

INTRODUCTION

It is necessary to test the reality of a political statement which is widely used in the forestry community in Turkey. It is aimed to test the general belief that forest fires are increasing during election periods. In this regard, annual forest fire and burning forest area amount data were collected in Turkey from 1945 to 2016 and tested by logistic regression. As a result, the election year was found to be effective on the burning forest area. In terms of social forestry, new results and results with political effects were found.



Do community pressures, one of the most important causes of fire, produce different fire consequences during election years?

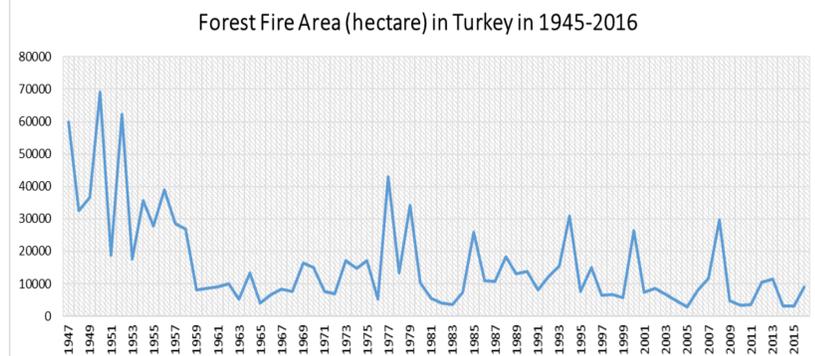


DATA AND METHODOLOGY

The data were compiled from the series of development plans of the General Directorate of Forestry in Turkey. As Turkey's multi-party election years began in 1945, the analysis data covers the years 1945-2016.

In the analysis of the data; Descriptive statistics are presented with mean, standard deviation. The t test was used in comparison of two phase groups. According to the general and local election periods, the number of fire and the risk factors included in the burning areas are determined with the aim of applying logistic regression (binary).

P values less than 0.05 were considered statistically significant in the study. Analyses were made with SPSS 22.0 package program.



RESULTS

Local Election Affects

Group Statistics					
Local Election (0 means haven't, 1 means have)		N	Mean	Std. Deviation	Std. Error Mean
Fire Number	0	54	1388,33	802,489	109,205
	1	18	1360,94	622,494	146,723
Fire Area Hectare	0	54	18367,94	24166,852	3288,692
	1	18	22820,22	30836,266	7268,177

Between 1945 and 2016, the number of fires in the period covering 71 years was found to be no different from the *local election* year and the non-election years ($t = -0,13, p > 0,05$). While an average of 1361 fires were observed during local elections, an average of 1388 fires were observed during non-election years.

Between 1945 and 2016, burning areas (hectares) during the 71-year period were found to be no different from those in the years other than local elections and no local elections ($t = -0,63 p > 0,05$). It was found that 22,820 hectares of forest burned in the years of local elections and 18,367 hectares of forest were burned in the years other than the election year.

Parlemantary Election Affects

Group Statistics					
Parlemantary Election (0 means haven't, 1 means have)		N	Mean	Std. Deviation	Std. Error Mean
Fire Number	0	58	1359,14	764,680	100,407
	1	14	1474,07	746,792	199,588
Fire Area Hectare	0	58	17898,62	23486,206	3083,890
	1	14	26036,64	34192,025	9138,203

Between 1945 and 2016, the number of fires in the period covering 71 years was found to be no different from the *parlemantary election* year and the non-election years ($t = -0,51, p > 0,05$). While an average of 1474 fires were observed during *parlemantary* elections, an average of 1359 fires were observed during non-election years.

Between 1945 and 2016, burning areas (hectares) during the 71-year period were found to be no different from those in the years other than *parlemantary* elections and no local elections ($t = -1,06 p > 0,05$). It was found that 26,036 hectares of forest burned in the years of *parlemantary* elections and 17,898 hectares of forest were burned in the years other than the election year.

MODEL (Local Election)	Wald	p	Odds Ratio	%95 Confidence Interval of the Difference	
				Lower	Upper
Fire Area Hectare	9,2	0,01	1,8	1,5	2,1
Model Chi-square: 22,40; -2LL=13,47; sd: 2; n=71; p<0,001; Success rate = %80,20					
Cox & Snell R ² = 0,222; Nagelkerke R ² = 0,321					

Only the size of the burned areas was set in the Logistic Regression model, so the number of fire was not included in the model because it could not be associated with local election periods. Variables of burned areas were found as independent risk factors affecting local election periods. During the election periods of the burned areas, 1,80 (95% CI 1,50-2,10) times increase and the overall success rate of the model is 82%.

In short, fire areas (1.8 times) are expected to increase in the local elections period, and the ability to explain the model was found to be approximately 32% (R² = 0.321).

MODEL (Parlemantary Election)	Wald	p	Odds Ratio	%95 Confidence Interval of the Difference	
				Lower	Upper
Fire Number	6,6	0	1,35	1,15	1,55
Fire Area Hectare	8,9	0,01	2,9	2	3,8
Model Chi-square: 36,44; -2LL=55,25; sd: 2; n=71; p<0,001; Success rate = %92,50					
Cox & Snell R ² = 0,29; Nagelkerke R ² = 0,421					

Variations in the number of fire and fire areas were found to be independent risk factors affecting the *parlemantary* election period. 1.35 (95% CI, 1.15-1.55) times increase in the number of fire in the *parlemantary* election periods, 2.9 (95% CI 2-3.8) times in the fire areas during the *parlemantary* election periods and the overall success rate of the model is 92,5% respectively.

In short, it is expected that the number of fire (1,35 times) and burning areas (2,9 times) increase in the *parlemantary* election period, and the explanation ability of the model is about 42% (R² = 0,421).

CONCLUSIONS

During the local and parliamentary elections it was examined whether there is a relationship between the number of fire and burning forest area. different models were established for both election periods.

For the researchers who develop the forest fires model, the effect of the year of the election can be considered as a new independent variable.

A relationship has been assigned that can change from country to country. it is likely that similar results will be obtained in countries where social oppression is active in forest fires.



REFERENCES

- <https://www.ogm.gov.tr/lang/en/SitePages/OGM/OGMDefault.aspx>
- Third Five-Year Development Plan, Forestry Specialization Commission Report, 1972, Ankara, Publication No: DPT:1174 - ÖİK:146
- FAO Meeting on Public Policies Affecting Forest Fires, ISSN: 0258-6150, FAO Forestry Paper 138.
- Categorical Data Analysis, Second Edition, University of Florida, Gainesville, Florida, USA, ISBN: 9780471249689