

# Kinship ties in politics and response to extreme weather shocks

Charles Siriban

University of Queensland  
ACE 2023

July 10, 2023

## Motivation

- ▶ Presence of politicians with kinship ties simultaneously serving public office in some democracies
  - ▶ Kinship ties include family ties or ties created via marriage
- ▶ Few papers study the policy outcomes of having members of the same clan simultaneously serve in politics

# Motivation

- ▶ Presence of politicians with kinship ties simultaneously serving public office in some democracies
  - ▶ Kinship ties include family ties or ties created via marriage
- ▶ Few papers study the policy outcomes of having members of the same clan simultaneously serve in politics
  - ▶ More similar policy preferences  $\Rightarrow$  better policy coordination
  - ▶ Fewer checks and balances  $\Rightarrow$  misallocation of fiscal resources

# Motivation

- ▶ Presence of politicians with kinship ties simultaneously serving public office in some democracies
  - ▶ Kinship ties include family ties or ties created via marriage
- ▶ Few papers study the policy outcomes of having members of the same clan simultaneously serve in politics
  - ▶ More similar policy preferences  $\Rightarrow$  better policy coordination
  - ▶ Fewer checks and balances  $\Rightarrow$  misallocation of fiscal resources
- ▶ [Dulay and Go \(2021\)](#): focus on Philippine mayors with kinship ties to other local officials
  - ▶ Mayors with kinship ties spend more. But no difference in poverty incidence

## Research question

Do politicians with kinship ties respond differently to an extreme weather shock?

- ▶ Focus on typhoons: substantial short-run negative impact on household income ([Anttila-Hughes and Hsiang, 2013](#); [Franklin and Labonne, 2019](#)) and local economic activity ([Strobl, 2019](#))
- ▶ Investigate this in the context of typhoon shocks in the Philippines
  - ▶ Focus on casualties (deaths or missing) associated with each typhoon

# The case of the Philippines

- ▶ One of the countries most frequently affected by natural disasters ([Wallemacq and Below, 2018](#)) [Typhoon paths](#)
  - ▶ Average annual damage from natural disasters: US\$1.2 billion from 2000 to 2016 ([Jha et al., 2018](#))
- ▶ Important role played by local governments in responding to extreme weather shocks [Disaster management in the Philippines](#)
- ▶ Widespread presence of concurrently elected politicians with kinship ties [Kinship ties](#)
  - ▶ Focus on kinship ties among top Philippine provincial officials, i.e., governors and their kinship ties with congresspersons

# Data

- ▶ **Weather shock:** estimated provincial-level typhoon wind intensity ([Franklin and Labonne, 2019](#))
  - ▶ 149 typhoons (2005 to 2015)
  - ▶ Calculated using the Best Track Data of the Joint Typhoon Warning Center (JTWC)
  - ▶ Weighted average of maximum wind speed experienced in component municipalities
- ▶ **Effect of shock:** Casualties data from NDRRMC (provincial-level per typhoon)
- ▶ **Kinship ties:** last name and middle name matching ([Querubin, 2016](#); [Mendoza et al., 2016](#); [Bragan,ca et al., 2015](#); [Atkinson et al., 2015](#))
  - ▶ Match governor and district representatives per province
  - ▶ Data on election results covering four electoral cycles (2004, 2007, 2010, 2013)

## Summary statistics

	No. of obs	Mean	Std dev.	Min.	Max.
Typhoon wind speed (km per hour)	11886	9.75	29.5	0.0026	281.9
No. of deaths	11886	1.04	51.3	0	5402
No. of missing	11886	0.30	11.9	0	931
Kinship ties	11886	0.41	0.49	0	1

Spatial variation kinship ties



## Empirical strategy

$$\begin{aligned} \text{idm}_{pt} = & \alpha_1 K_{pt} + \alpha_2 \log(s_{pt}) + \alpha_3 \text{Pre-election}_{pt} + \alpha_4 K_{pt} \times \log(s_{pt}) + \\ & \alpha_5 K_{pt} \times \text{Pre-election}_{pt} + \alpha_6 \log(s_{pt}) \times \text{Pre-election}_{pt} + \\ & \alpha_7 K_{pt} \times \log(s_{pt}) \times \text{Pre-election}_{pt} + \delta X_{pt} + \theta_p + \gamma_t + E_{pt} \end{aligned}$$

- ▶  $\text{idm}_{pt}$ : inverse hyperbolic sine of the total number of deaths or missing in province  $p$  due to typhoon  $t$
- ▶  $K_{pt}$  whether governor has kinship ties to a congressperson
- ▶  $s_{pt}$ : typhoon severity measure
- ▶  $\text{Pre-election}_{pt}$ : whether typhoon happened close to the next election
- ▶  $X_{pt}$ : provincial population and governor-specific attributes
- ▶  $\gamma_p, \gamma_t$ : province and typhoon fixed effects

## Empirical strategy

$$\text{idm}_{pt} = \alpha_1 K_{pt} + \alpha_2 \log(s_{pt}) + \alpha_3 \text{Pre-election}_{pt} + \alpha_4 K_{pt} \times \log(s_{pt}) + \\ \alpha_5 K_{pt} \times \text{Pre-election}_{pt} + \alpha_6 \log(s_{pt}) \times \text{Pre-election}_{pt} + \\ \alpha_7 K_{pt} \times \log(s_{pt}) \times \text{Pre-election}_{pt} + \delta X_{pt} + \theta_p + \gamma_t + E_{pt}$$

- ▶  $\alpha_4 + \alpha_7 < 0$  if governors with kinship ties more effectively mitigate close to election typhoon shocks
- ▶  $\alpha_4 < 0$  if governors with kinship ties more effectively mitigate other typhoon shocks

# Casualties increase less rapidly when governor has kinship ties...

	Casualties (IHS)	Casualties (IHS)
Log Typhoon Wind Speed	0.098*** (0.010)	0.104*** (0.010)
With kinship ties	-0.016 (0.014)	-0.011 (0.019)
With kinship ties×Log Typhoon Wind Speed ( $\alpha_4$ )	-0.001 (0.012)	-0.002 (0.011)
Close to election	-0.070 (0.101)	0.853 (0.989)
Close to election×Log Typhoon Wind Speed	0.026* (0.014)	0.025* (0.013)
With kinship ties×Close to election	-0.028 (0.020)	-0.027 (0.020)
With kinship ties×Close to election ×Log Typhoon Wind Speed ( $\alpha_7$ )	-0.036** (0.015)	-0.035** (0.015)
Estimate of $\alpha_4 + \alpha_7$	-0.036	-0.037
p-value ( $H_0: \alpha_4 + \alpha_7=0$ )	0.008	0.005
Observations	11,886	11,886
R-squared	0.174	0.201
Mean dep.var.	0.104	0.104
Provincial and politician controls	Y	Y
Province FE	N	Y
Typhoon FE	N	Y

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

## ... but only for close to election typhoons

	Casualties (IHS)	Casualties (IHS)
Log Typhoon Wind Speed	0.098*** (0.010)	0.104*** (0.010)
With kinship ties	-0.016 (0.014)	-0.011 (0.019)
With kinship ties×Log Typhoon Wind Speed ( $\alpha_4$ )	-0.001 (0.012)	-0.002 (0.011)
Close to election	-0.070 (0.101)	0.853 (0.989)
Close to election×Log Typhoon Wind Speed	0.026* (0.014)	0.025* (0.013)
With kinship ties×Close to election	-0.028 (0.020)	-0.027 (0.020)
With kinship ties×Close to election ×Log Typhoon Wind Speed ( $\alpha_7$ )	-0.036** (0.015)	-0.035** (0.015)
Estimate of $\alpha_4 + \alpha_7$	-0.036	-0.037
p-value ( $H_0: \alpha_4 + \alpha_7 = 0$ )	0.008	0.005
Observations	11,886	11,886
R-squared	0.174	0.201
Mean dep.var.	0.104	0.104
Provincial and politician controls	Y	Y
Province FE	N	Y
Typhoon FE	N	Y

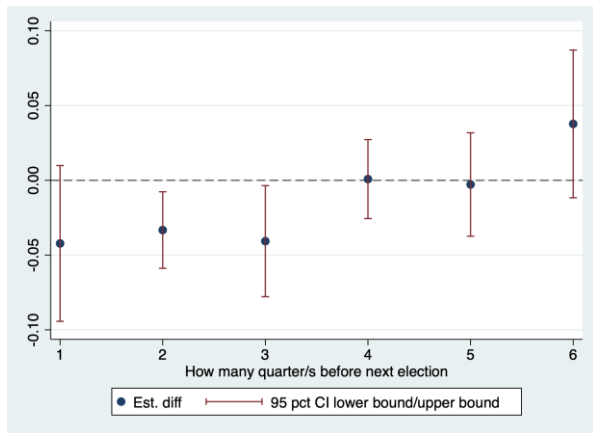
Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

# No difference for other typhoons

	Casualties (IHS)	Casualties (IHS)
Log Typhoon Wind Speed	0.098*** (0.010)	0.104*** (0.010)
With kinship ties	-0.016 (0.014)	-0.011 (0.019)
With kinship ties×Log Typhoon Wind Speed ( $\alpha_4$ )	-0.001 (0.012)	-0.002 (0.011)
Close to election	-0.070 (0.101)	0.853 (0.989)
Close to election×Log Typhoon Wind Speed	0.026* (0.014)	0.025* (0.013)
With kinship ties×Close to election	-0.028 (0.020)	-0.027 (0.020)
With kinship ties×Close to election ×Log Typhoon Wind Speed ( $\alpha_7$ )	-0.036** (0.015)	-0.035** (0.015)
Estimate of $\alpha_4 + \alpha_7$	-0.036	-0.037
p-value ( $H_0: \alpha_4 + \alpha_7=0$ )	0.008	0.005
Observations	11,886	11,886
R-squared	0.174	0.201
Mean dep.var.	0.104	0.104
Provincial and politician controls	Y	Y
Province FE	N	Y
Typhoon FE	N	Y

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

## Same results when using an alternative definition of proximity to the next election



Notes: The figure displays the estimates of  $\alpha_4 + \alpha_{7i}$  and their associated 95 percent confidence intervals.

## Mechanisms: preference alignment

- ▶ Lack of ideology-based parties  $\Rightarrow$  politicians jump parties
- ▶ Political clans are more stable organizations than parties ([Hutchcroft, 2012](#); [Lange, 2010](#); [Dulay and Go, 2021](#))
- ▶ Ideally, can be measured by a congressperson's assistance to the governor during the typhoon shock
  - ▶ No information on national projects initiated by congresspersons and other measures
  - ▶ Follow [Dulay and Go \(2021\)](#) and use the likelihood that a congressperson challenges an incumbent governor for re-election

## Mechanisms: preference alignment

Estimate using district congresspersons from 2004 to 2013:

$$\text{Cand.for gov}_{dp,t+3} = \gamma K_{dpt} + \delta X_{pt} + \kappa_p + \kappa_t + u_{pt}$$

- ▶ Cand.for gov<sub>dp,t+3</sub>: whether congressperson representing district  $d$  runs against the governor during the next election ( $t + 3$ )
- ▶  $K_{pt}$  whether congressperson has kinship ties to the governor
- ▶  $X_{pt}$  : provincial population and governor-specific attributes
- ▶  $\kappa_p, \kappa_t$  : province and electoral cycle fixed effects
- ▶ Coefficient of interest:  $\gamma < 0$  if there is greater preference alignment for cong. and gov. with kinship ties



## Congressperson with kinship ties is less likely to run against the governor

	(1)	(2)	(3)	(4)	(5)
	Ran vs. gov	Ran vs. gov	Ran vs. gov	Ran vs. gov	Selection eq.
With kinship ties	-0.069*** (0.011)	-0.068*** (0.020)	-0.066*** (0.021)	-0.066*** (0.019)	0.199 (0.342)
Governor is on his/her last term					-15.116*** (0.777)
Observations	482	482	482	726	726
R-squared	0.014	0.139	0.152		
Province FE	N	Y	Y	Y	Y
Election year FE	N	Y	Y	Y	Y
Provincial and politician controls	N	N	Y	Y	Y
Heckman selection model	N	N	N	Y	Y
Mean dep.var.	0.056	0.056	0.056		

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

## Mechanism: policy differences

- ▶ Governors with kinship ties may spend more on disaster response and preparedness than other governors but only when close to election
- ▶ Use the following estimating equation:

$$Policy_{pt} = \beta_0 + \beta_1 K_{p,t-1} + \beta_2 Electyear_{pt} + \beta_3 K_{p,t-1} \times \\ Electyear_{pt} + \beta X_{pt} + \beta_p + \beta_t + u_{pt}$$

- ▶  $Policy_{pt}$ : policy variable on year  $t$ 
    - ▶ provincial spending; spending on social services; spending on economic services
  - ▶  $K_{p,t-1}$  whether governor on year  $t - 1$  has kinship ties to a congressperson
  - ▶  $Electyear_{pt}$ : whether year  $t$  is an election year
  - ▶  $\beta_p, \beta_t$ : province and year fixed effects
- ▶ Coefficient of interest:  $\beta_3$

## No evidence that governors with kinship ties spend more during election years

VARIABLES	(1) Tot. exp.	(2) Social services	(3) Econ services
With kinship ties	-0.012 (0.032)	0.022 (0.138)	-0.065 (0.080)
Election year	0.776*** (0.281)	1.889 (1.513)	1.381 (0.857)
With kinship ties × Election year	0.014 (0.029)	-0.029 (0.081)	0.013 (0.059)
Observations	876	876	876
R-squared	0.932	0.707	0.771
Province FE	Y	Y	Y
Election year FE	Y	Y	Y
Provincial and politician controls	Y	Y	Y
Mean dep.var.	7.234	3.193	5.464

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

## Results are robust to...

- ▶ controlling for a province's recent typhoon experience  
[recent typhoon](#)
- ▶ controlling for additional governor characteristics [add'l gov](#)
- ▶ using casualty measures (deaths and missing) separately  
[deaths and missing](#)
- ▶ using maximum wind speed experienced in the province [max ws](#)
- ▶ restricting the sample to typhoons within 500 km or less of the Philippines [500km](#)
- ▶ excluding provinces with independent cities [ind cities](#)

## Related Literature

- ▶ Link between political alliances and policymaking ([Solé-Ollé and Sorribas-Navarro, 2008](#); [Brollo and Nannicini, 2012](#); [Bracco et al., 2015](#); [Atkinson et al., 2015](#))
  - ▶ Focus on non-partisan political ties
  - ▶ Research explores the effect of kinship ties in a least-likely scenario-natural disaster response
- ▶ Economic development implications of dynastic politics ([Mendoza et al., 2012](#); [Asako et al., 2015](#); [Bragança et al., 2015](#); [George and Ponattu, 2018](#))
  - ▶ Investigate the dynamics of a different type of dynastic politics
  - ▶ Focus on a more short-term outcome
- ▶ Role of kinship ties on an individual's electoral prospects and labor market outcomes([Cruz et al., 2017](#); [Querubin, 2016](#); [Fafchamps and Labonne, 2017](#))
  - ▶ Having an ally in the national government helps a local politician respond to disaster shocks

## Conclusion

- ▶ Provinces whose governor has kinship ties with a congressperson experience a smaller increase in casualties when typhoon severity increases
  - ▶ Observed only for typhoons close to the next election
- ▶ Suggestive evidence: politicians with kinship ties have greater policy preference alignment
- ▶ Future extension will benefit from the presence of more disaggregated information on disaster preparedness and relief spending
  - ▶ Voters may be myopic and reward politicians more for relief spending ([Healy and Malhotra, 2009](#))
  - ▶ Nature of post-disaster spending and recovery trajectory in areas governed by politicians with and without kinship ties

# Bibliography

- Anttila-Hughes, J. and Hsiang, S. (2013). Destruction, disinvestment, and death: Economic and human losses following environmental disaster. *Available at SSRN 2220501*.
- Asako, Y., Iida, T., Matsubayashi, T., and Ueda, M. (2015). Dynastic politicians: Theory and evidence from Japan. *Japanese Journal of Political Science*, 16(1):5–32.
- Atkinson, J., Hicken, A., and Ravanilla, N. (2015). Pork & typhoons: The influence of political connections on disaster response. In Mendoza, R. U., Beja, E. L., Teehankee, J. C., Vin'a, A. G. L., and Villamejor-Mendoza, M. F., editors, *Building Inclusive Democracies in ASEAN*, pages 74–96. Anvil, Manila.
- Bracco, E., Lockwood, B., Porcelli, F., and Redoano, M. (2015). Intergovernmental grants as signals and the alignment effect: Theory and evidence. *Journal of public economics*, 123:78–91.
- Bragan,ca, A., Ferraz, C., and Rios, J. (2015). Political dynasties and the quality of government. *Unpublished manuscript*.
- Brollo, F. and Nannicini, T. (2012). Tying your enemy's hands in close races: the politics of federal transfers in Brazil. *American Political Science Review*, 106(4):742–761.
- Cruz, C., Labonne, J., and Querubin, P. (2017). Politician family networks and electoral outcomes: Evidence from the Philippines. *American Economic Review*, 107(10):3006–37.
- Dulay, D. and Go, L. (2021). When running for office runs in the family: Horizontal dynasties, policy, and development in the Philippines. *Comparative Political Studies*, pages 1–40.
- Fafchamps, M. and Labonne, J. (2017). Do politicians' relatives get better jobs? Evidence from municipal elections. *The Journal of Law, Economics, and Organization*, 33(2):268–300.
- Franklin, S. and Labonne, J. (2019). Economic shocks and labor market flexibility. *Journal of Human Resources*, 54(1):171–199.
- George, S. E. and Ponattu, D. (2018). Like father, like son? The effect of political dynasties on economic development. Technical report, Working Paper.
- Healy, A. and Malhotra, N. (2009). Myopic voters and natural disaster policy. *American Political Science Review*, 103(3):387–406.
- Hutchcroft, P. D. (2012). Re-slicing the pie of patronage: the politics of the internal revenue allotment in the Philippines, 1991–2010. *Philippine Review of Economics*, 49(1):109–134.
- Jha, S., Martinez Jr, A., Quising, P., Ardaniel, Z., and Wang, L. (2018). Natural disasters, public spending, and creative destruction: a case study of the Philippines.

- Lange, A. (2010). Elites in local development in the philippines. *Development and Change*, 41(1):53–76.
- Mendoza, R. U., Beja Jr, E. L., Venida, V. S., and Yap, D. B. (2012). Inequality in democracy: Insights from an empirical analysis of political dynasties in the 15th philippine congress. *Philippine Political Science Journal*, 33(2):132–145.
- Mendoza, R. U., Beja Jr, E. L., Venida, V. S., and Yap, D. B. (2016). Political dynasties and poverty: measurement and evidence of linkages in the philippines. *Oxford Development Studies*, 44(2):189–201.
- Querubin, P. (2016). Family and politics: Dynastic persistence in the philippines. *Quarterly Journal of Political Science*, 11(2):151–181.
- Sol'e-Oll'e, A. and Sorribas-Navarro, P. (2008). The effects of partisan alignment on the allocation of intergovernmental transfers. differences-in-differences estimates for spain. *Journal of Public Economics*, 92(12):2302–2319.
- Strobl, E. (2019). The impact of typhoons on economic activity in the philippines: Evidence from nightlight intensity. *Asian Development Bank Economics Working Paper Series*, (589).
- Wallemacq, P. and Below, R. (2018). Annual disaster statistical review 2017. Technical report, Centre for Research on the Epidemiology of Disasters (CRED).



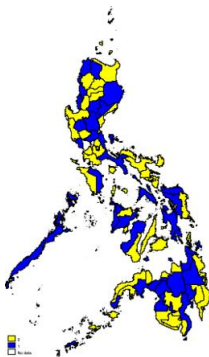
## Estimated typhoon tracks, 2005 to 2015



Notes: The figure shows the estimated tracks of typhoons that hit or moved through the vicinity of the Philippines from 2005 to 2015. Typhoon paths are estimated using the best track data of the Joint Typhoon Warning Center.

[Return](#)

## Spatial variation kinship ties 2013



Notes: Provinces shaded in blue are where there are kinship ties between the provincial governor and congressperson/s, and shaded in yellow otherwise.

[Return](#)

# Disaster management in the Philippines

- ▶ Local governments at the frontline of responding to extreme weather shocks
- ▶ National government augments local governments' efforts conditional on their requests for assistance

[Return](#)

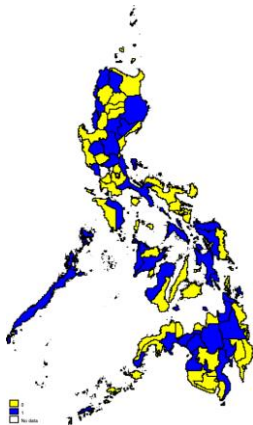
## Disaster councils in the Philippines and their respective jurisdictions

Disaster council	Jurisdictions affected by disaster
National DRRMC	$\geq 2$ regions
Regional DRRMC	$\geq 2$ provinces
Provincial DRRMC	$\geq 2$ cities or municipalities
City/Municipal DRRMC	$\geq 2$ barangays
Barangay disaster council	barangay is affected

**Source:** Philippine Disaster Risk Reduction and Management Act of 2010, Section 15.

[Return](#)

## Kinship ties between provincial governor and congressperson/s, 2013 electoral cycle



Notes: Provinces shaded in blue are where there are kinship ties between the provincial governor and congressperson/s, and shaded in yellow otherwise.



# Dead and missing as separate casualty indicators

	(1) Deaths	(2) Missing
Log Typhoon Wind Speed	0.090*** (0.010)	0.034*** (0.005)
With kinship ties	-0.003 (0.017)	-0.011 (0.010)
With kinship ties×Log Typhoon Wind Speed ( $\alpha_4$ )	0.002 (0.010)	-0.002 (0.007)
Close to election	0.977 (0.645)	0.242 (0.897)
Close to election×Log Typhoon Wind Speed	0.022* (0.013)	0.018* (0.009)
With kinship ties×Close to election	-0.026 (0.018)	-0.022* (0.011)
With kinship ties×Close to election ×Log Typhoon Wind Speed ( $\alpha_7$ )	-0.030** (0.014)	-0.029*** (0.009)
Estimate of $\alpha_4 + \alpha_7$	-0.028	-0.032
p-value ( $H_0: \alpha_4 + \alpha_7=0$ )	0.024	0.000
Observations	11,886	11,886
R-squared	0.195	0.095
Mean dep.var.	0.089	0.031
Prov. FE	Y	Y
Typhoon FE	Y	Y

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.

# Controlling for a province's recent typhoon experience

	(1)
Log Typhoon Wind Speed	0.113*** (0.013)
With kinship ties	0.003 (0.024)
With kinship ties×Log Typhoon Wind Speed	-0.000 (0.012)
Close to election	2.057* (1.151)
Close to election×Log Typhoon Wind Speed	0.005 (0.015)
With kinship ties×Close to election	-0.039 (0.024)
With kinship ties×Close to election ×Log Typhoon Wind Speed	-0.041** (0.018)
Estimate of $\alpha_4 + \alpha_7$	-0.041
p-value ( $H_0: \alpha_4 + \alpha_7 = 0$ )	0.005
Observations	8,240
R-squared	0.212
Mean dep.var.	
Prov. FE	Y
Typhoon FE	Y
Log Prev. Max. Wind Speed	Y

Standard errors are clustered at the provincial level. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent critical level.



# Robustness checks

VARIABLES	(1) Max. wind speed	(2) Within 500 km	(3) W/o ind. cities	(4) Gov. FE
Log Max Typhoon Wind Speed (Muni)	0.098*** (0.010)	0.107*** (0.012)	0.092*** (0.010)	0.104*** (0.010)
With kinship ties	-0.013 (0.018)	-0.009 (0.020)	-0.017 (0.019)	-0.003 (0.020)
With kinship ties×Log Typhoon Wind Speed	-0.002 (0.011)	-0.002 (0.015)	-0.011 (0.009)	-0.002 (0.010)
Close to election	0.786 (0.993)	0.867 (0.994)	-0.243 (0.543)	0.853 (1.081)
Close to election×Log Typhoon Wind Speed	0.020 (0.013)	0.027* (0.014)	0.024 (0.015)	0.025* (0.014)
With kinship ties×Close to election	-0.020 (0.017)	-0.019 (0.017)	-0.012 (0.021)	-0.026 (0.019)
With kinship ties×Close to election×Log Typhoon Wind Speed	-0.033** (0.014)	-0.042** (0.018)	-0.025* (0.014)	-0.035** (0.014)
Est. $\alpha_4 + \alpha_7$	-0.035	-0.043	-0.036	-0.037
p-value ( $H_0: \alpha_4 + \alpha_7 = 0$ )	0.005	0.005	0.005	0.005
Observations	11,886	9,257	9,204	11,886
R-squared	0.198	0.197	0.199	0.208
Mean dep.var.	0.104	0.131	0.092	0.104
Provincial and politician controls	Y	Y	Y	Y
Prov. FE	Y	Y	Y	N
Typhoon FE	Y	Y	Y	Y
Governor FE	N	N	N	Y

[return](#)

# Controlling for governor characteristics

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Graduate degree	Undergraduate degree	Law degree	Studied in Manila	Studied overseas
Log Typhoon Wind Speed	0.102*** (0.011)	0.103*** (0.011)	0.103*** (0.011)	0.103*** (0.011)	0.103*** (0.011)
With kinship ties	-0.007 (0.021)	-0.011 (0.020)	-0.011 (0.020)	-0.010 (0.021)	-0.011 (0.020)
With kinship ties×Log Typhoon Wind Speed	-0.002 (0.011)	-0.003 (0.010)	-0.003 (0.010)	-0.003 (0.010)	-0.003 (0.010)
Close to election	1.167 (1.095)	1.050 (1.074)	1.069 (1.071)	1.169 (1.100)	1.146 (1.097)
Close to election×Log Typhoon Wind Speed	0.031** (0.014)	0.029** (0.013)	0.030** (0.013)	0.031** (0.014)	0.031** (0.014)
With kinship ties×Close to election	-0.037* (0.020)	-0.033* (0.019)	-0.037* (0.019)	-0.037* (0.020)	-0.037* (0.020)
With kinship ties×Close to election×Log Typhoon Wind Speed	-0.040*** (0.014)	-0.037** (0.014)	-0.040*** (0.014)	-0.040*** (0.014)	-0.040*** (0.014)
Observations	10,764	11,065	10,908	10,756	10,756
R-squared	0.203	0.205	0.205	0.204	0.205
Mean dep.var.	0.104	0.103	0.104	0.105	0.105
Provincial and politician controls	Y	Y	Y	Y	Y
Prov. FE	Y	Y	Y	Y	Y
Typhoon FE	Y	Y	Y	Y	Y
Estimate of $\alpha_4 + \alpha_7$	-0.042	-0.040	-0.042	-0.043	-0.043
p-value ( $H_0: \alpha_4 + \alpha_7 = 0$ )	0.003	0.003	0.002	0.002	0.002

[return](#)