

# Testing Political Proximity as an Instrumental Variable

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# Institutional Capacity Breakdown

- Local Government Institutional Capacity Self-Assessment (LISA):
  - An assessment metric introduced by Ministry of Federal Affairs and General Administration in 2020/21
  - Focused on day-to-day performance and overall quantitative accomplishments
- LISA Breakdown:

SN	Category Title	Points
1	Governance Management	9
2	Organization & Administration	8
3	Budget Plan Management	11
4	Fiscal Economic Management	11
5	Service Delivery	16
6	Judicial Execution	9
7	Physical Infrastructure	13
8	Social Inclusion	10
9	Environmental Protection and Disaster Management	10
10	Cooperation and Coordination	6
	<b>Total</b>	<b>100</b>

- Each of the LISA Category is weighted with sub-categories as follows:

Indicators	Process Scenario	Quantitative Scenario	Total
21%	34%	45%	100%

- Cooperation and Coordination is calculated as follows:

10. Cooperation and Coordination Overall Scenario (6 points)					
10.1 Indicators		10.2 Process Scenario	10.3 Quantitative Scenario		
10.1.1 cooperation and coordination among federal, province & local governments	10.1.2 Inter local governments cooperation and coordination	10.2.1 Formation and operation of inter-local governments committee (more than two local governments) to address common interests.	10.3.1 Inter-government (federal and provincial) coordination and facilitation	10.3.2 Inter local governments partnership	10.3.3 Coordination with District Development Committee

- 6 out of 6 Cooperation and Coordination score can be achieved if the following conditions are met:
  - **10.1.1:** The local government does necessary coordination of policies and action with the federal and provincial government before setting its annual policies and programs and regularly provides tax revenue share to the provincial government.
  - **10.1.2:** The local government has policies and structures in place to collaborate and coordinate with other local governments in issues of common concerns and annually has at least one program to address common concerns with joint investment.
  - **10.2.1:** Joint committees are formed and are actively working among local governments on matters of common interests and concerns.
  - **10.3.1:** The local government is well informed about implementation and facilitation of federal and provincial level projects and has set up an active institution for it.
  - **10.3.2:** The local government has collaborated with other local governments to run one or more program to minimize costs, maximize the use of resources or provide effective service delivery.
  - **10.3.3:** In regards of development and construction activities, the local government has discussed the feedback, suggestion and monitoring reports of District Development Committee in its executive body and has taken necessary decision.
- For each score of LISA, I take the average of the FY 20/21 and FY 21/22 and convert them into **percentage** (for intuitive comprehension of the coefficients)

## Cooperation and Coordination Breakdown

- For my research, I group the 6 LISA categorizers into the following three variables:
  - **fed\_cop** =  $((\text{avg } 10.1.1 + \text{avg } 10.3.1) / 2) * 100$ 
    - It measures the cooperation and coordination sub-score that relates with federal government and provincial government, represented by 10.1.1 and 10.3.1
  - **local\_cop** =  $((\text{avg } 10.1.2 + \text{avg } 10.2.1 + \text{avg } 10.3.2) / 3) * 100$ 
    - It measures the cooperation and coordination sub-score that relates with other local governments, represented by 10.1.2, 10.2.1 and 10.3.1.
  - **ddc\_cop** =  $(\text{avg } 10.3.3) * 100$ 
    - It measures the cooperation and coordination sub-score that relates with district development committee, represented by 10.3.3.

## Variables and Data Sources

### 1. Cooperation and Coordination Breakdown

For my research, I group the 6 LISA categorizers into the following three variables and express them in percentage:

- **fed\_cop** =  $((\text{avg } 10.1.1 + \text{avg } 10.3.1) / 2) * 100$ 
  - It measures the cooperation and coordination sub-score that relates with federal government and provincial government, represented by 10.1.1 and 10.3.1
- **local\_cop** =  $((\text{avg } 10.1.2 + \text{avg } 10.2.1 + \text{avg } 10.3.2) / 3) * 100$ 
  - It measures the cooperation and coordination sub-score that relates with other local governments, represented by 10.1.2, 10.2.1 and 10.3.1.
- **ddc\_cop** =  $(\text{avg } 10.3.3) * 100$ 
  - It measures the cooperation and coordination sub-score that relates with district development committee, represented by 10.3.3.

### 2. **rel\_chgni**: $\ln(\text{sum of nightlight of 2021}) - \ln(\text{sum of nightlight of 2017})$

*Extracted from [VIIRS Nighttime Lights dataset](#) using QGIS software*

### 3. **ln\_baseline\_nl\_km**: $\log[(\text{average of sum of night light of 2014, 2015, 2016, 2017}) / \text{area of municipality}]$

*Extracted from [VIIRS Nighttime Lights dataset](#) using QGIS software*

### 4. **lisa\_avg**: average LISA score of 2020/21 and 2021/22 (In case, LISA score of 2020/21 was not available, LISA score of 2021/22 is considered to be the average)

*Downloaded from [LISA website](#) of the government of Nepal*

### 5. **high\_school\_percentage**: percentage of population who have completed high school and above (Higher Secondary level or equivalent + Graduate level or equivalent + Post Graduate level or equivalent)

*Manually constructed dataset from datasets of each province from [National Population and Housing Census 2021](#)*

### 6. **ageatelection**: age of chairperson at election in 2017

*Manually constructed dataset from [the election result pdfs](#) published in Nepali*

### 7. **gov\_coalition**: dummy variable Government Coalition = 1 if the chairperson of the municipality is affiliated with the parties in the federal government coalition

*Manually constructed dataset from [the election result pdfs](#) published in Nepali and then coded in Stata*

**8. female:** dummy variable female = 1 if the chairperson is a female

*Manually constructed dataset from [the election result pdfs](#) published in Nepali and then coded in Stata*

**9. ln\_popn:** log of population as per census of 2021

*Extracted from the [Preliminary Data of National Population and Housing Census 2021](#)*

**10. urban\_num:** dummy variable = 1 if the local level is municipality, sub-metropolitan city or metropolitan city i.e. non rural municipality

**11. neighbour\_percentage:** (total no. of neighbors with chairperson belonging to same party/total no. of neighbors) \* 100

**12. Percentage of average points score in LISA subcategories in 2020/21 and 2021/22**

(I am converting the obtained scores in percentage for intuitive comprehension of the coefficients)

SN	Category Title	Points	Coded variable
1	Governance Management	9	gov_magm_per
2	Organization & Administration	8	org_admin_per
3	Budget Plan Management	11	budg_magm_per
4	Fiscal Economic Management	11	fiscal_magm_per
5	Service Delivery	16	service_dev_per
6	Judicial Execution	9	jud_exe_per
7	Physical Infrastructure	13	phy_infra_per
8	Social Inclusion	10	soc_inc_per
9	Environmental Protection and Disaster Management	10	env_protec_per
10	Cooperation and Coordination	6	cop_cor_per
	<b>Total</b>	<b>100</b>	

## Main Regression

VARIABLES	(1) rel chgnl	(2) rel chgnl	(3) rel chgnl	(4) rel chgnl	(5) rel chgnl	(6) rel chgnl	(7) rel chgnl	(8) rel chgnl	(9) rel chgnl
gov_magm_per	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
org_admin_per	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
budg_magm_per	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
fiscal_magm_per	-0.001* (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
service_dev_per	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
jud_exe_per	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001* (0.001)
phy_infra_per	0.001** (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)
soc_inc_per	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
env_protec_per	0.000 (0.001)	-0.000 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.000)
fed_cop	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
local_cop	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
ddc_cop	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
ln_baseline_nl_km		0.073*** (0.014)	0.045*** (0.013)	0.045*** (0.013)	0.046*** (0.013)	0.045*** (0.013)	0.001 (0.016)	0.001 (0.016)	-0.003 (0.016)
high_school_percent			0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.010*** (0.001)
ageatelection				-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)
female					0.065 (0.050)	0.065 (0.051)	0.059 (0.051)	0.059 (0.051)	0.056 (0.050)
gov_coalitiion						-0.017 (0.012)	-0.017 (0.011)	-0.017 (0.011)	-0.019* (0.011)
ln_popn							0.052*** (0.009)	0.052*** (0.009)	0.064*** (0.012)
urban_num									-0.031* (0.017)
Constant	0.382*** (0.062)	0.318*** (0.060)	0.308*** (0.059)	0.321*** (0.067)	0.318*** (0.067)	0.328*** (0.068)	-0.159 (0.107)	-0.159 (0.107)	-0.267** (0.127)
Observations	691	691	691	691	691	691	691	691	691
R-squared	0.063	0.122	0.178	0.179	0.182	0.184	0.213	0.213	0.218

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## IV Outline by Prof O'Connell

**Step 1:** Using OLS, estimate a '**reduced form**' growth equation that excludes cooperation, but includes your instrument (call it Z) and the other variables. Call the estimated coefficient on your instrument "a": this is the 'reduced form' impact of the instrument on growth.

**Step 2:** Using OLS, estimate a '**first stage**' regression of cooperation (dependent variable) on your instrument and the other variables in the structural equation. Let's call the estimated coefficient on Z "c": this is the ceteris paribus, causal impact of your instrument on cooperation.

**Step 3:** Calculate  $b = a/c$ . This is an IV estimate of the causal impact of one extra 'unit' of cooperation on growth!

Or can be implemented using two stages least squares using Stata, which yields a more complicated calculation for b, but one that follows the same intuition

In order for the IV estimate to be valid, you need to satisfy 2 conditions:

(1) **RELEVANCE:** Your instrument, Z, must have a strong effect in predicting cooperation. This condition is testable by looking at the t statistic on Z in the first-stage regression, which should be something like 3 or more for a good instrument.

(2) **EXCLUSION:** Your instrument cannot have any direct effect of its own on growth; it must affect growth only via its impact on cooperation. This requirement is not testable -- it is a maintained hypothesis (if you have multiple instruments, you can test the validity of each of them assuming the others are valid, but you cannot test the validity of the whole set).

## Political Proximity as IV

- I am using political proximity between local levels as an instrumental variable. I am specifically looking at neighboring local levels for each local level and calculating the percentage of neighbors that they have whose chairperson belong to the same party.
- I opted for political proximity because I already had data on the political affiliation of the chairperson of each local level from the election of 2017.

### Assumptions:

- Chairpersons have the highest executive authority in a local level. Thus, they might have the most influence when it comes to cooperation with neighboring municipalities.
- Comradery and rivalry within regional party politics:
  - Federal elections constituency consist of multiple local levels
  - Chairpersons of the same party might have worked as comrades in local committees of their party making it easier and convenient to cooperate.
  - In contrary, chairpersons form opposing party might have known each other as political rivals, making them less likely to cooperate.

- Chairpersons from same party are likely to prioritize similar plans and policies that resonate with their parties promise during election.

### Limitations:

- Chairpersons may not indicate party affinity of majority of the population:
  - In some local levels, chairperson and vice chairperson are from different political parties.
  - Since chairpersons are elected through first past the post system, which means that the elected candidates necessarily do not represent sentiment of the majority. For instance, a local level can have a party chairperson from party A with 40% of the votes but the candidates from party B and C could have 30% votes each.
- Wards can provide an accurate measurement:
  - Local levels are composed of smaller administrative units called wards who have elected chairpersons as well. Total votes at a ward level can be a more precise measure of political affinity of a municipality However, such data is even more difficult to retrieve from Nepal pdfs as there are 6,743 total wards in Nepal.
- Ethnicity could triumph over political affiliation.

### Calculation:

- First, I rendered data on neighbors for each local level.
- Then I matched them with their corresponding party affiliation.
- Finally, I calculated the percentage of neighbors that have chairperson from the same political party.
- **neighbor\_percent** = (total no. of neighbors with chairperson belonging to same party/total no. of neighbors) \* 100



## Reduced form Regression

VARIABLES	(1) rel chgnl	(2) rel chgnl	(3) rel chgnl	(4) rel chgnl	(5) rel chgnl	(6) rel chgnl	(7) rel chgnl	(8) rel chgnl	(9) rel chgnl
neighbor_percent	0.001** (0.000)	0.001* (0.001)	0.001*** (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
gov_magm_per		-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
org_admin_per		-0.001* (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.000)
budg_magm_per		0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
fiscal_magm_per		-0.001* (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
service_dev_per		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
jud_exe_per		-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001* (0.001)
phy_infra_per		0.001*** (0.000)	0.001* (0.000)	0.001* (0.000)	0.001* (0.000)	0.001* (0.000)	0.001* (0.000)	0.001 (0.000)	0.001 (0.000)
soc_inc_per		-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
env_protec_per		0.001 (0.001)	0.000 (0.001)	-0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001* (0.000)	-0.001* (0.000)
fed_cop		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000* (0.000)	0.000* (0.000)
ddc_cop		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
ln_baseline_nl_km			0.083*** (0.014)	0.052*** (0.014)	0.052*** (0.014)	0.053*** (0.014)	0.053*** (0.014)	0.006 (0.017)	0.002 (0.017)
high_school_percent				0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.002)
ageatelection					-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)
female						0.071 (0.050)	0.071 (0.051)	0.064 (0.051)	0.062 (0.050)
gov_coalition							-0.018 (0.012)	-0.019 (0.012)	-0.020* (0.012)
ln_popn								0.054*** (0.009)	0.066*** (0.012)
urban_num									-0.031* (0.017)
Constant	0.321*** (0.010)	0.357*** (0.061)	0.289*** (0.059)	0.286*** (0.058)	0.298*** (0.066)	0.294*** (0.066)	0.306*** (0.068)	-0.200* (0.107)	-0.307** (0.128)
Observations	691	691	691	691	691	691	691	691	691
R-squared	0.007	0.043	0.117	0.169	0.169	0.173	0.175	0.207	0.212

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

# First Stage Regression

VARIABLES	(1) local_cop	(2) local_cop	(3) local_cop	(4) local_cop	(5) local_cop	(6) local_cop	(7) local_cop	(8) local_cop
neighbor_percent	0.272*** (0.095)	0.142 (0.091)	0.183** (0.093)	0.177* (0.093)	0.160* (0.093)	0.161* (0.093)	0.047 (0.082)	0.053 (0.071)
high_school_percent		1.619*** (0.233)	1.288*** (0.244)	1.234*** (0.251)	1.193*** (0.251)	1.184*** (0.252)	0.338 (0.227)	0.266 (0.189)
ln_popn			5.872*** (1.594)	4.732** (1.888)	4.263** (1.892)	4.257** (1.890)	2.362 (1.654)	3.416** (1.553)
urban_num				3.235 (3.024)	3.524 (3.008)	3.572 (3.004)	1.701 (2.656)	2.626 (2.337)
ageatelection					0.265** (0.126)	0.271** (0.126)	0.236** (0.108)	0.112 (0.094)
female						4.948 (8.290)	3.420 (6.856)	4.670 (5.018)
gov_magm_per							0.069 (0.103)	-0.091 (0.092)
org_admin_per							-0.000 (0.084)	-0.031 (0.076)
budg_magm_per							0.055 (0.098)	0.112 (0.084)
fiscal_magm_per							0.166 (0.102)	0.106 (0.091)
service_dev_per							0.108 (0.113)	0.121 (0.102)
jud_exe_per							0.067 (0.074)	0.035 (0.066)
phy_infra_per							0.265*** (0.080)	0.141** (0.068)
soc_inc_per							0.050 (0.066)	-0.092 (0.061)
env_protec_per							0.443*** (0.094)	0.247*** (0.083)
fed_cop								0.388*** (0.039)
ddc_cop								0.149*** (0.028)
Constant	27.926*** (1.881)	13.591*** (2.648)	-43.788*** (15.913)	-32.756* (18.733)	-40.206** (19.037)	-40.464** (19.048)	-74.170*** (17.294)	-60.543*** (15.475)
Observations	691	691	691	691	691	691	691	691
R-squared	0.013	0.082	0.101	0.102	0.109	0.109	0.338	0.489

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## IV Validity

- A statistical test for a good IV is its relevance: a t-statistic of 3 or more in “first-stage regression”.
- Initial t-static is 2.87, but it drops to 0.75 after adding all the other controls. So, political proximity might not be a good IV.

Linear regression

Number of obs = 691  
 F(1, 689) = 8.26  
 Prob > F = 0.0042  
 R-squared = 0.0127  
 Root MSE = 30.576

local_cop	Robust					
	Coefficient	std. err.	t	P> t	[95% conf. interval]	
neighbor_percent	.2716404	.0945331	2.87	0.004	.0860329	.4572479
_cons	27.92648	1.881371	14.84	0.000	24.23258	31.62039

local_cop	Robust					
	Coefficient	std. err.	t	P> t	[95% conf. interval]	
neighbor_percent	.053051	.0711325	0.75	0.456	-.0866172	.1927193
high_school_percent	.2664227	.18945	1.41	0.160	-.1055615	.638407
ln_popn	3.415685	1.552848	2.20	0.028	.366675	6.464695
urban_num	2.626003	2.337179	1.12	0.262	-1.963035	7.215042
ageatelection	.1123757	.0941527	1.19	0.233	-.0724927	.297244
female	4.670075	5.017826	0.93	0.352	-5.182401	14.52255
gov_magm_per	-.0908637	.0923089	-0.98	0.325	-.2721118	.0903845
org_admin_per	-.0307207	.0758007	-0.41	0.685	-.1795551	.1181136
budg_magm_per	.1124167	.0838701	1.34	0.181	-.0522618	.2770952
fiscal_magm_per	.1057795	.0908147	1.16	0.245	-.0725346	.2840937
service_dev_per	.1210887	.1021073	1.19	0.236	-.0793985	.3215759
jud_exe_per	.0345522	.0655242	0.53	0.598	-.0941043	.1632087
phy_infra_per	.1411736	.0684082	2.06	0.039	.0068544	.2754927
soc_inc_per	-.0916181	.0613368	-1.49	0.136	-.2120526	.0288163
env_protec_per	.2470592	.0828088	2.98	0.003	.0844645	.409654
fed_cop	.3880157	.0391144	9.92	0.000	.3112148	.4648167
ddc_cop	.1493808	.0280754	5.32	0.000	.0942549	.2045067
_cons	-60.54327	15.47474	-3.91	0.000	-90.92785	-30.1587

## Two-stage least squares in Stata

```
. ivregress 2sls rel_chgnl ln_baseline_nl_km high_school_percent ln_popn urban_num ageatelection female gov_magm_per org_admi
> n_per budg_magm_per fiscal_magm_per service_dev_per jud_exe_per phy_infra_per soc_inc_per env_protec_per fed_cop ddc_cop (l
> ocal_cop = neighbor_percent)
```

```
Instrumental variables 2SLS regression      Number of obs   =      691
                                           Wald chi2(18)    =     39.74
                                           Prob > chi2      =     0.0023
                                           R-squared        =      .
                                           Root MSE        =     .31201
```

rel_chgnl	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
local_cop	.0132803	.0179546	0.74	0.460	-.02191	.0484707
ln_baseline_nl_km	-.0022476	.0306414	-0.07	0.942	-.0623035	.0578083
high_school_percent	.0057786	.005939	0.97	0.331	-.0058616	.0174188
ln_popn	.0222144	.0637917	0.35	0.728	-.102815	.1472439
urban_num	-.0643449	.059287	-1.09	0.278	-.1805454	.0518556
ageatelection	-.0018382	.0024809	-0.74	0.459	-.0067007	.0030244
female	-.001136	.1184156	-0.01	0.992	-.2332264	.2309544
gov_magm_per	.000472	.0021485	0.22	0.826	-.0037389	.004683
org_admin_per	.0003131	.0011815	0.26	0.791	-.0020027	.0026289
budg_magm_per	-.0012961	.0023011	-0.56	0.573	-.0058062	.0032141
fiscal_magm_per	-.0021358	.0023255	-0.92	0.358	-.0066936	.002422
service_dev_per	-.0006348	.0025931	-0.24	0.807	-.0057171	.0044476
jud_exe_per	-.001482	.0011851	-1.25	0.211	-.0038048	.0008408
phy_infra_per	-.0013597	.0027426	-0.50	0.620	-.0067351	.0040156
soc_inc_per	.0011324	.0018167	0.62	0.533	-.0024284	.0046931
env_protec_per	-.0041179	.0045498	-0.91	0.365	-.0130352	.0047995
fed_cop	-.0046996	.006969	-0.67	0.500	-.0183585	.0089594
ddc_cop	-.0019192	.0027223	-0.71	0.481	-.0072549	.0034164
_cons	.4717321	1.093532	0.43	0.666	-1.671552	2.615016

Endogenous: local\_cop

Exogenous: ln\_baseline\_nl\_km high\_school\_percent ln\_popn urban\_num ageatelection  
female gov\_magm\_per org\_admin\_per budg\_magm\_per fiscal\_magm\_per  
service\_dev\_per jud\_exe\_per phy\_infra\_per soc\_inc\_per env\_protec\_per  
fed\_cop ddc\_cop neighbor\_percent

## Way Forward

- Explore ethnic proximity as an instrumental variable. The census report of 2021 provides data on ethnic/caste distribution for each municipality.
- Reach out to stakeholders to further understand what factors are conducive to economic growth.
- Analysis the data by excluding province that has extreme party affiliation and educational outcome heterogeneity