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The influence of Internet on politics: the impact of Facebook and the Internet penetration on elections in Taiwan

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ABSTRACT

Previous research on elections indicates that the rise of social media has had a positive impact on political participation and political interest, resulting in more voters going to the polls. However, there has been no research on the impact that social media have on bringing about a change in government. This research investigates the impact that the Internet and the Chinese version of Facebook have had on election results in Taiwan from 2001 to 2016. The findings indicate that after the Chinese version of Facebook appeared in 2008, the higher the penetration rate of the Internet in the Taiwan region, the more likely that political power will change hands and the ruling party will lose an election.

I. Introduction

Comparing the development of democracy of Western countries to that of Asian countries, elections in Taiwan, Japan and Singapore all exhibit a similar phenomenon: there is a long-ruling political party, but because it has not produced good results during the time that it is in power, the rise of social media has caused its popular support to drop, even to the point of losing political power. The appearance of social media has not only allowed adherents to play a more active role, quite unlike the unidirectional information dissemination of the traditional media, it also has been able to change the issues under discussion in an election and the way media reported political news (Metzgar and Maruggi 2009). However, there has not been any research on the impact of social media in effecting a change in government, primarily because social media are numerous, making it difficult to quantify the impact of each of them (Hanson et al. 2010).

This research investigates the impact of the Internet and social media on election results. According to the data from Taiwan's Institute for Information Industry, 76.22% of the population of Taiwan were Internet users in 2012, and 58% accessed Facebook when online. Facebook survey report in 2015 also disclosures similar outcome: more than three-quarter of the population in Taiwan use Facebook to communicate and deliver information each day through computer and cell phone. The fact that Facebook is overwhelmingly the most popular form of social media in Taiwan will allow us to better gauge the impact of social media on election results. For this, we compared the data of 25 counties', cities' and municipalities' election results in Taiwan over the period of 2001–2016.

II. Literature

Seymour-Ure (1974), Gentzkow (2006) and Gerber, Karlan, and Bergan (2009) have proven that different media types cause different effects on political elections. Enikolopov, Petrova, and Zhuravskaya (2011) discovered when comparing the 1999 Russian parliamentary election results that the governing party lost votes in areas with independent TV stations and that voter turnout also dropped in these areas. Mourao (2013) showed that European voters are more sensitive to television and radio coverage than they are to printed press coverage of negative economic news when compared with non-European electorates.

At present, there is not much research on the impact of social media on elections. Valenzuela, Park, and Kee (2009a) found that the more voters got their information from blogs, the more likely they were to discuss politics online and vote. Valenzuela, Park, and Kee (2009b) pointed out that there was a direct correlation between Facebook users and political participation. Aparaschivei (2011) pointed out, based on research from the Romanian presidential election, that social media made it possible for the Internet to become a new medium for political campaign and fundraising.

III. Methodology

This article will apply a Logit model to carry out empirical analysis. The empirical model is as follows:

$$\text{Election result}_i = \beta_0 + \beta_1 \text{Internet penetration} \\ + \beta_2 \text{Facebook} + \beta_3 \text{Facebook} \\ * \text{Internet penetration} \\ + \gamma X_i + \varepsilon_i$$

(1)

Formula (1) describes the influence of each variable on election result. Considering that Kuomintang (Nationalist Party) has long ruled Taiwan since 1945, we will use two binary variables reflecting election results as the dependent variables: whether the election contributed to a change in governing party (variable Substitute) and whether Kuomintang lost the election (variable Party lose).

In terms of explanatory variables, we will look at the level of Internet penetration and the impact of social media for that year over all regions. Facebook released simplified and traditional Chinese versions on 20 June 2008 for users in mainland China, Taiwan and Hong Kong; we will set a dummy

variable to capture whether the Chinese version of Facebook had been released at the time of the election results. In addition, in controlling the level of Internet penetration and social media, we will set a Facebook*Internet variable. This variable will gauge the mutual effects that social media and the Internet have on Taiwan's election results.

IV. Database and empirical results

All of the election data used in this article come from Taiwan's electoral database (voting statistics from 2001 to 2016 over 25 local counties cities, and municipal elections as well as for the presidential election in each region). The explanatory variables such as regional economic and financial welfare expenditure, population and level of Internet penetration come from National Statistics, Republic of China (Taiwan) (see supplementary data). Table 1 shows the descriptive statistics for our variable.

The empirical results for average marginal effects and odds ratio are organized in Table 2. Columns (1), (2), (5) and (6) are the benchmark models; Columns (1)–(4) indicate the higher of educational level, economic and financial expenditure and the unemployment decrease the probability that a change of government occurs. Columns (1) and (2) find that the appearance of Chinese version of Facebook increases the probability of government change. However, in controlling the level of Internet penetration and social media, the Facebook*Internet variable showed the significant positive effects on the change in government. For example, the variables in Column (4) indicate that, given other variable, the mutual effects of Facebook*Internet will increase the rate of government change by 4.7%.

Table 1. Descriptive statistics.

Variable	Definition	Obs.	Mean	SD	Min	Max
Substitute	Change in governing = 1 (dummy)	306	0.350	0.478	0	1
Party lose	Election loss for long-term governing party (Kuomintang) = 1 (dummy)	306	0.441	0.497	0	1
Educational level	Proportion of people with an educational level below junior high school (per cent)	301	38.390	10.816	6.810	63.230
Unemployment	The unemployment rate for the previous year (per cent)	258	4.094	0.982	0.300	5.900
Economic expenditure	The proportion of financial expenditure spent on economic development for this county, city or municipality (per cent)	306	18.728	8.065	6.770	55.790
Social welfare expenditure	The proportion of financial expenditure spent on social welfare for this county, city or municipality (per cent)	306	4.065	2.514	0.560	13.820
Local election	Local election = 1 (dummy)	306	0.693	0.462	0	1
Internet penetration	The rate for Internet penetration in this county, city or municipality for previous year (per cent)	306	50.597	18.348	7.350	86.250
Facebook	The appearance of Chinese language version of Facebook = 1 (dummy)	306	0.431	0.496	0	1

Table 2. Results.

	Substitute				Party lose			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Average marginal effects	Odds ratio	Average marginal effects	Odds ratio	Average marginal effects	Odds ratio	Average marginal effects	Odds ratio
Educational level	−0.004 (0.005)	0.980	−0.006 (0.005)	0.972	0.006 (0.005)	1.028	0.003 (0.005)	1.013
Unemployment	−0.056 (0.042)	0.767	−0.015 (0.051)	0.929	0.048 (0.043)	1.247	0.143*** (0.050)	2.079***
Economic expenditure	−0.009 (0.006)	0.957	−0.006 (0.006)	0.969	−0.007 (0.006)	0.968	−0.001 (0.006)	0.997
Social welfare expenditure	−0.007 (0.014)	0.968	0.001 (0.015)	1.004	−0.005 (0.136)	0.976	0.012 (0.014)	1.066
Local election	−0.035 (0.059)	0.848	−0.006 (0.059)	0.969	−0.037 (0.060)	0.842	0.014 (0.058)	1.075
Internet penetration	−0.005 (0.004)	0.978	−0.013*** (0.005)	0.936***	−0.002 (0.004)	0.990	−0.015*** (0.005)	0.926***
Facebook	0.071* (0.043)	1.396*	−0.679** (0.268)	0.036**	0.320*** (0.004)	4.397***	−0.631** (0.258)	0.039**
Facebook*Internet penetration			0.009** (0.004)	1.047**			0.010** (0.005)	1.051**
Year			0.009** (0.004)	1.213**			0.075*** (0.017)	1.468***
N	258		258		258		258	
Log likelihood	−159.031		−153.733		−160.438		−147.314	
Pseudo R^2	0.014		0.047		0.089		0.163	

SEs in parentheses.
*$p < .1$, **$p < 0.05$, ***$p < 0.01$.

The dependent variable for Columns (5)–(8) is whether the long-ruling party (Kuomintang) lost the election. Column (5) and Column (6) indicate that the variable Facebook bring a significant effect on Kuomintang's loss. One finds that the unemployment and the Facebook*Internet variables have an apparently positive impact on Kuomintang's defeat in Columns (7) and (8). These results indicate social media has an influence on political power change. Given other variables, the mutual effects of Facebook*Internet will increase the rate of governing party defeat by 5.1%. In controlling variables such as the economy, population and social welfare, why would the Chinese version of Facebook and increased Internet penetration lead to a higher probability for change of government and the defeat of long-ruling party? We believe that the main reason has to do with Facebook breaking the traditional media's mode of unidirectional broadcasting (Metzgar and Maruggi 2009). The appearance of Facebook has provided the public with another platform for expressing their political opinions and for political participation. Average citizens on some level can play the role of a reporter providing political information, diversifying political views and lowering public support for a specific political party, thus increasing the probability of a change in government and the defeat of a long-ruling party.

V. Conclusion

Because existing research has not studied the effect of social media on the change of government, this article has applied election statistics from 2001 to 2016 of Taiwan's various administrative units such as counties, cities and municipalities, looking closely at the effects that the Internet and the Chinese version of Facebook have had in a change in government or the defeat of the long-ruling political party (Kuomintang). We conclude that after controlling the local Internet penetration rates and the release of the Chinese version of Facebook, the cross-multiplication effect of the two variables indicates an increase in the rate of political change in local Taiwanese elections; in addition, the release of Chinese Facebook as well as an increase in Internet penetration has, on the whole, increased the probability of a long-ruling political party election defeat.

Further studies will look at the effect of social media on specific voting groups, for example, social media's influence on political participation and voting trends of younger and older generations. Furthermore, in the future, we would also like to extend our analysis and discussion to the media's market structure.

Disclosure statement

No potential conflict of interest was reported by the authors.

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