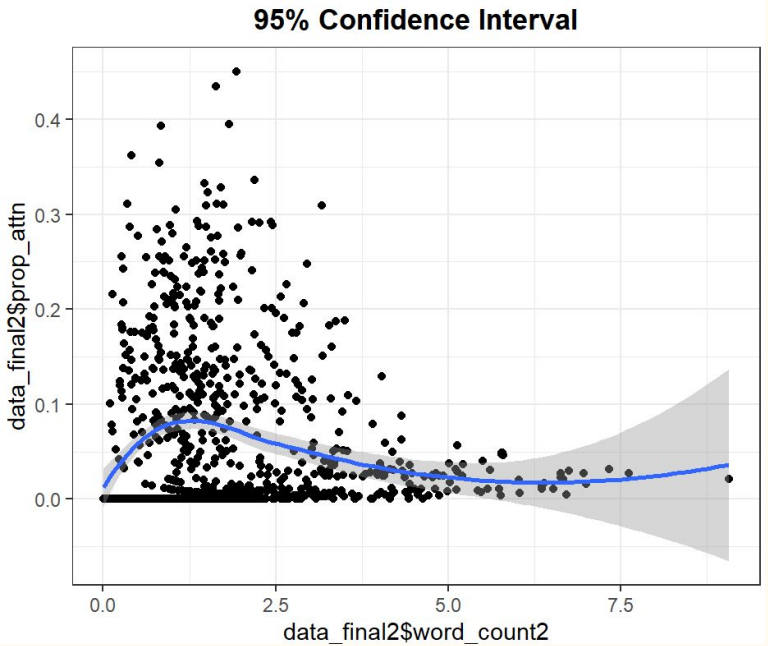
- Original model doesn't consider size of company reports, only proportions
- Longer reports (higher word count) may indicate a firm's greater attention to and funding of programmes/policies.
- Again, longer reports expected to drive higher proportion of attention to gender equality up to a point; very long word counts may indicate wider roster of programmes which may dilute attention

Proposed additional variables

Revenue (absolute)



Word Count



New Model Specification

```
lm(prop_attn ~ year_f + company + quota + sustain + pct_rev_change +
     word_count2 + I(word_count2^2) + I(word_count2^3) +
     revenue_num2 + I(revenue_num2^2) + I(revenue_num2^3),
   data=data_final2)
```

Results

Table 2: Effects of Quota Law on Company Attention to Gender Equality

	Dependent variable:				
	Overall (1)	Leadership (2)	Pay (3)	Family Care (4)	Discrim/Harass (5)
Quota	0.037***	0.013***	0.002	0.022***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sustainability	0.124***	0.017***	0.000	0.104***	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Pct Revenue Change	-0.000	-0.000	-0.000	0.000	0.000
Word Count	0.019***	0.005***	-0.001	0.011***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
(Word Count)2	-0.006***	-0.001***	0.000	-0.003***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(Word Count)3	0.000	0.000	-0.000	0.000	0.000
Revenue Number	-0.002***	-0.000	-0.000	-0.001***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(Revenue Number)2	0.000***	-0.000	0.000	0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(Revenue Number)3	-0.000***	0.000	-0.000	-0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Company FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	761	761	761	761	761
R2	0.802	0.724	0.555	0.744	0.477
Adjusted R2	0.770	0.679	0.482	0.702	0.392

Note: *p<0.05; **p<0.01; ***p<0.001
Robust standard errors clustered around company in parentheses.

Table 2: Effects of Quota Law on Company Attention to Gender Equality

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Company FEs	Yes	Yes	Yes	Yes	Yes
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Note: *p<0.05; **p<0.01; ***p<0.001
Robust standard errors clustered around company in parentheses.

- Partial effect of Quota increases
- Word Count/Revenue statistically significant
- Value of Adjusted R2 holds at 0.77

Run Partial F-Test

- Check if the new variables, as a group, are significant in explaining the outcome

```
Analysis of Variance Table

Model 1: prop_attn ~ year_f + company + quota + sustain + pct_rev_change +
    word_count2 + I(word_count2^2) + I(word_count2^3) + revenue_num2 +
    I(revenue_num2^2) + I(revenue_num2^3)
Model 2: prop_attn ~ year_f + company + quota + sustain + pct_rev_change
  Res.Df    RSS Df  Sum of Sq     F Pr(>F)
1    653 1.0544
2    659 1.0622 -6 -0.0078181 0.807 0.5646
```

- F statistic = 0.807
- Cannot reject the null hypothesis that effect relative to reduced model is zero

Conclusion

My revised model is no more useful in explaining the variation in the outcome variable than the original model