




Testing Turkish Democracy

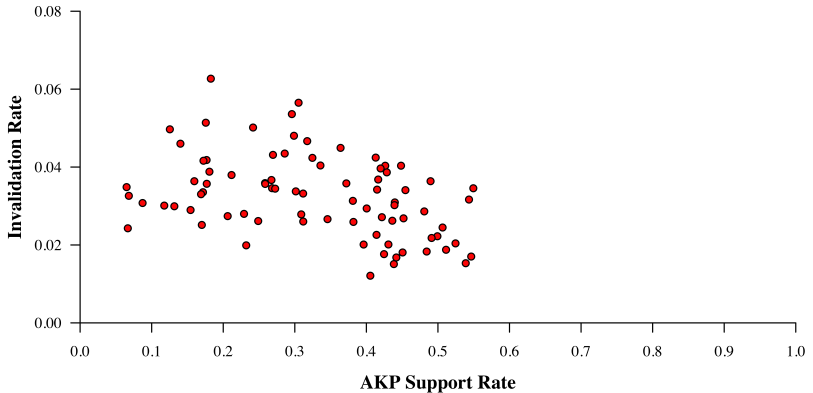
Using Vector Generalized Linear Models to
assess Kurdish democratic progress under
Erdogan

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Ole J. Forsberg
Assistant Professor of Mathematics - Statistics
Knox College, Galesburg, IL
ojforsberg@knox.edu

The Goal



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Free and Fair Election

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Electoral Democracy

What makes an election free and fair?

Electoral Democracy

Definitions

Electoral Democracy

- ▶ A means for the people (with equal political rights as citizens) to choose their political leaders in regular, meaningful, free and fair elections

Democracy Web (Comparative Studies in Freedom)

- ▶ The utilization of electoral processes to decide which citizens will be entrusted with the basic tasks of government. Its representative nature implies that all citizens will have been able to intervene in the political decisions by means of representatives elected by universal, free, equal, direct and secret suffrage. In short, the establishment of the principle 'one person, one vote'.

ACE (The Electoral Knowledge Network)

- ▶ A country cannot be truly democratic until its citizens have the opportunity to choose their representatives through elections that are free and fair.

USAID (Supporting Free and Fair Elections)

Electoral Democracy

Free and Fair Election

Free and Fair Election

- ▶ Among other requirements, a fair election ensures that each person's vote has the same probability of counting irrespective of who the person is or who the vote was cast for

Consequences

- ▶ The proportion of ballots invalidated in the electoral division is independent of the proportion of ballots cast for each candidate

Regression Methods

CLM to GLM to VGLM

Regression Methods

Classical Linear Model

- ▶ $\mathbf{Y} = \mathbf{XB} + \mathbf{E}$

- ▶ $\mathbf{Y} \sim \text{Normal}$ Conditional distribution (stochastic part)
- ▶ $\eta = \mathbf{XB}$ Linear predictor (deterministic part)
- ▶ $\mu = \eta$ Link function

- ▶ Fit using ordinary least squares
- ▶ Transformations to the dependent variable allows for modeling constrained responses

Regression Methods

Generalized Linear Model

▶ $\mathbf{Y} = \mathbf{XB} + \mathbf{E}$

- ▶ $\mathbf{Y} \sim \mathcal{F}$ Conditional distribution (stochastic part)
- ▶ $\eta = \mathbf{XB}$ Linear predictor (deterministic part)
- ▶ $\mu = g(\eta)$ Link function

- ▶ Fit using maximum likelihood*
- ▶ The probability distribution, \mathcal{F} , must be of exponential class

Regression Methods

Vector Generalized Linear Model

▶ $\mathbf{Y} = \mathbf{XB} + \mathbf{E}$

▶ $\mathbf{Y} \sim \mathcal{F}$ Conditional distribution (stochastic part)

▶ $\eta = \mathbf{XB}$ Linear predictor (deterministic part)

▶ $\mu = g(\eta)$ Link function

▶ Fit using maximum likelihood (IRLS, Fisher Scoring)

Erdoğan's Democratization

What is Erdoğan's Lasting Impact on the Turkish Electoral System?

Erdogan's Democratization

The 2007 Constitutional Referendum

The 2007 Constitutional Referendum

- ▶ Presidential election to be by popular vote.
- ▶ The term of office for the president is reduced from seven years to five.
- ▶ The president may stand for a second term.
- ▶ Parliamentary elections are to be held every four years (instead of five).
- ▶ The quorum of lawmakers needed for parliamentary decisions is reduced to 184.

Erdogan's Democratization

The 2010 Constitutional Referendum

The 2010 Constitutional Referendum

- ▶ Deputies remain in their posts until the end of their elected term.
- ▶ The number of members of the Constitutional Court raised from 11 to 17.
- ▶ The Parliament and the President elect and appoint members to the Constitutional Court.
- ▶ New court members are selected for 12-year terms (or until they reach the age of 65).

Erdogan's Democratization

The 2017 Constitutional Referendum

The 2017 Constitutional Referendum

- ▶ The number of seats in the Parliament is raised from 550 to 600.
- ▶ The age requirement to stand as a candidate in an election is lowered from 25 to 18.
- ▶ Individuals with relations to the military would be ineligible to run for election.
- ▶ Parliamentary terms are extended from four to five years.
- ▶ Parliamentary and presidential elections are held on the same day every five years, with presidential elections going to a run-off if no candidate wins a simple majority in the first round.
- ▶ In order to stand as a presidential candidate, an individual requires the endorsement of one or more parties that won 5% or more in the preceding parliamentary elections and 100,000 voters.
- ▶ The acts of the President are now subject to judicial review.

Analysis Results

Where does this lead us?

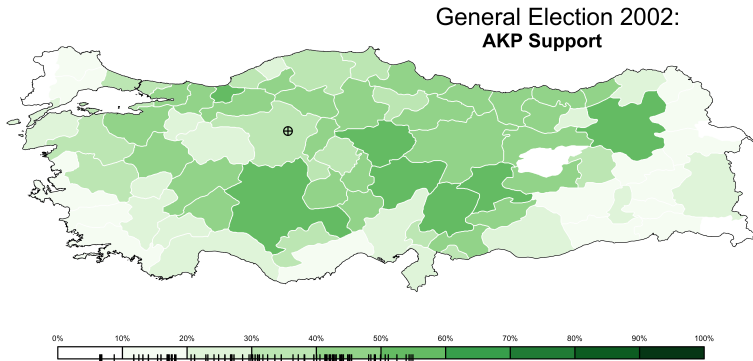
Results

Before Erdoğan's Reforms (2002)

	Min	Q1	Median	Q3	Max
AKP Support	0.0650	0.2116	0.3246	0.4363	0.5494
HDP Support	0.0090	0.0130	0.0310	0.1120	0.8370
Invalidation Rate	0.0121	0.0260	0.0330	0.0388	0.0627

Results

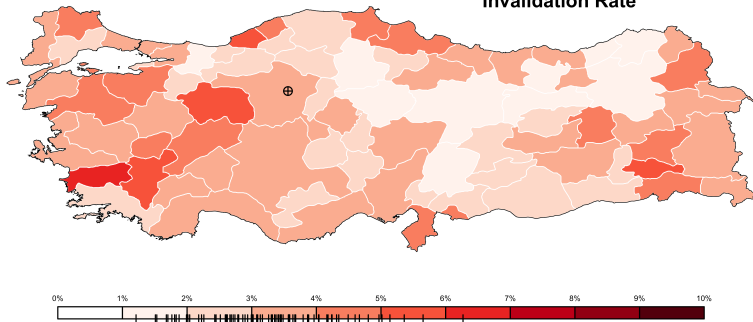
Before Erdoğan's Reforms (2002)



Results

Before Erdoğan's Reforms (2002)

General Election 2002:
Invalidation Rate



Results

Before Erdoğan's Reforms (2002)

Specifications for the Model

- | | |
|-----------------------------|--|
| ▶ Dependent variable: | Invalidation rate |
| ▶ Independent variable: | Support for AK Party (2002)
Support for HD Party (2015) |
| ▶ Link function: | logit |
| ▶ Conditional distribution: | Beta-Binomial |

Results

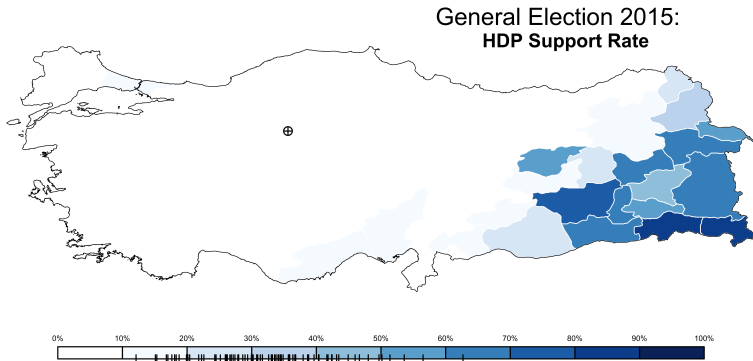
Before Erdoğan's Reforms (2002)

A Proxy for the Kurdish Voters

- ▶ Turkish census does not ask ethnicity
- ▶ The Democratic Party of the Peoples (HDP) platform is explicitly pro-Kurdish
- ▶ The party seeks to challenge the Turk-Kurd divide
- ▶ It is allied with the Kurdish Democratic Regions party
- ▶ Critics have accused the party of mainly representing the interests of the Kurdish minority in south-eastern Turkey, where the party polls the highest.
- ▶ The HDP participated in peace negotiations with the Turkish government on behalf of the Kurdistan Workers' Party (PKK) separatist militant organization.

Results

Before Erdoğan's Reforms (2002)



Results

Before Erdoğan's Reforms (2002)

Beta-Binomial Regression Results

▶ Beta-Binomial 1

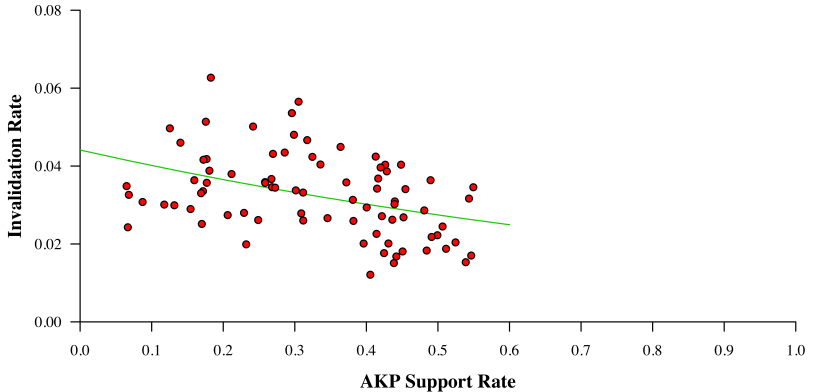
	Estimate	Std.Err	z-value	p-value
AKP Support	-0.9836	0.2448	-4.017	0.0000 ***

▶ Beta-Binomial 2

	Estimate	Std.Err	z-value	p-value
AKP Support	-1.1297	0.3030	-3.728	0.0002 ***
HDP Support	-0.0014	0.0017	-0.817	0.4140

Results

Before Erdoğan's Reforms (2002)



Results

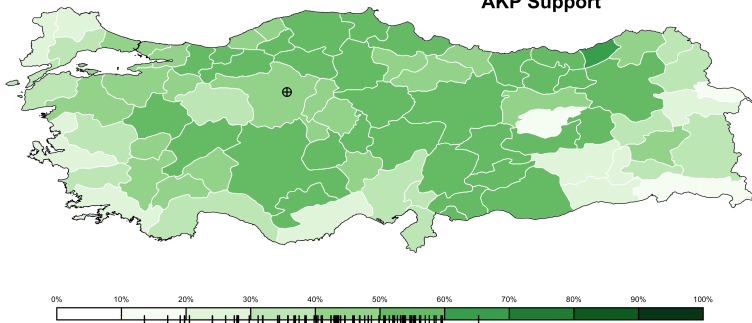
After Erdoğan's Reforms (2018)

	Min	Q1	Median	Q3	Max
AKP Support	0.1356	0.3579	0.4460	0.5371	0.6525
HDP Support	0.0090	0.0130	0.0310	0.1120	0.8370
Invalidation Rate	0.0149	0.0193	0.0226	0.0273	0.0461

Results

After Erdoğan's Reforms (2018)

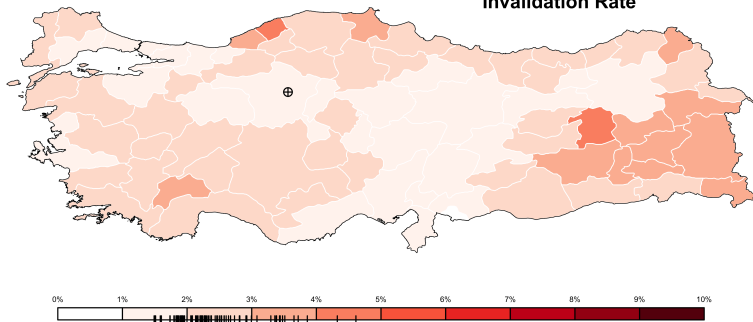
General Election 2018:
AKP Support



Results

After Erdoğan's Reforms (2018)

General Election 2018:
Invalidation Rate



Results

After Erdoğan's Reforms (2018)

Specifications for the Model

- ▶ Dependent variable: Invalidation rate
- ▶ Independent variable: Support for AK Party (2018)
Support for HD Party (2015)
- ▶ Link function: logit
- ▶ Conditional distribution: Beta-Binomial

Results

After Erdoğan's Reforms (2018)

Beta-Binomial Regression Results

► Beta-Binomial 1

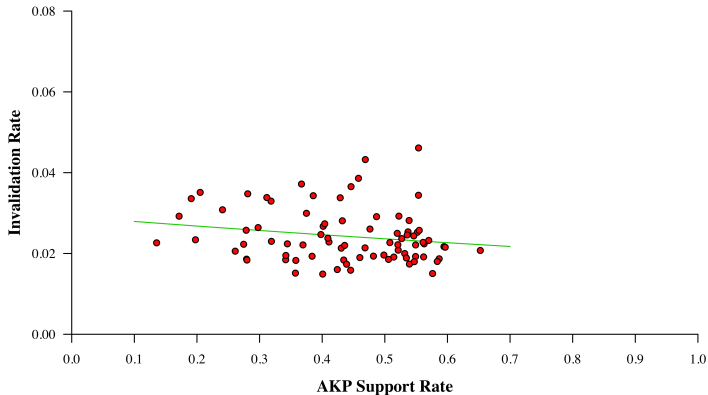
	Estimate	Std.Err	z-value	p-value
AKP Support	-0.4283	0.2379	-1.80	0.0718

► Beta-Binomial 2

	Estimate	Std.Err	z-value	p-value
AKP Support	0.448932	0.280260	1.602	0.1090
HDP Support	0.006977	0.001379	5.058	0.0000 ***

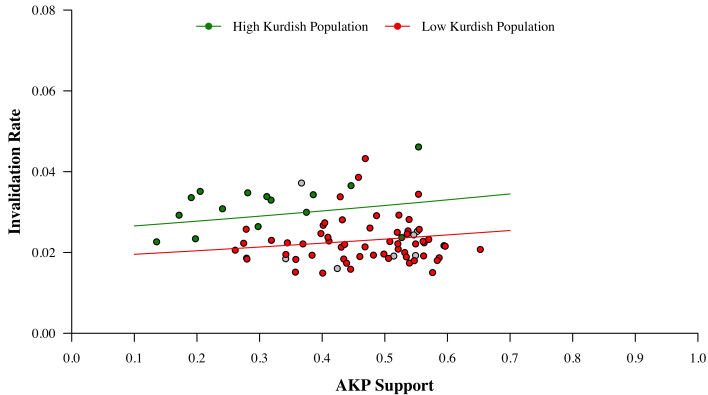
Results

After Erdogan's Reforms (2018)



Results

After Erdogan's Reforms (2018)



Discussion and Conclusion

What have we learned?

Discussion and Conclusion

Summary

Summary

- ▶ Electoral democracies have their citizens elect the leaders.
- ▶ A necessary condition for an election to be “free and fair” is to have everyone’s ballot have the same probability of being counted.
- ▶ When the votes are aggregated, a “free and fair” election will have the invalidation rate independent of the candidate support rate.
- ▶ As both variables are numeric, regression is appropriate for detecting a relationship between the invalidation rate and the candidate support rate.
- ▶ Ordinary least squares regression (OLM) requires the dependent variable to be conditionally Normal. This is not the case for our data.
- ▶ Binomial regression (GLM) is not appropriate because of the presence of overdispersion in the data (clumping).
- ▶ Beta-Binomial regression (VGLM) is more appropriate for modeling the relationship between the invalidation rate and the candidate support rate.

Discussion and Conclusion

Political Science Results

Political Science Results

- ▶ Before Erdoğan passed his reforms (2002), there was significant evidence of differential invalidation for both the general population as well as for the Kurdish population.
- ▶ After Erdoğan passed his reforms (2018), there was no longer significant evidence of differential invalidation in the country, as a whole.
- ▶ However, evidence remained of unfairness against the Kurds in Turkey

References and Further Reading

Electoral Forensics

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- ▶ Ekanem, U-O I., and Forsberg, O. J. (2018). “An Analysis of the 2015 Nigerian Presidential Election.” *PURSUE*. 1(2): 5–20.
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Vector Generalized Linear Models

- ▶ Yee, T. W., and Stephenson, A. G. (2007) “Vector generalized linear and additive extreme value models.” *Extremes* 10(1): 1–19.
- ▶ Yee, T. W. (2016). *Vector Generalized Linear and Additive Models: With an implementation in R*. New York: Springer.


Data

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