



# **Navigating Municipal Governance: A Comparative Analysis of Council-Manager, Mayor-Council, and Commission Systems on Public Service Delivery and Citizen Engagement**

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**EPPS 6323: KNOWLEDGE MINING**

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# The Purpose of Research

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- ❑ This study investigates the influence of different municipal government structures, specifically the council-manager, mayor-council, and commission systems, on public service delivery and citizen engagement in local governance.
- ❑ The council-manager form of government has gained prominence as an efficient and practical approach to local governance, offering numerous advantages related to administration and public service provision.
- ❑ Critics argue that city managers may be less responsive to citizens' needs and preferences than elected officials and that the appointed nature of the position might be perceived as lacking direct representation (NLC).

# Research Question and Hypotheses

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**Question 1:** What factors drive the establishment of forms of government?

**Question 2:** How the forms of government impact the structure of local government ?

- **H1:** The choice of city government form is influenced by a city's size and complexity
- **H2:** Cities that uses the council- manager form of government is associated with better municipal management and efficiency than cities with other forms of government
- **H3:** Chief elected officer (CEO) have a level of power comparable to officers/members in other forms of local government

# Data Collection

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## Data

The 2018 edition of ICMA's Municipal Form of Government Survey was distributed by mail to the clerks of all 12,761 municipal governments in ICMA's database. The survey was returned by 4,109 respondents for a 32.2% response rate

## Population/Sample

Survey Population	Surveyed	Responded	Response Rate
Total	12,761	4,115	32.2%
Census Population	Surveyed	Responded	Response Rate
Over 1,000,000	9	3	33.3%
500,000 - 1,000,000	26	7	26.9%
250,000 - 499,999	44	10	22.7%
100,000 - 249,999	235	81	34.5%
50,000 - 99,999	549	192	35.0%
25,000 - 49,999	1,028	377	36.7%
10,000 - 24,999	2,332	771	33.1%
5,000 - 9,999	2,750	823	29.9%
2,500 - 4,999	3,963	1,112	28.1%
Under 2,500	1,825	739	40.5%

# Variables

**Independent Variables (IVs)** for this study include, but not limited:

- Demographic data
- Forms of government
- Government official data
- Other data pertaining to the structure of local government

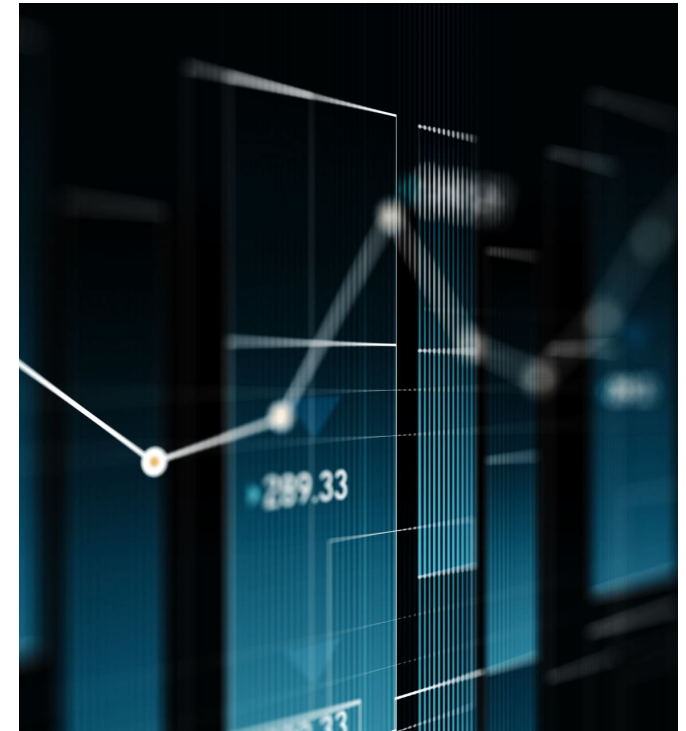
**Dependent Variable** for this study is:

- Forms of government
- Chief Appointed Officer (CAO)'s efficiency
- Chief Elected Officer (CEO)'s power

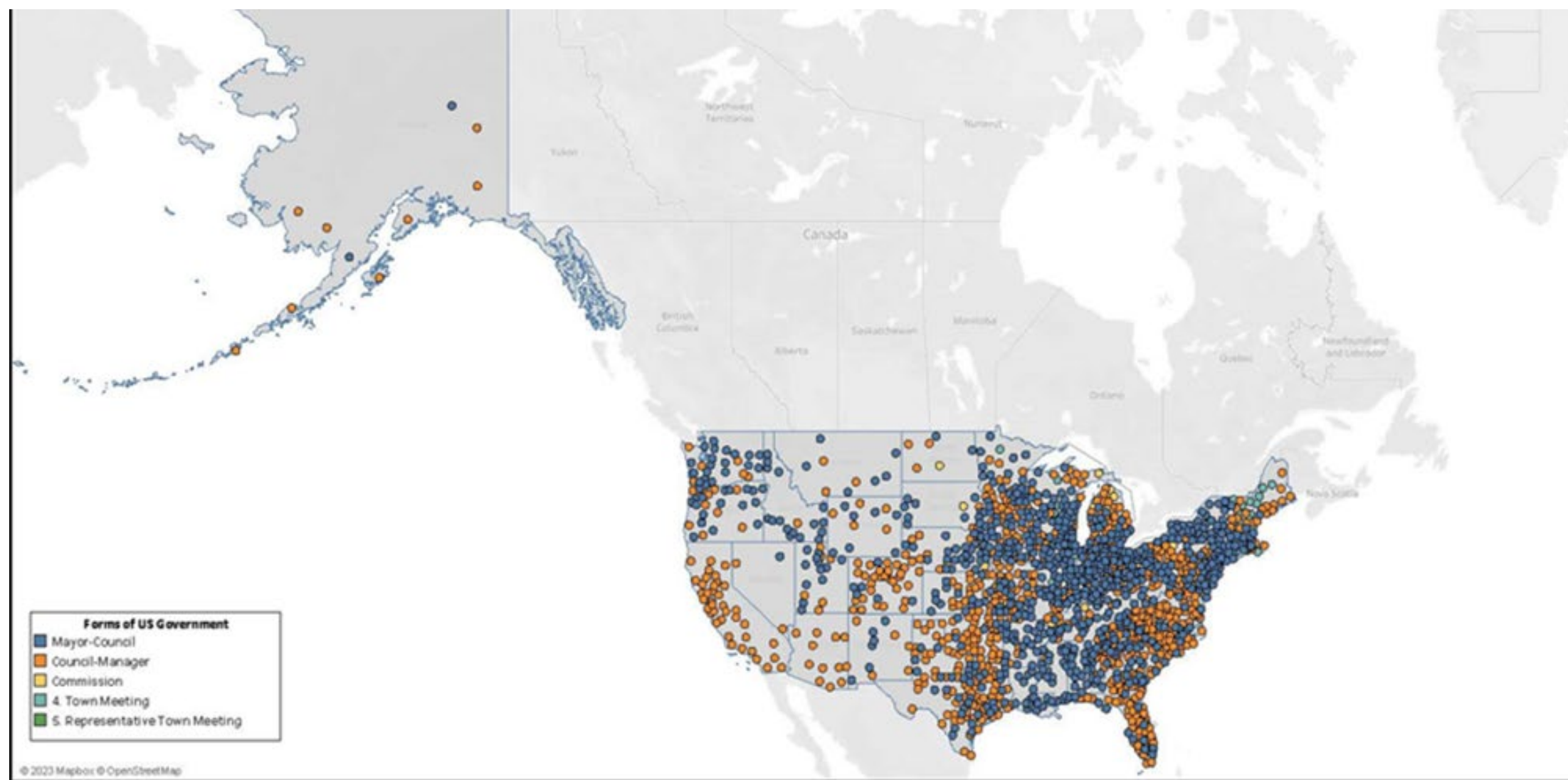
# Data Analysis

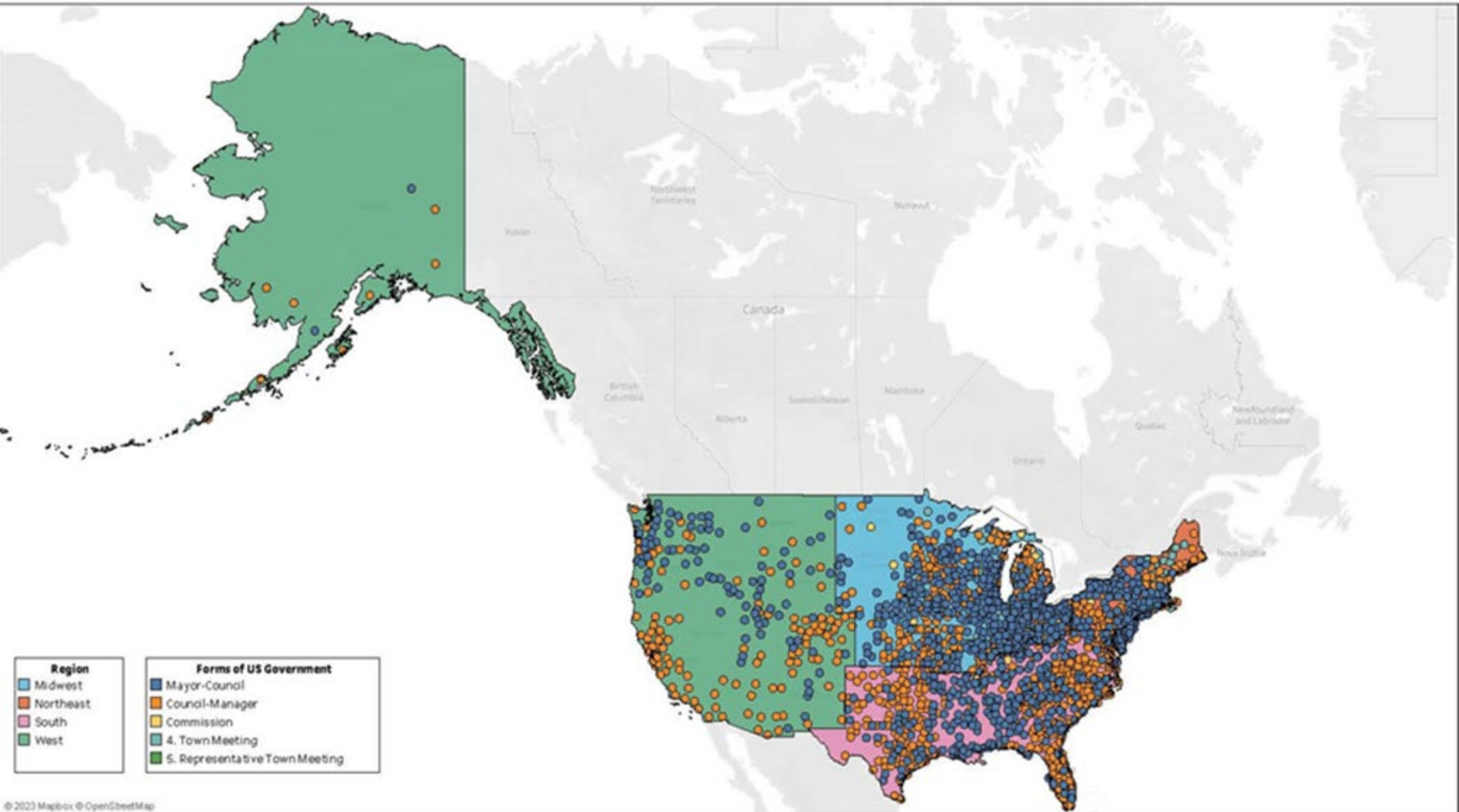
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- Descriptive Analysis
- Logistic Regression Model
- Data Visualization











# Exploratory analysis of Forms of Government

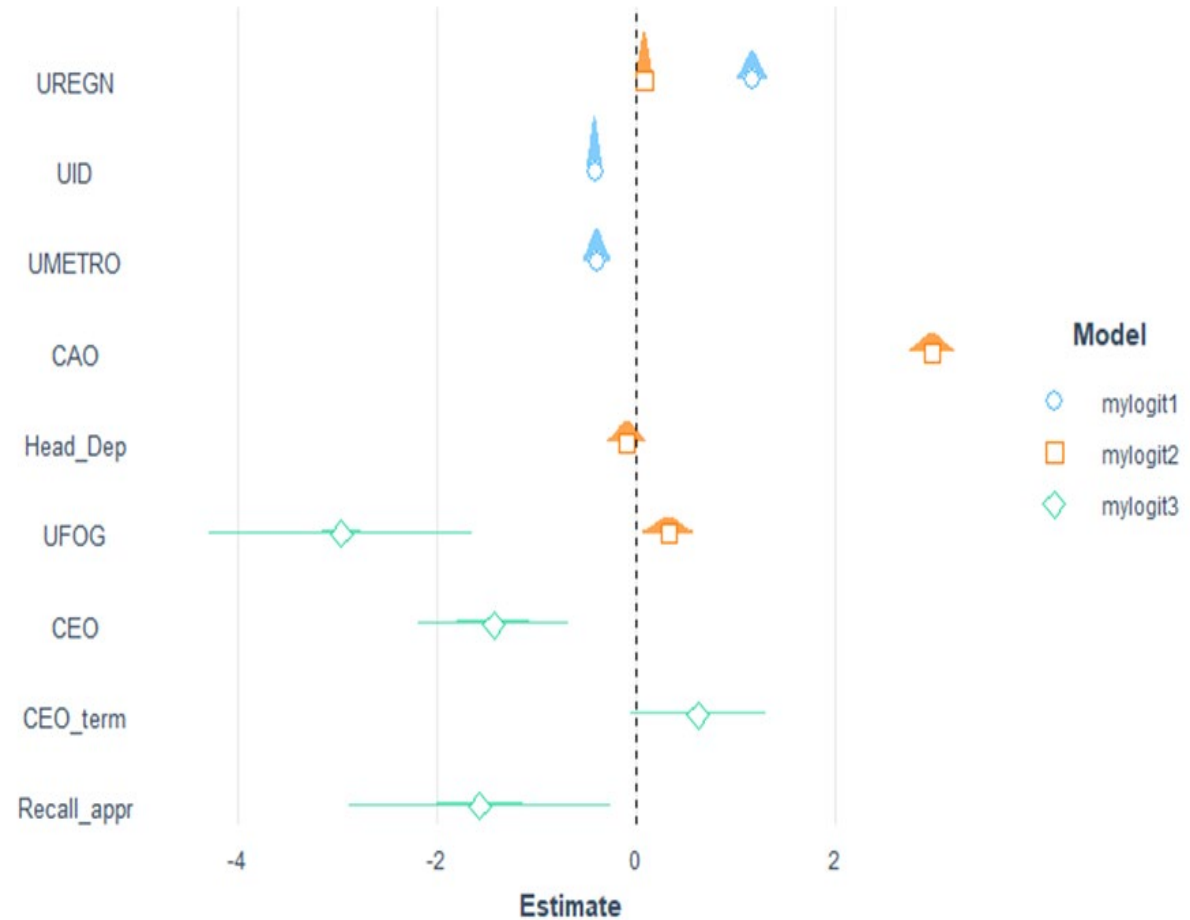
Dependent variable:			
	UFOG (1)	CM_efficiency (2)	CEO_power (3)
CAO		2.983*** (0.115)	
Head_Dep		-0.083 (0.099)	
UREGN	1.177*** (0.076)	0.091** (0.044)	
UID	-0.409*** (0.040)		
UMETRO	-0.387*** (0.067)		
CEO			-1.425*** (0.479)
CEO_term			0.627 (0.737)
Recall_appr			-1.568** (0.693)
UFOG		0.331** (0.132)	-2.958*** (0.778)
Constant	1.051*** (0.216)	-2.232*** (0.280)	6.370*** (1.984)
Observations	4,115	3,667	100
Log Likelihood	-1,346.468	-1,898.509	-50.643
Akaike Inf. Crit.	2,700.937	3,807.017	111.286
Note: *p<0.1; **p<0.05; ***p<0.01			

- **Model 1** suggests that geographic region (UREGN), administrative geographic area (UID) and metro status (UMETRO) are all significantly associated with the forms of government (UFOG). Regions have positive relationship with forms of government; while administrative geographic area and metro status have negative relationship with forms of government. It indicates that municipal government in bigger cities with the population more than 50,000 are less likely to have either council-manager form or mayor-council form.
- **Model 2** suggests that the appointment of a chief appointed official (CAO), geographic region (UREGN), and forms of government (UFOG) all have positive relationship with city manager (CAO)'s budgeting power in municipal government with council-manager form and thus the city management efficiency.
- **Model 3** indicates that mayor's voting power on all issues have negative relationship with the appointment of mayor, recall and approval due to mayor's performance, and forms of government.

# Coefficient Plot

Chart 3 illustrates the regression results well for this study.

- Model mylogit1 shows that UREGN, UID, and UMETRO all have significant correlations with UFOG as the DV.
- Model mylogit2 show CAO has a significant and large correlative relationship with the DV. Head\_Dep has no significant correlation with DV CM\_efficiency; while UFOG and UREGN have a small, significant correlative relationship with the DV CM\_efficiency.
- Model mylogit3 indicates that DV CEO\_power has a negative and significant correlative relationship with IVs: Recall\_appr, CEO, and UFOG.



# Plot for Model 1

Residuals vs Fitted plot is a common tool used to assess the fit of a regression model.

- *The funnel shape distribution indicates the presence of heteroscedasticity and suggests a revision of this model for future study.*

The Normal Q-Q plot is a graphical tool used to assess the normality assumption of the residuals in a regression model.

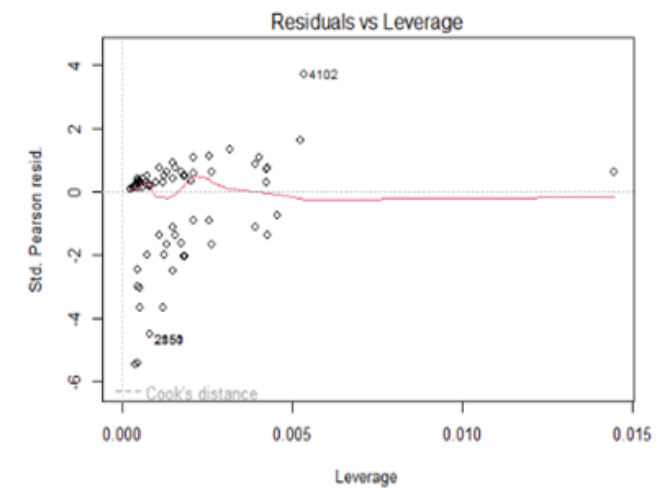
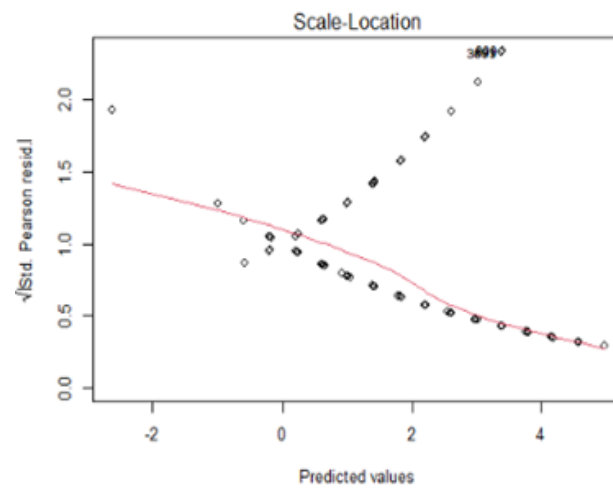
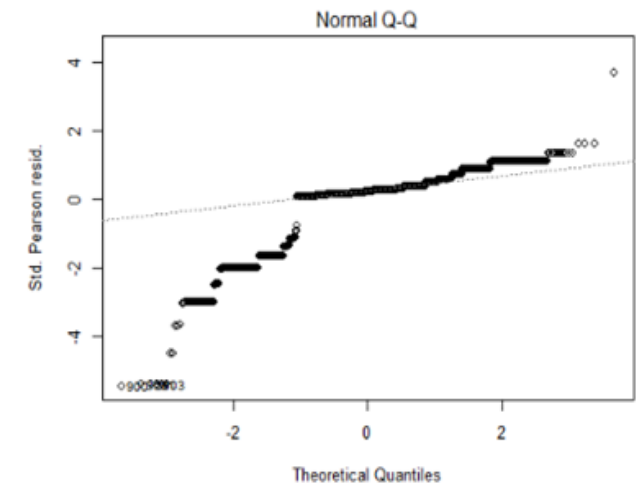
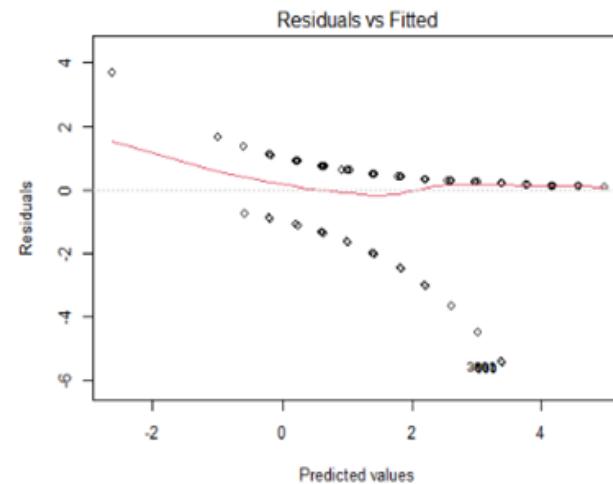
- *The outliers from the first half of the dashed line indicates that further investigate of them is needed to determine whether they should be included or excluded from the model.*

The Scale-location plot is used to check the homoscedasticity of residuals

- *The funnel shape suggests that the variability of the residuals is not constant, heteroscedasticity exists and future adjustment of the model is needed.*

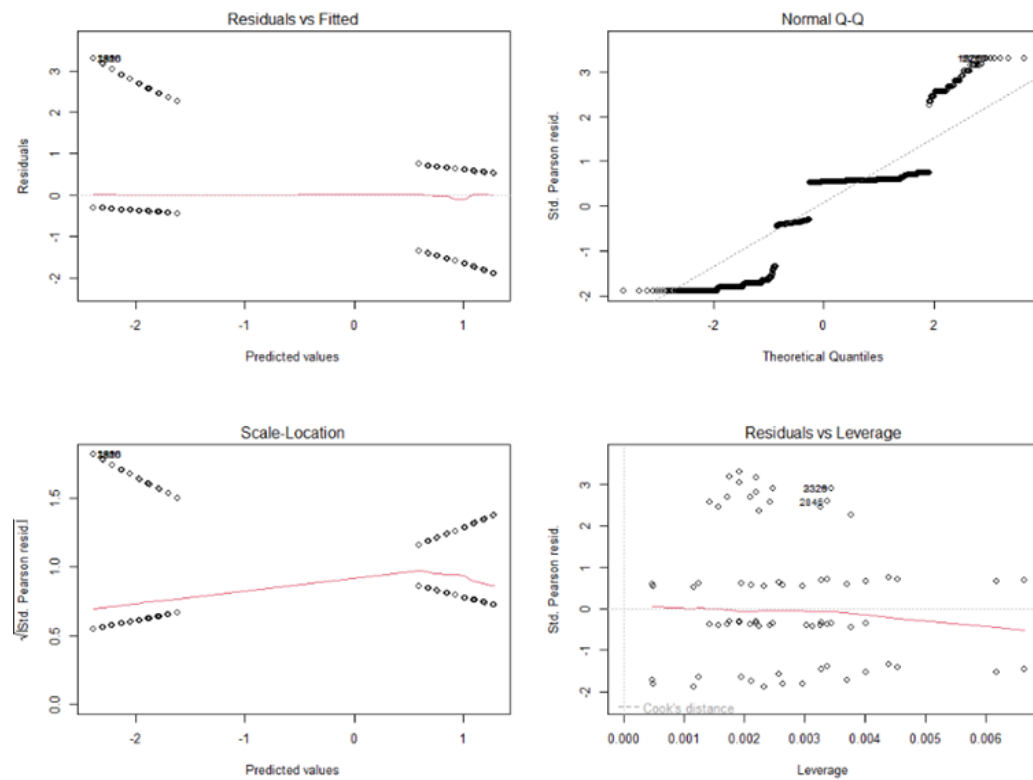
Residuals vs Leverage, also known as the Cook's distance plot, is used to identify any influential value in the dataset.

- *The outliers, observations with high leverage and high standardized residues in this plot indicate that further investigation will be needed and maybe potentially removed from the analysis if they are found to be influential*

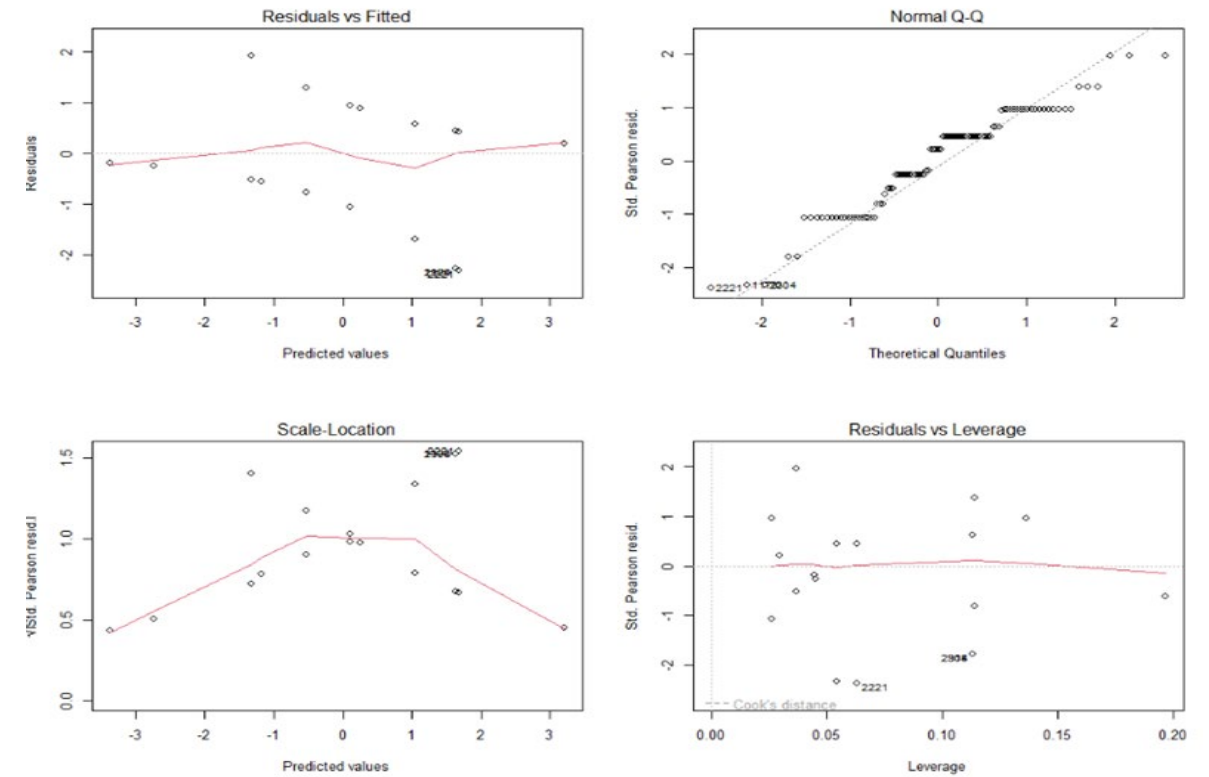


Further study will be needed in future...

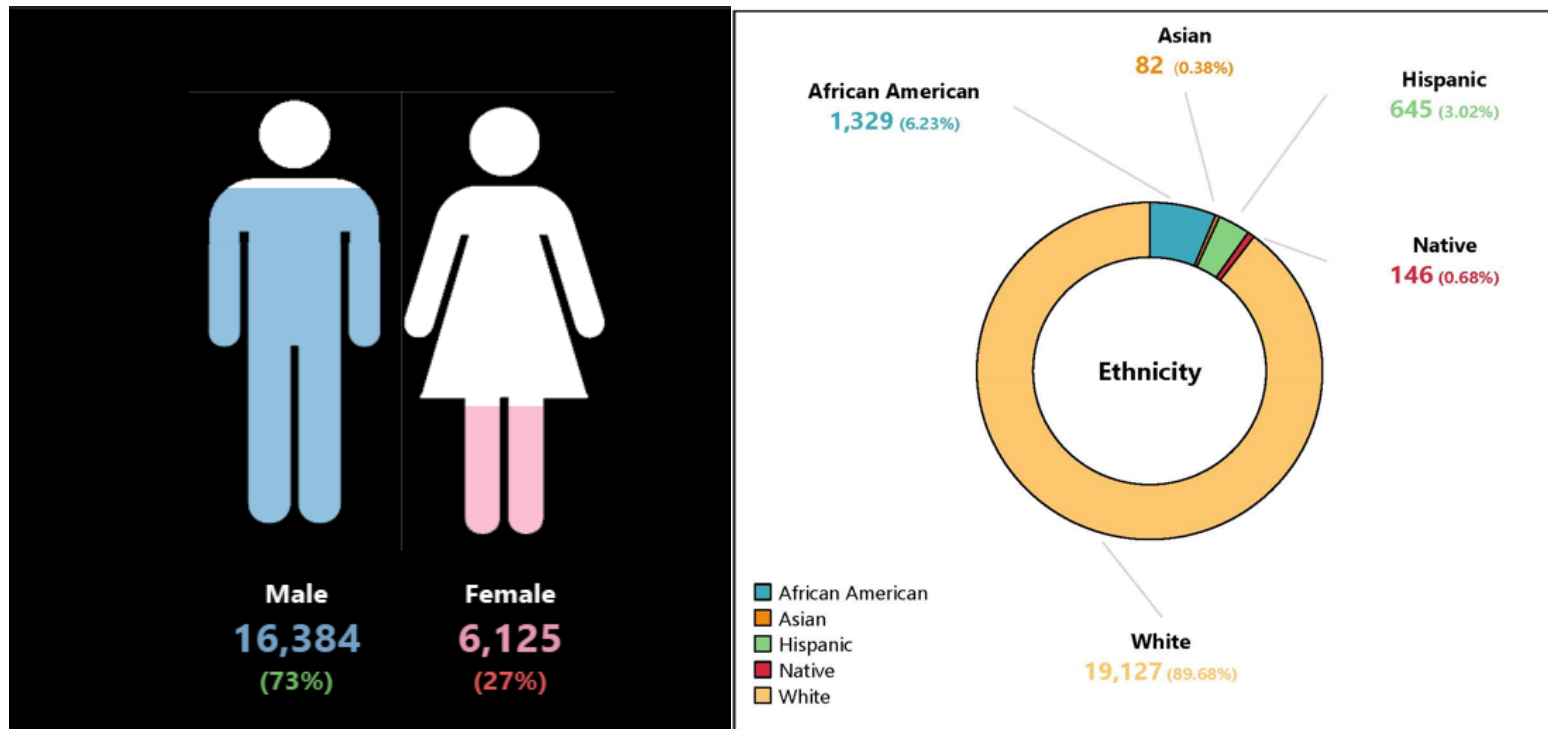
### Plot for Model 2



### Plot for Model 3



## Average Diversity Composition in Local Governments



- This chart clearly illustrates that the composition of most local government councils (or other similar governing board of elected officials) is primarily male versus female, and the racial diversity is similarly lacking with most councils being comprised of almost 90% white officials.



# Discussion

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- Data analysis shows issues of hetero- or homoscedasticity existing.
  - Little can be effectively done about this, best to re-work the model (Buis, 2010; Williams, 2009)
- **Hypothesis 1:** partially supported – region high correlation; other factors, low negative correlation
- **Hypothesis 2:** supported – council-manager correlated highest with cm\_efficiency
- **Hypothesis 3:** not supported – CEO power is negatively correlated with form of government
- **Question 1:** population doesn't matter; regional preferences does matter
- **Question 2:** regional preference; efficiency motivations / **postulate:** desire of function

# Limitation and Future Research

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- Further investigation will be need to have a more in-depth study to address “WHY”
- While logistical regression did provide some interesting and important data findings, it also presents some obstacles that could not be corrected within the limited scope of time for this study.
- Multinomial regression study is considered for future study; for example, the forms of government can be defined as: **1.** mayor-council, **2.** council-manager, **3.** Commission, **4.** town Meeting, and **5.** representative town meeting.
  - For current logistic model, we combine mayor-council form and council-manager form as 1 as they take nearly 90% of the forms of government, the rest as 0.

# Conclusion

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- An increasing number of municipal governments have changed their original form of government to the council-manager form which become more and more popular
- While some council-manager cities retain the position of mayor, the role is typically largely ceremonial (Coate and Knight, 2011).
- It took years to diffuse the power entrenched in city political machines and special interests. However, along with the council-manager form becoming more prevalent, citizens throughout the U.S. have resumed control in their community.
- In-depth study on those two questions are needed in future. Beside quantitative study, qualitative research, such as interviewing the leadership in local government, can be a potential method to consider for future study

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# Questions?

