Election2022

Data Exploration & Analysis on the National Polls

Norman Lapid

Ayala

Agenda

Background

Voting Behavior

Exploration of Results

Clustering Analysis

Network Analysis

Background of the 2022 Elections

Elections for:

- successors to Pres. Duterte and VP Robredo
- 12 senate seats
- 316 seats to the House of Representatives

Notable for:

- Candidacy of Ferdinand Marcos Jr.
- Opposition by VP Leni Robredo
- Vice-presidential run of the daughter of incumbent Pres. Duterte

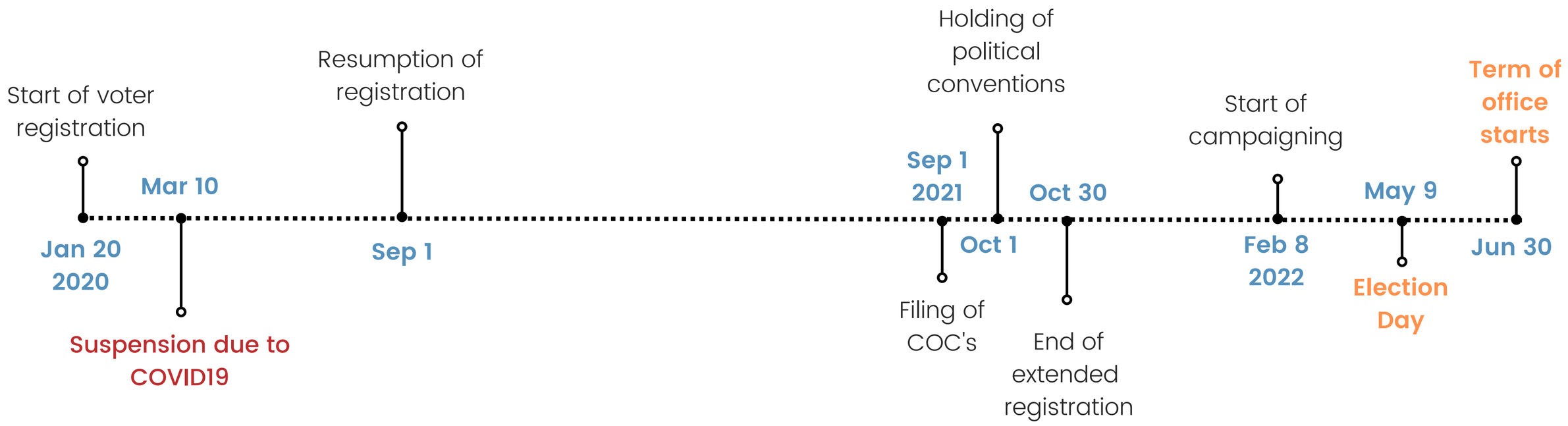
Timeline

Suspended voter-registration due to COVID-19

- Up to 8 months lost due to lockdowns

Law passed extending registration by 30 days

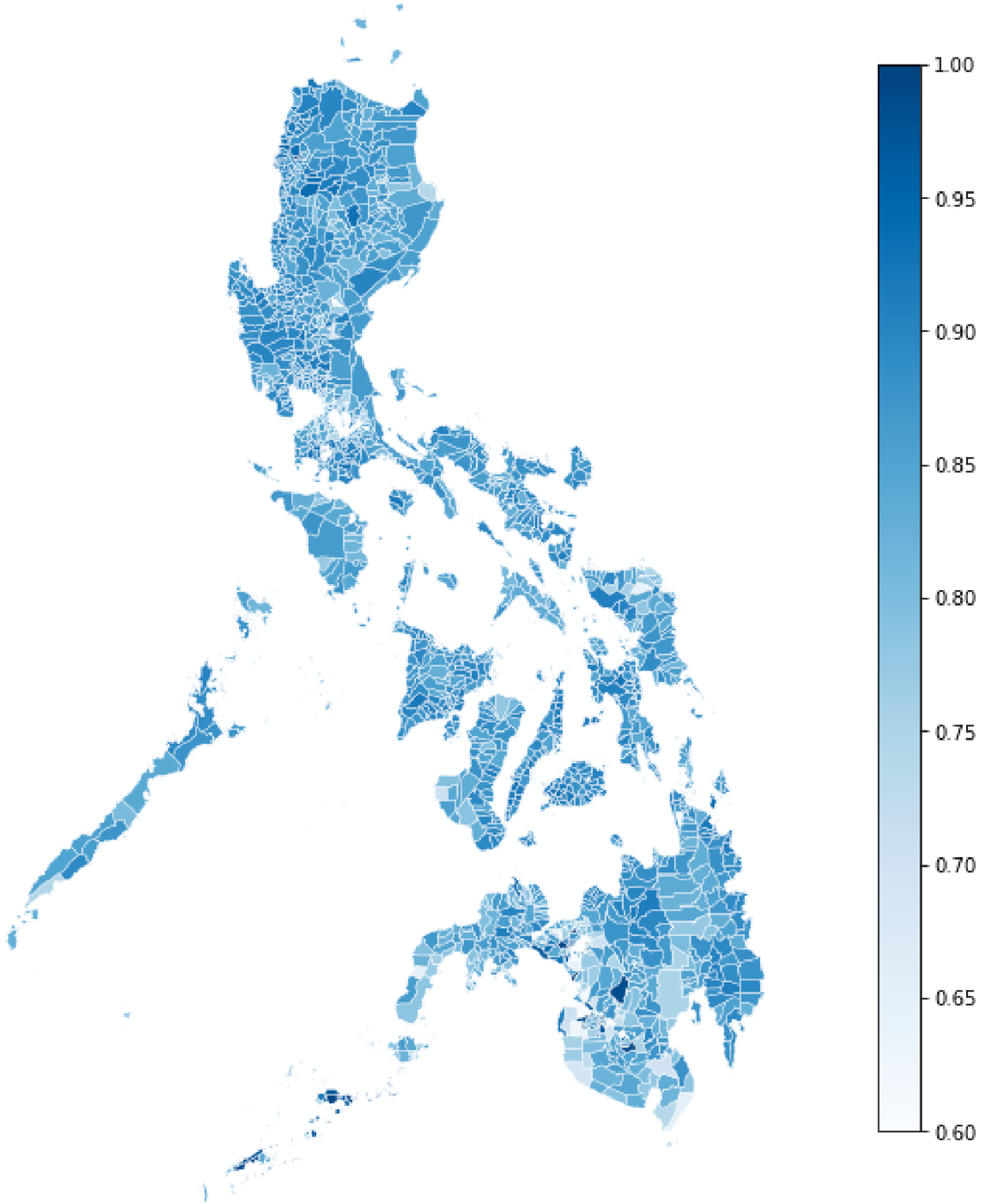
- Allowed 400,000 more registrations
- Total 4 million more than 2019



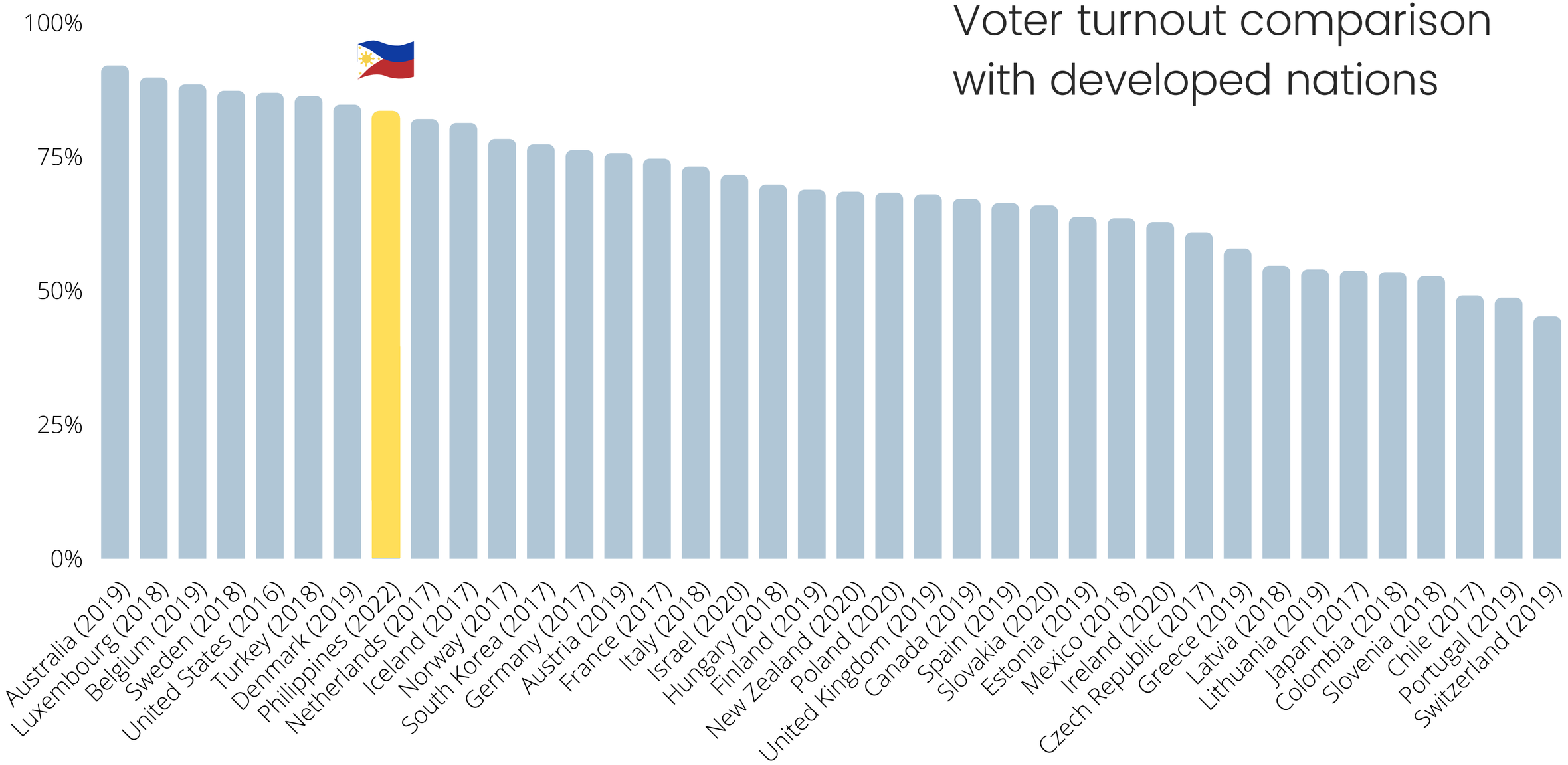
Voting Behavior

Voter Turnout:
83.4%

Voter Turnout is consistent across the country



Voter turnout comparison with developed nations

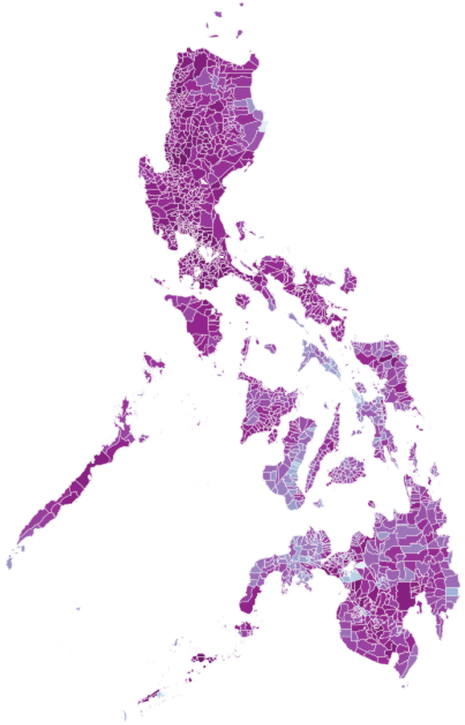


https://www.pewresearch.org/fact-tank/2020/11/03/in-past-elections-u-s-trailed-most-developed-countries-in-voter-turnout/

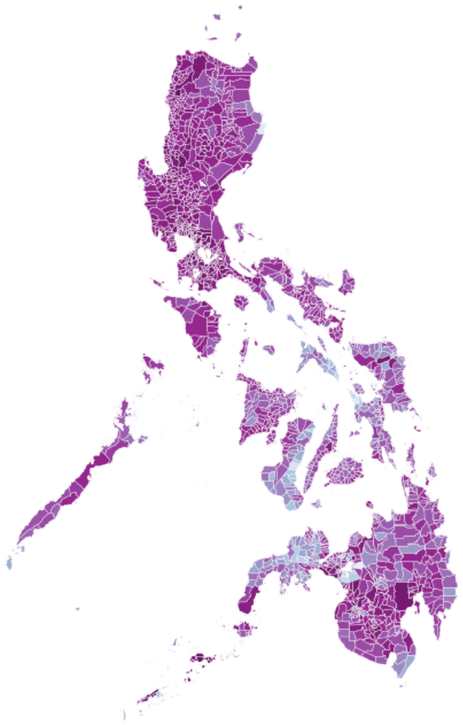
Fill-up Rate

valid votes cast / maximum possible votes

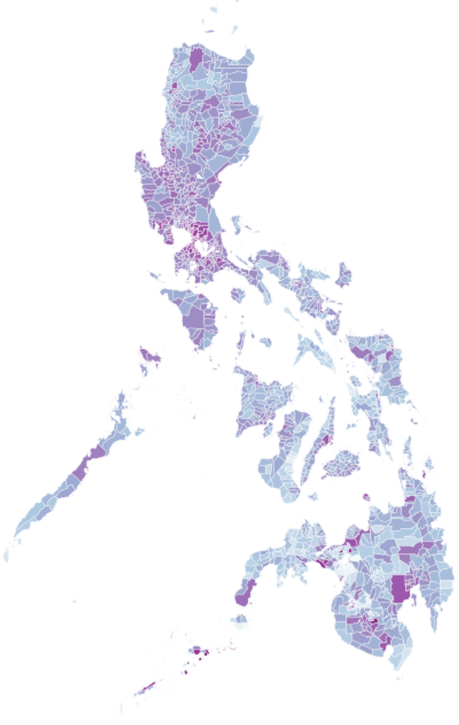
President
95.9%



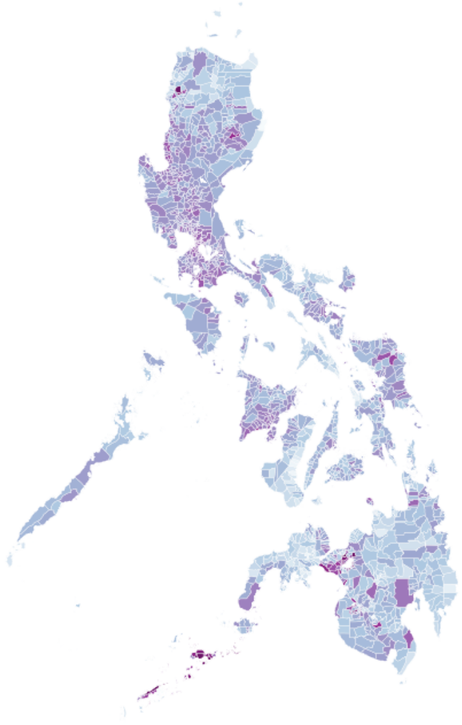
Vice-President
93.3%



Senator
64.5%



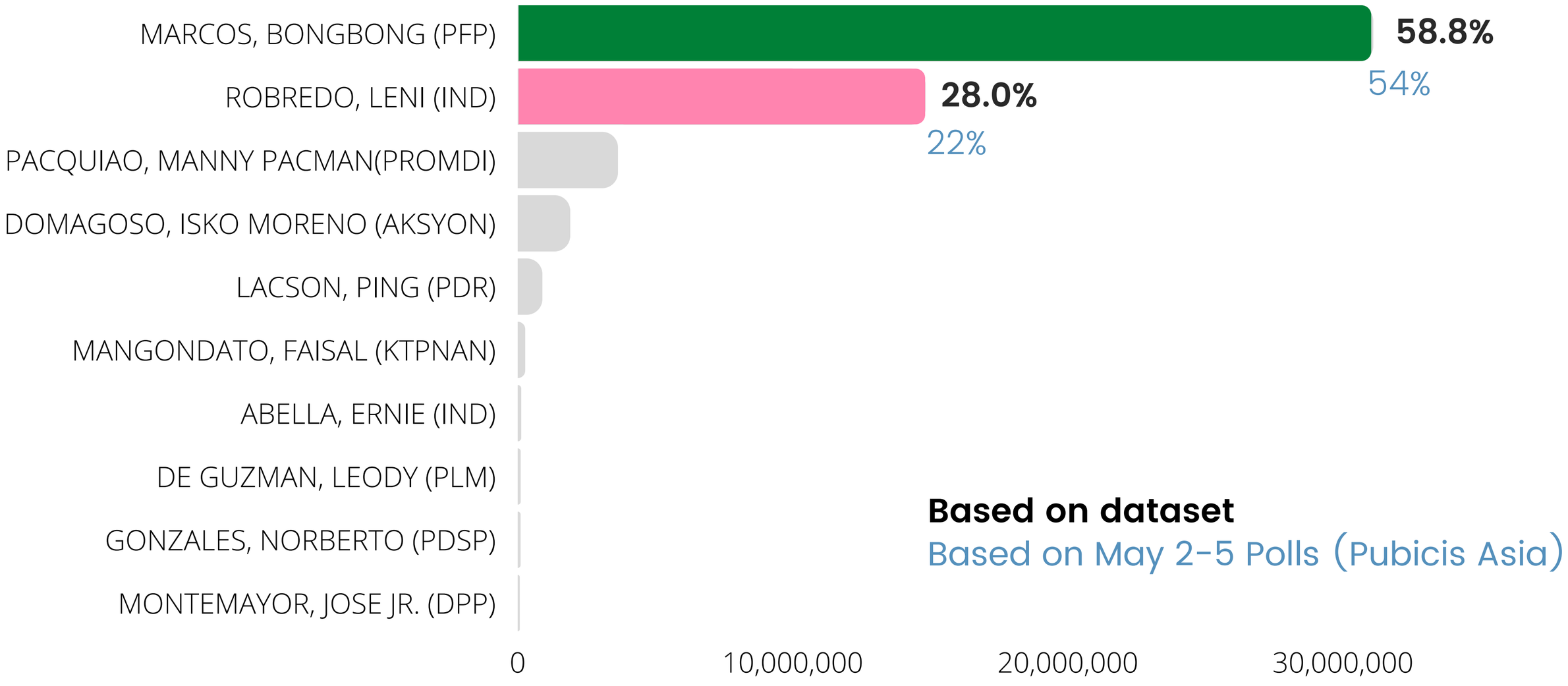
Party-List
65.5%



Voters are more concerned with the presidential and VP races.

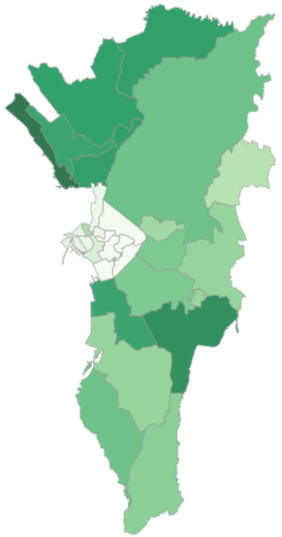
Election Results

Presidential Race



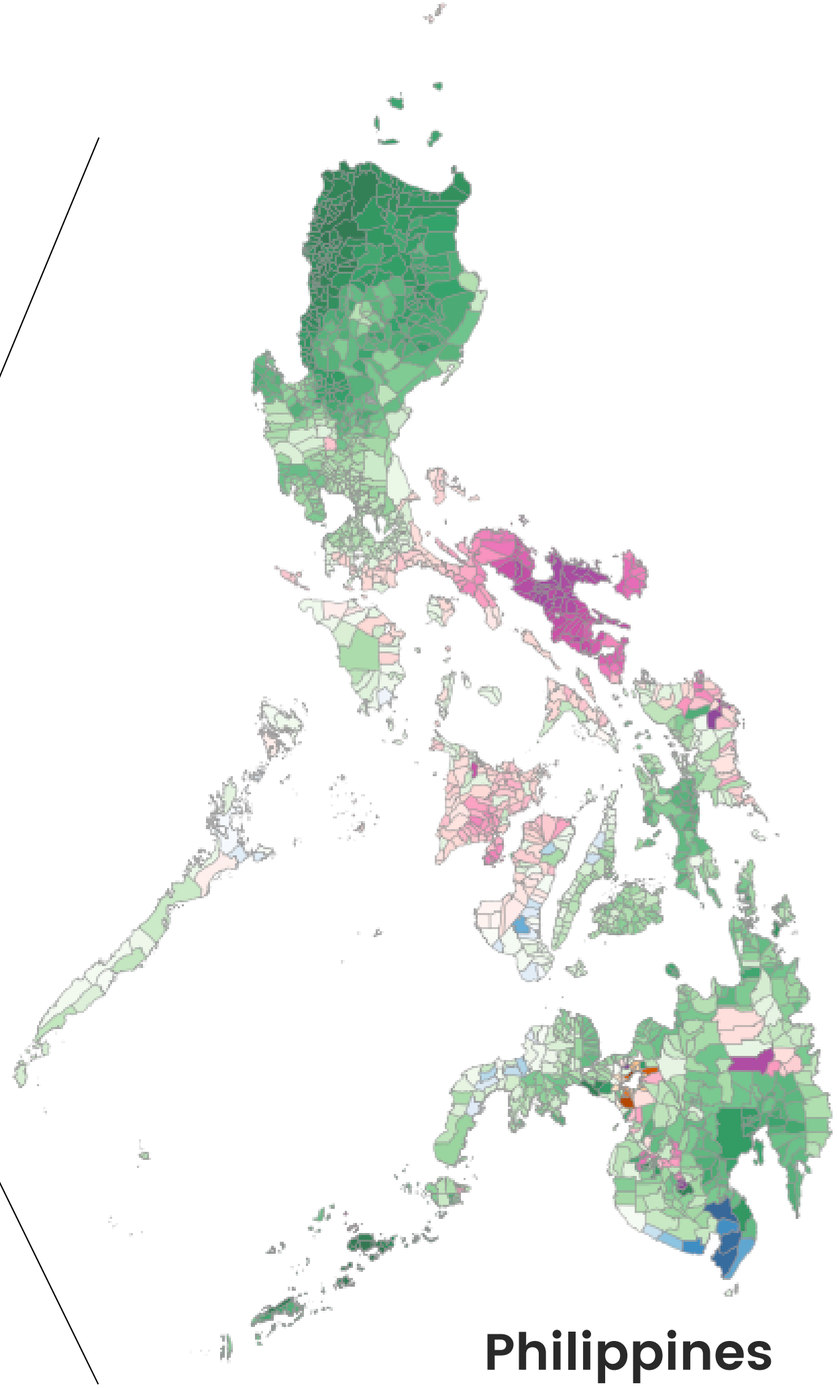
Presidential Race

- MARCOS, BONGBONG (PFP)
- ROBREDO, LENI (IND)
- PACQUIAO, MANNY PACMAN (PROMDI)
- MANGONDATO, FAISAL (KTPNAN)



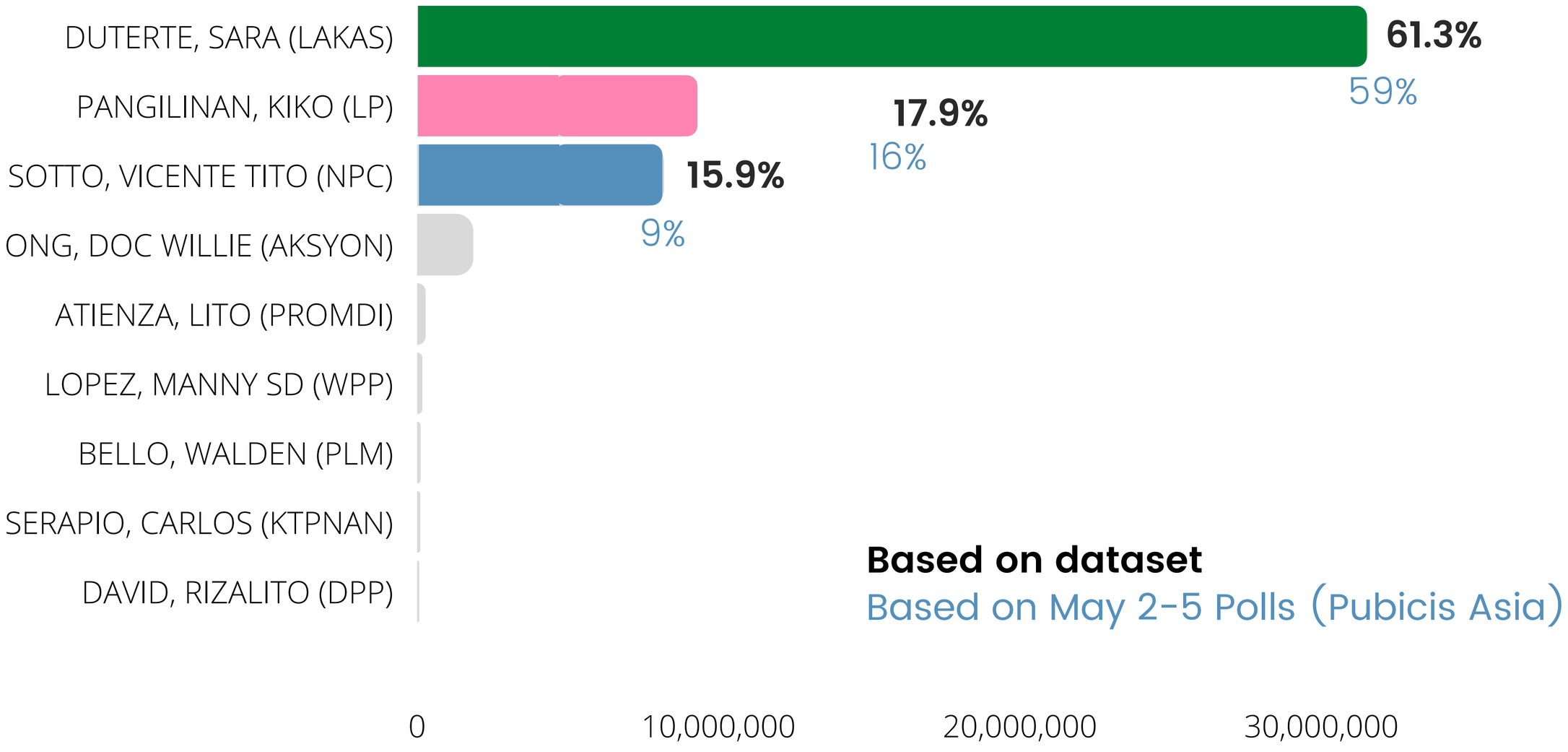
National Capital Region

Overseas Voting



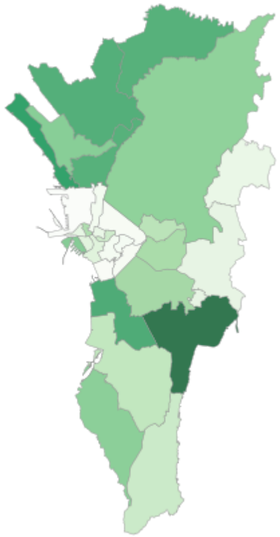
Philippines

Vice-Presidential Race



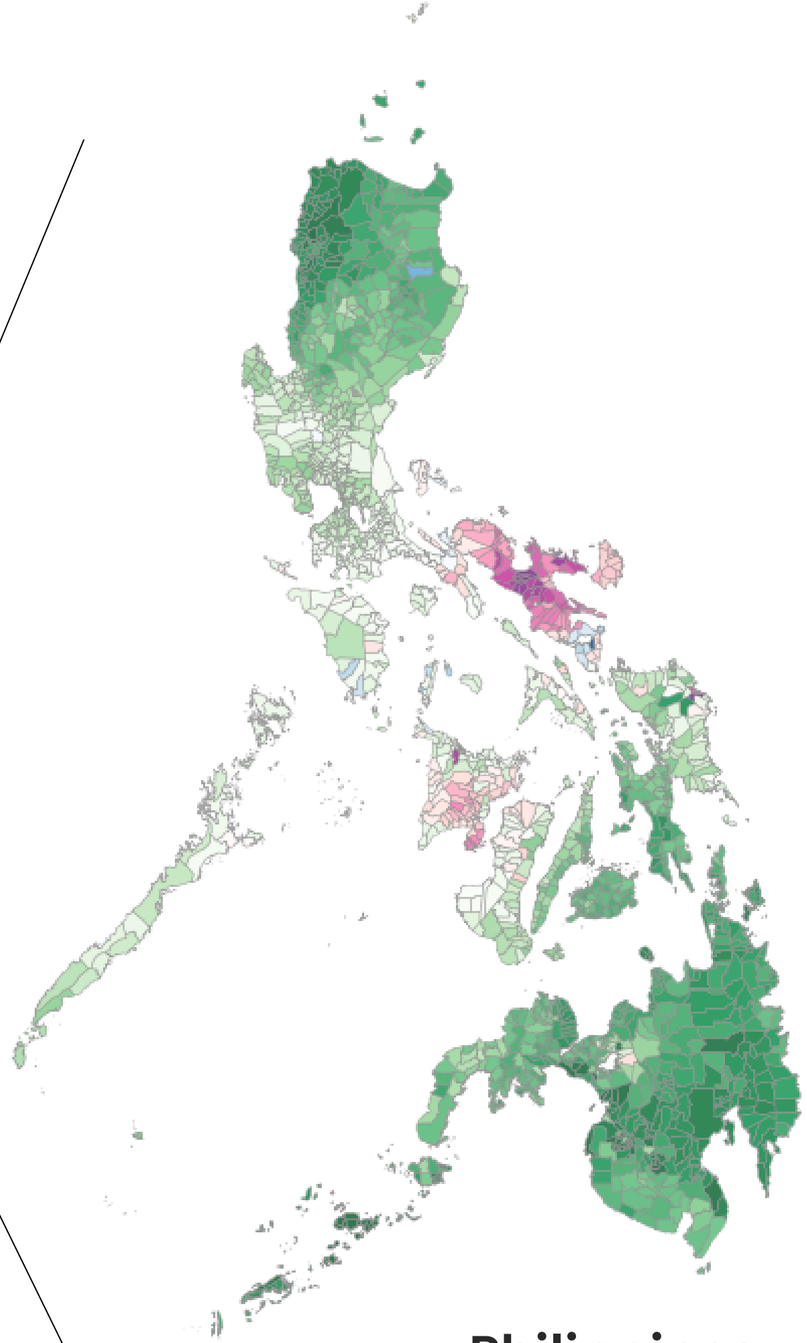
Vice-Presidential Race

- DUTERTE, SARA (LAKAS)
- PANGILINAN, KIKO (LP)
- SOTTO, VICENTE TITO (NPC)



National Capital Region

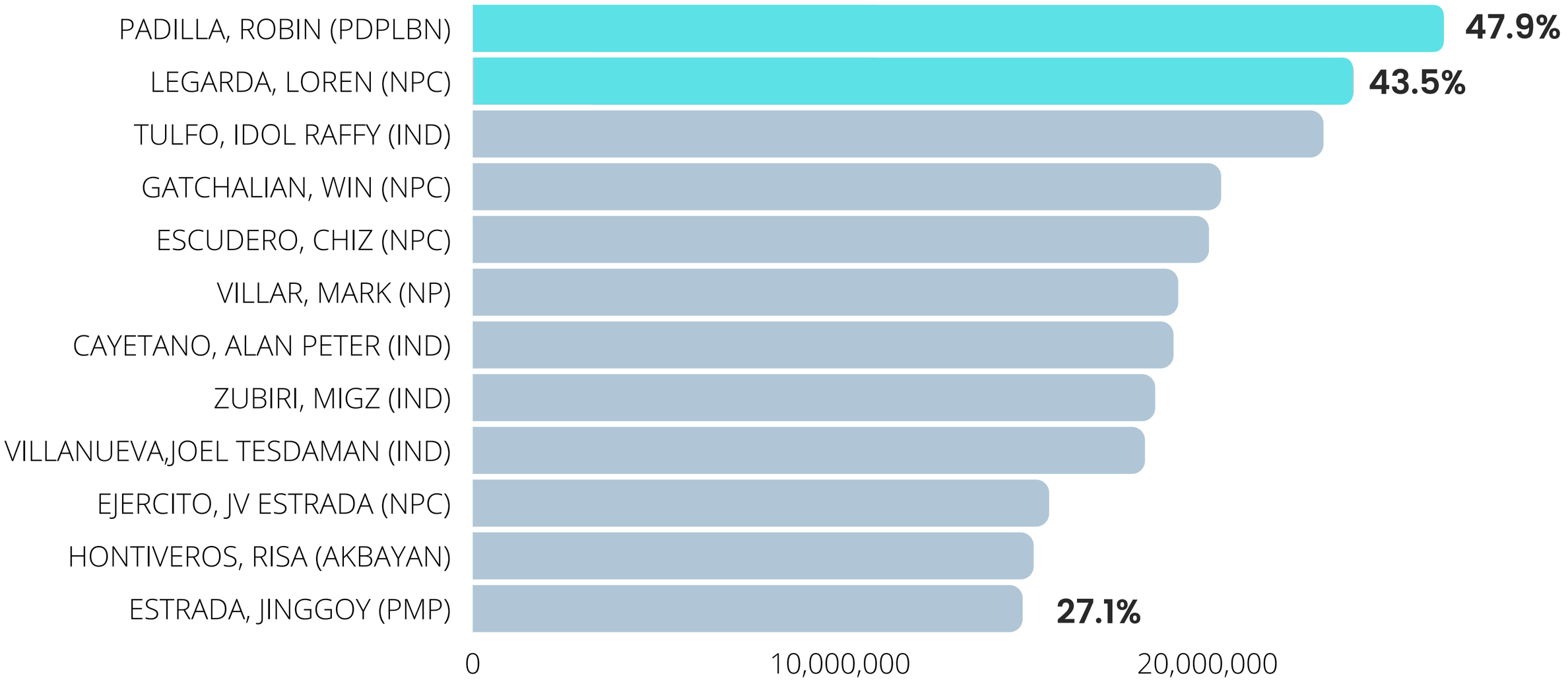
Overseas Voting



Philippines

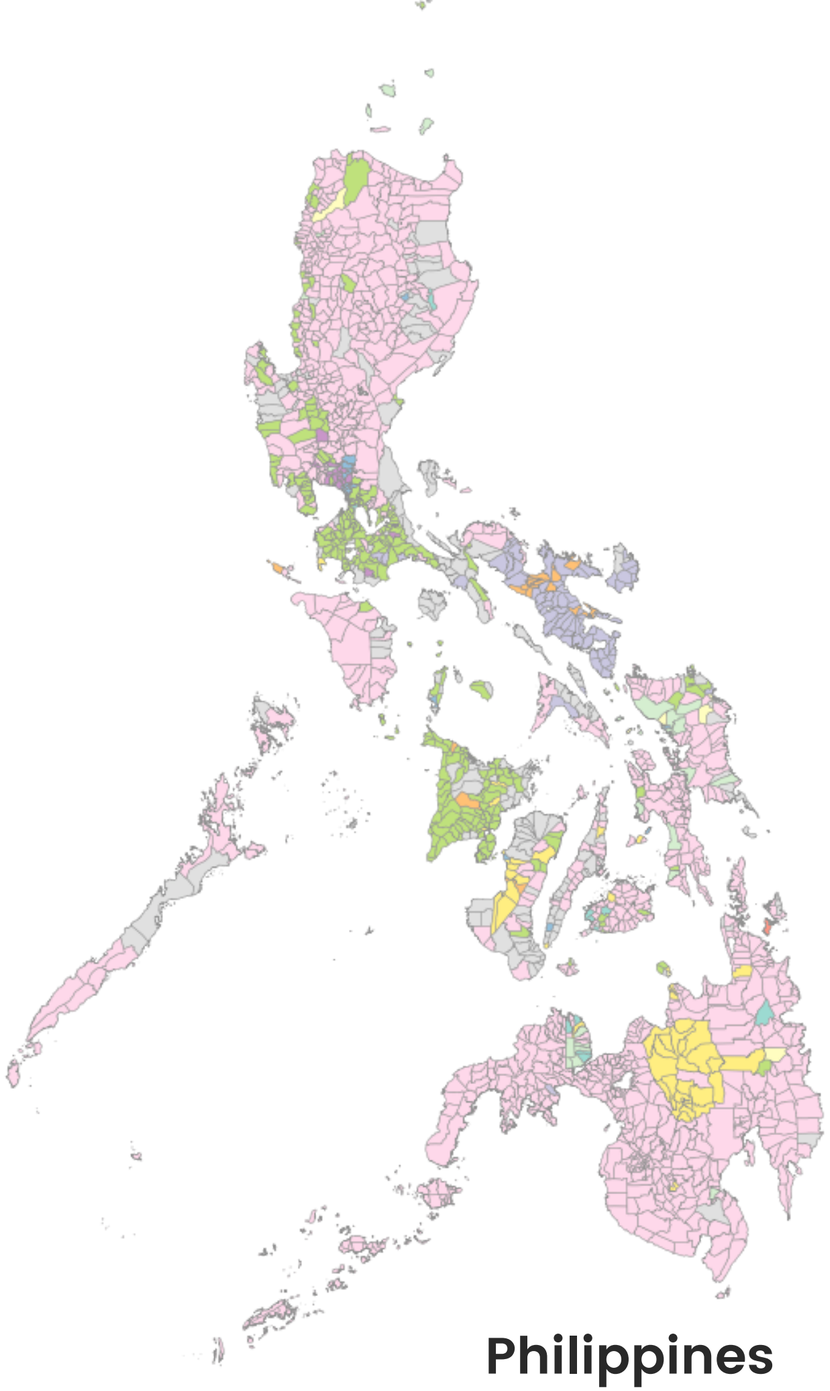
Senate Race

64 candidates vying for 12 seats

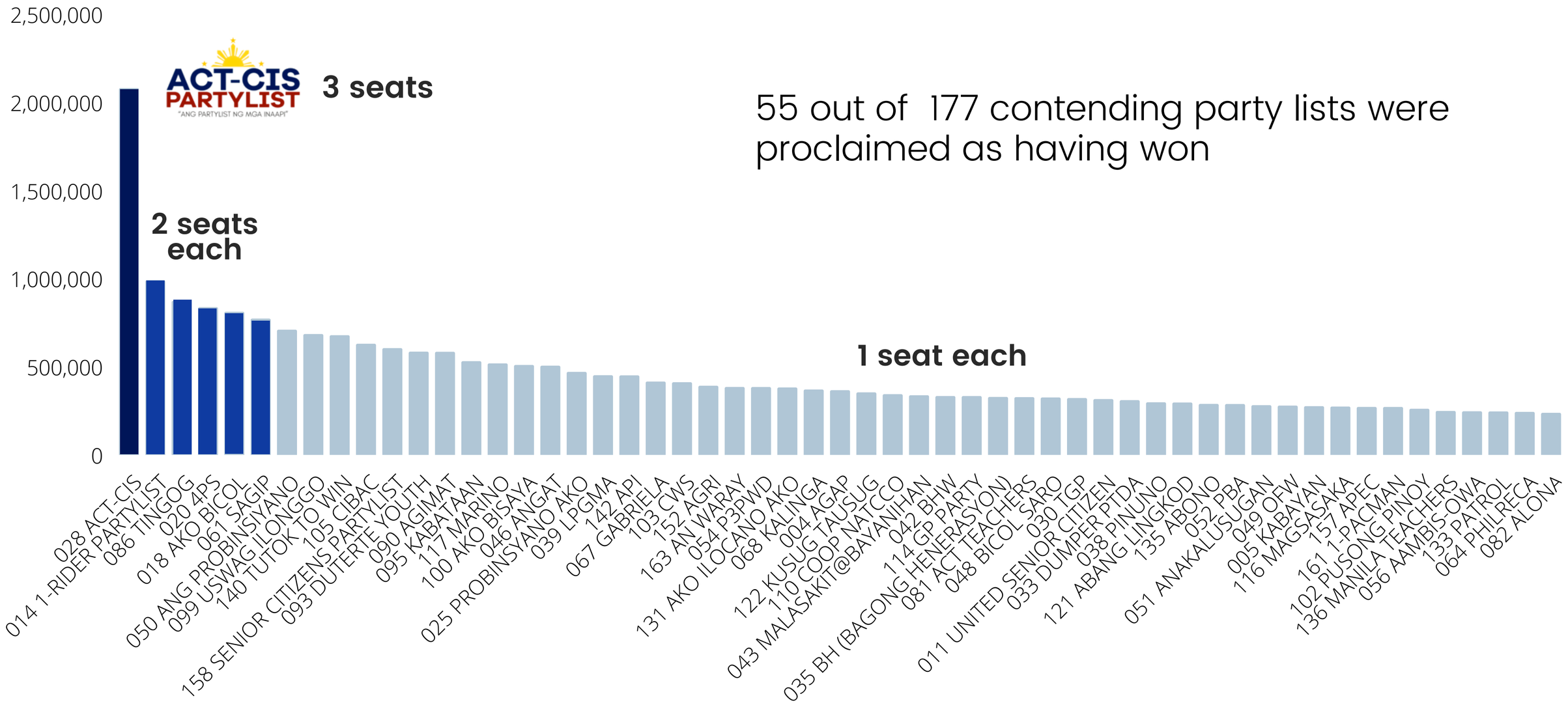


Senate Race

- CAYETANO, ALAN PETER (IND)
- EJERCITO, JV ESTRADA (NPC)
- ESCUDERO, CHIZ (NPC)
- ESTRADA, JINGGOY (PMP)
- GATCHALIAN, WIN (NPC)
- HONTIVEROS, RISA (AKBAYAN)
- LEGARDA, LOREN (NPC)
- PADILLA, ROBIN (PDPLBN)
- TULFO, IDOL RAFFY (IND)
- VILLANUEVA, JOEL TESDAMAN (IND)
- VILLAR, MARK (NP)
- ZUBIRI, MIGZ (IND)



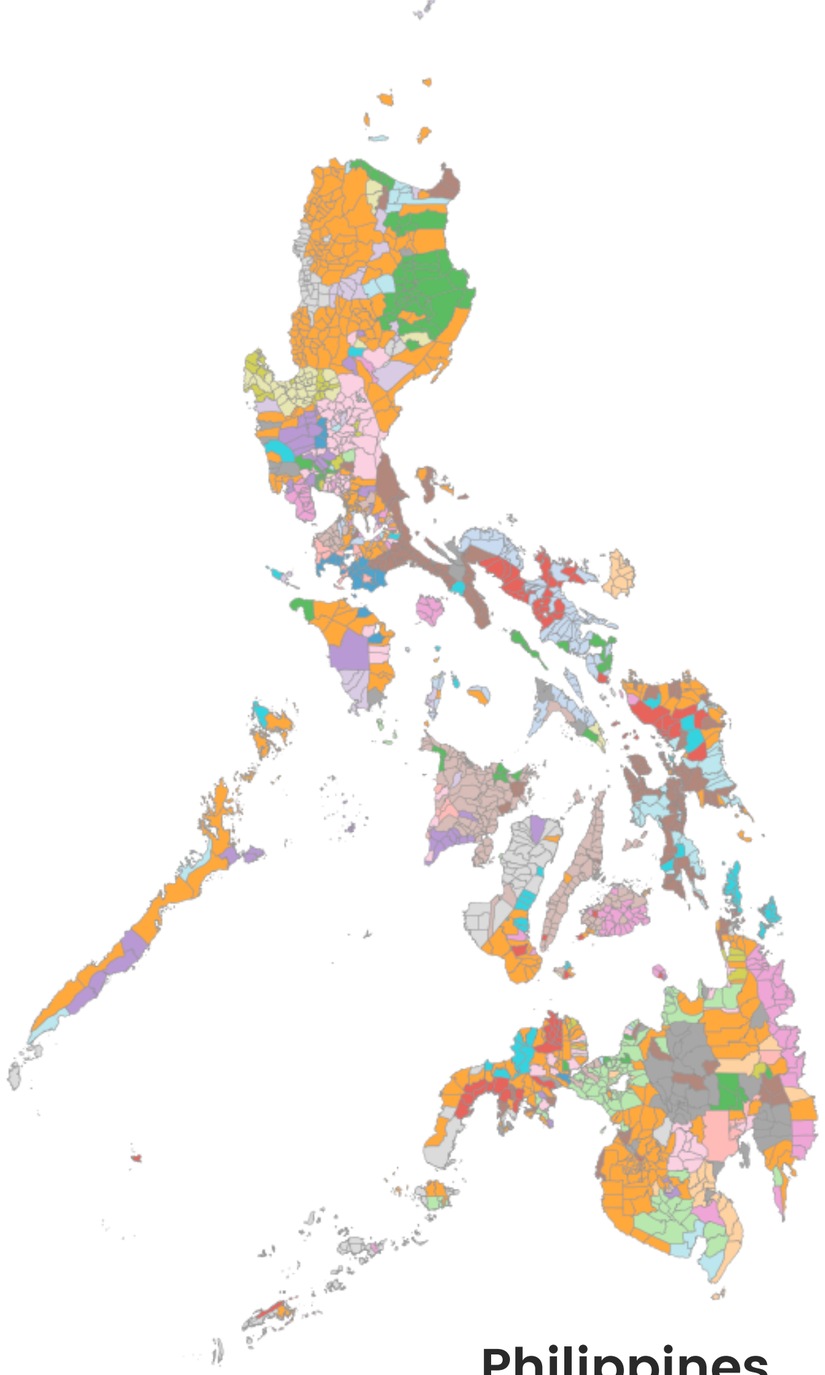
Party List Race



55 out of 177 contending party lists were proclaimed as having won

Party List Race

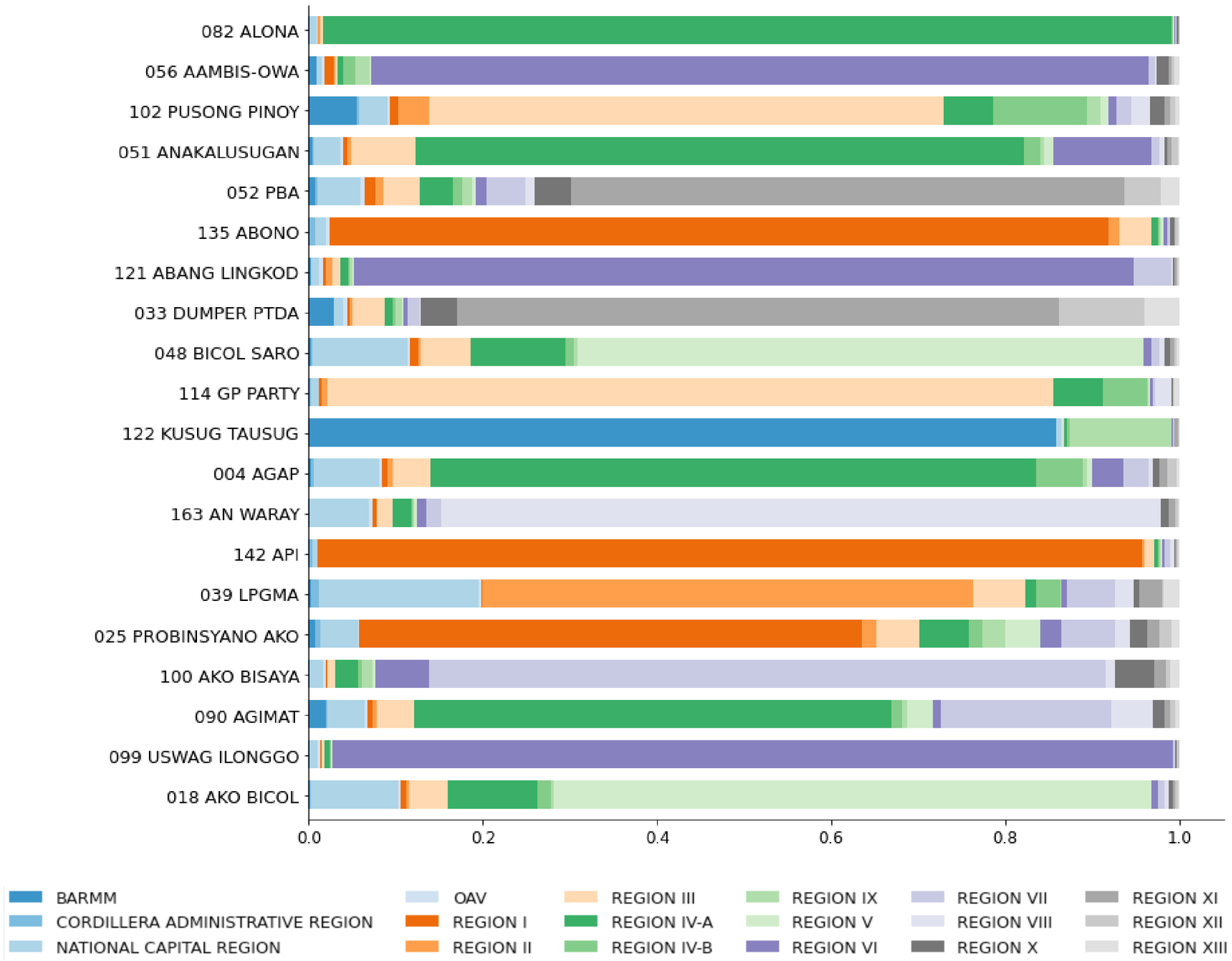
- 004 AGAP
- 005 KABAYAN
- 011 UNITED SENIOR CITIZEN
- 014 1-RIDER PARTYLIST
- 018 AKO BICOL
- 020 4PS
- 025 PROBINSYANO AKO
- 028 ACT-CIS
- 030 TGP
- 033 DUMPER PTDA
- 038 PINUNO
- 039 LPGMA
- 042 BHW
- 043 MALASAKIT@BAYANIHAN
- 046 ANGAT
- 048 BICOL SARO
- 049 OFW
- 050 ANG PROBINSIYANO
- 051 ANAKALUSUGAN
- 052 PBA
- 054 P3PWD
- 056 AAMBIS-OWA
- 061 SAGIP
- 064 PHILRECA
- 068 KALINGA
- 082 ALONA
- 086 TINGOG
- 090 AGIMAT
- 099 USWAG ILONGGO
- 100 AKO BISAYA
- 102 PUSONG PINOY
- 103 CWS
- 105 CIBAC
- 110 COOP NATCCO
- 114 GP PARTY
- 116 MAGSASAKA
- 117 MARINO
- 121 ABANG LINGKOD
- 122 KUSUG TAUSUG
- 131 AKO ILOCANO AKO
- 133 PATROL
- 135 ABONO
- 136 MANILA TEACHERS
- 140 TUTOK TO WIN
- 142 API
- 152 AGRI
- 157 APEC
- 158 SENIOR CITIZENS PARTYLIST
- 161 1-PACMAN
- 163 AN WARAY



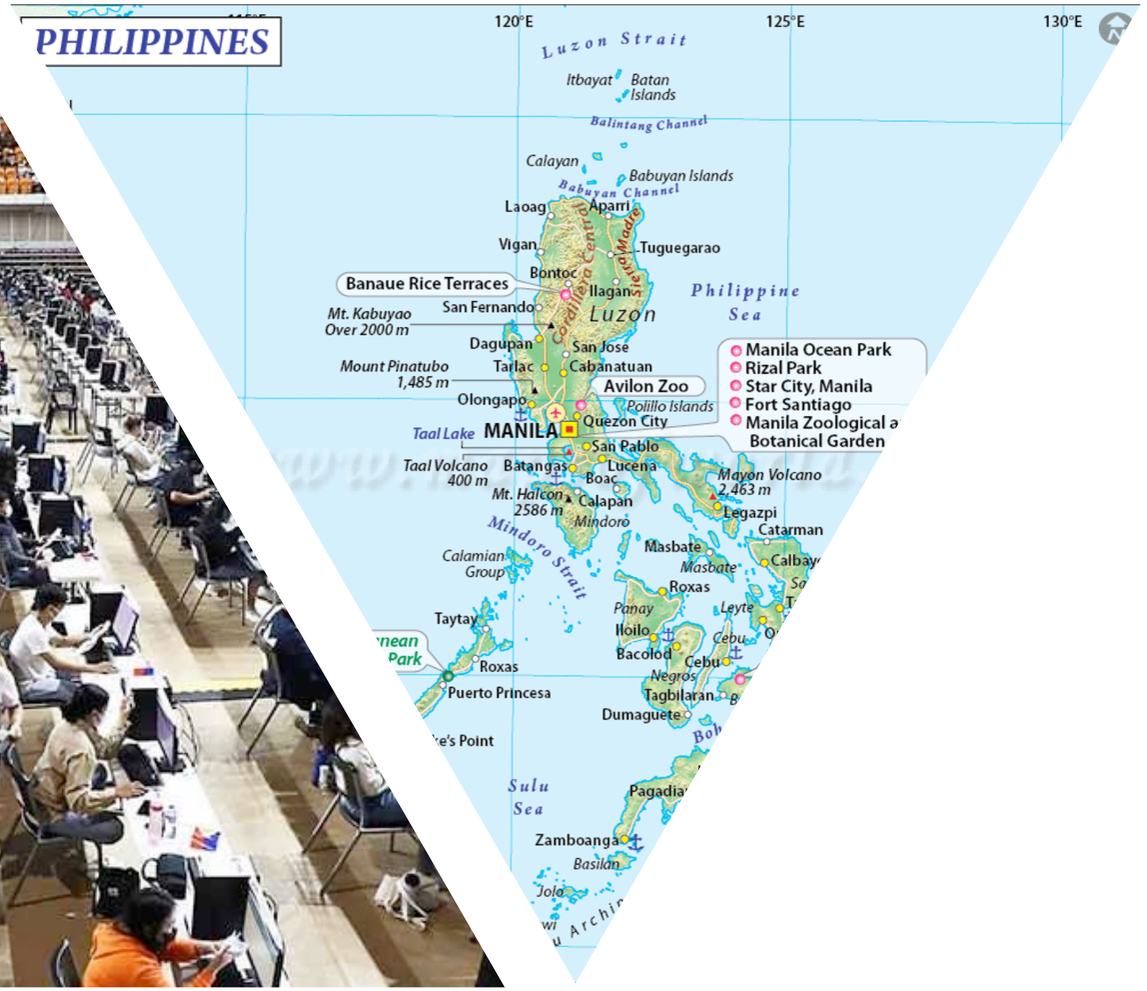
Philippines

Party List Race

20 of the winning party lists got 50% of votes from a single region.

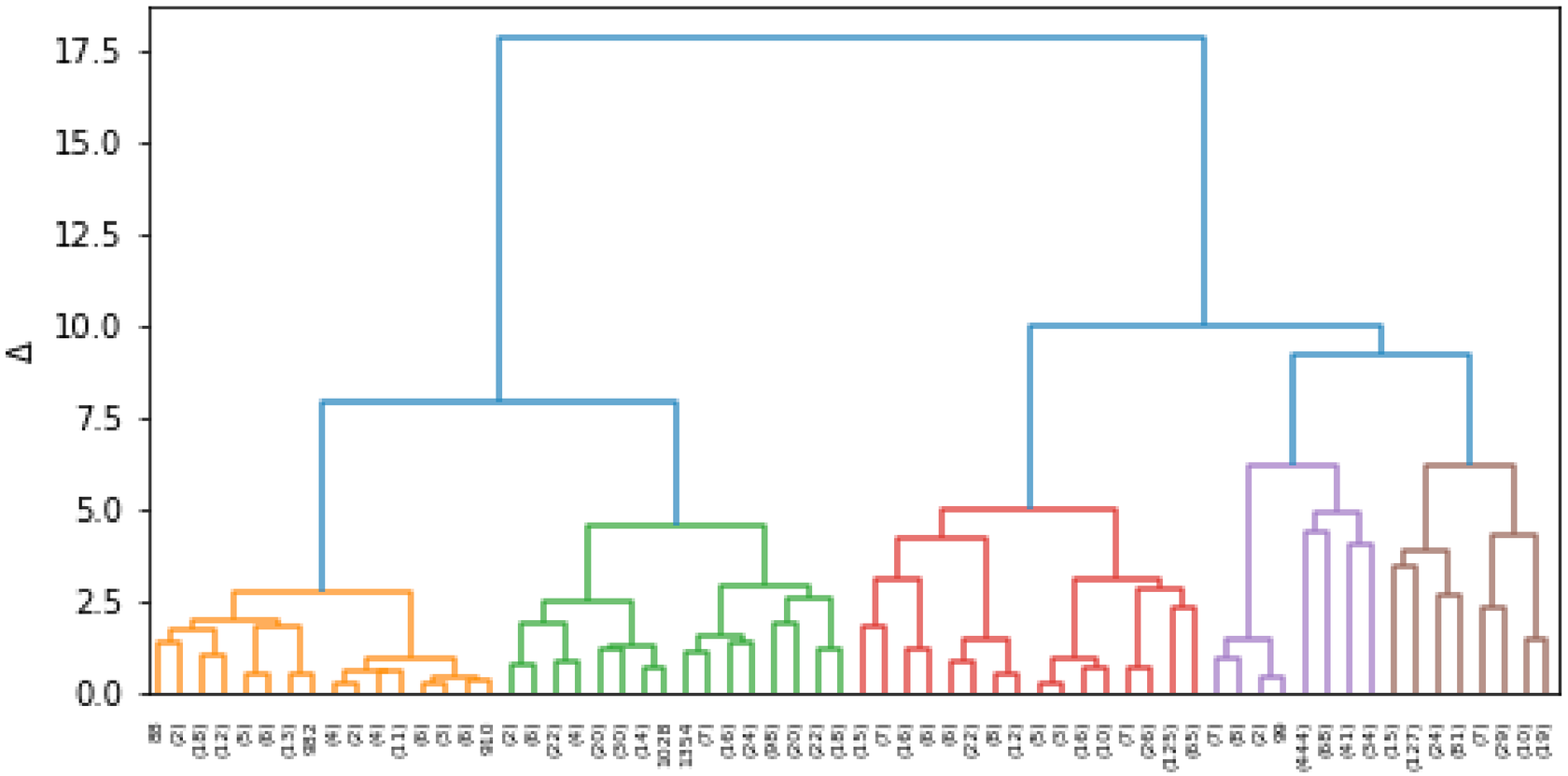


Cluster Analysis



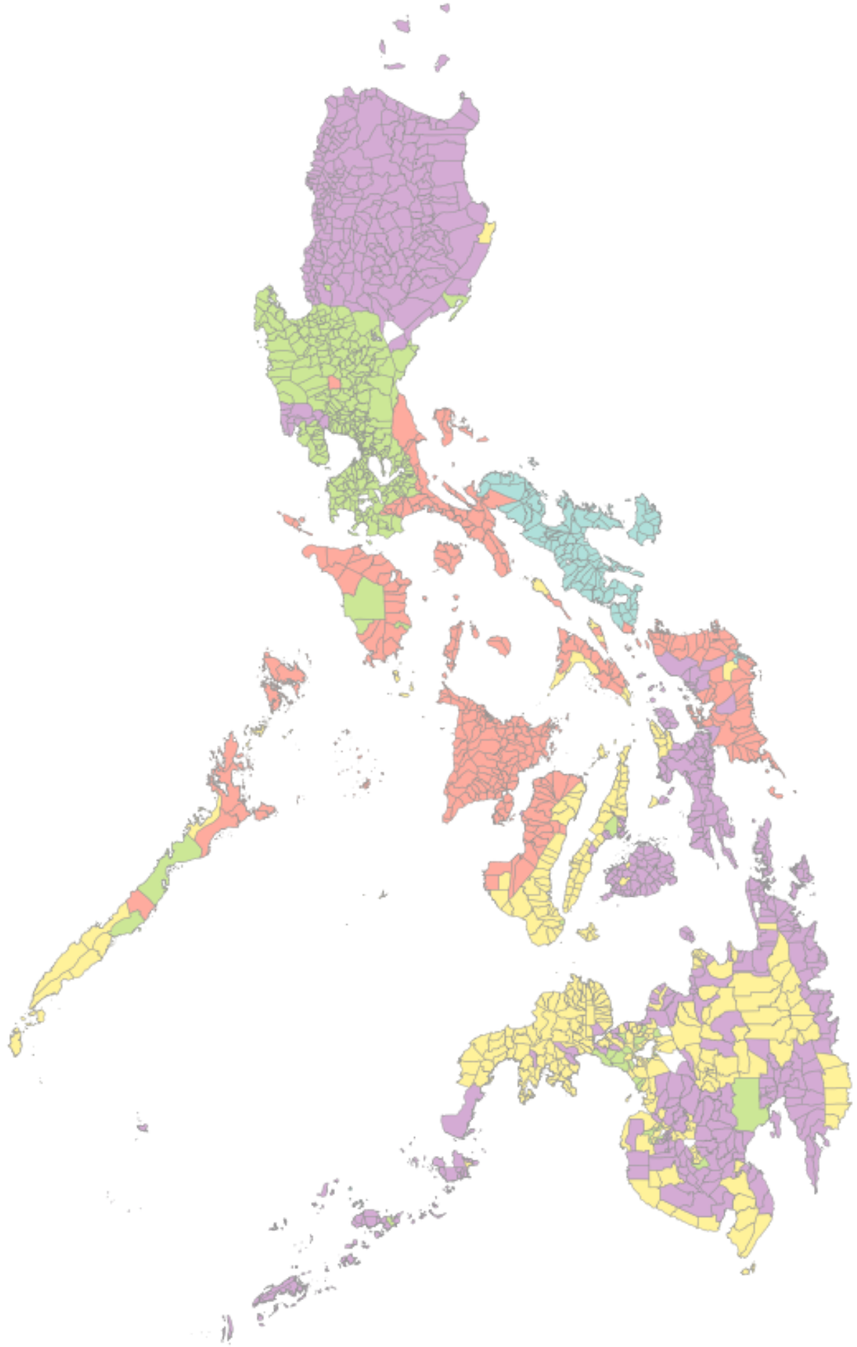
Hierarchical Clustering:
Ward's Method

An agglomerative clustering technique which minimizes the increase in Δ, or the "error sum of squares" after fusing pairs of clusters



5 Clusters

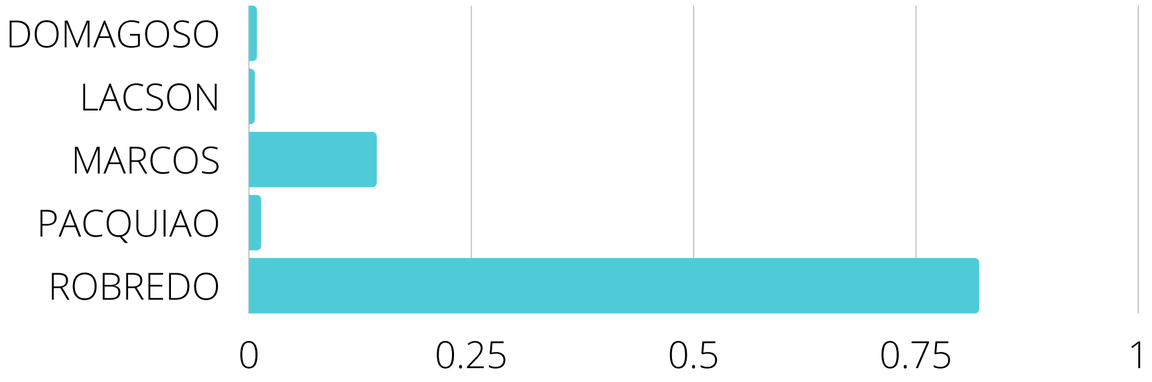
Cluster	No. of Municapilities
A	95
B	305
C	349
D	605
E	312



Cluster A

"Leni's Bailiwick"

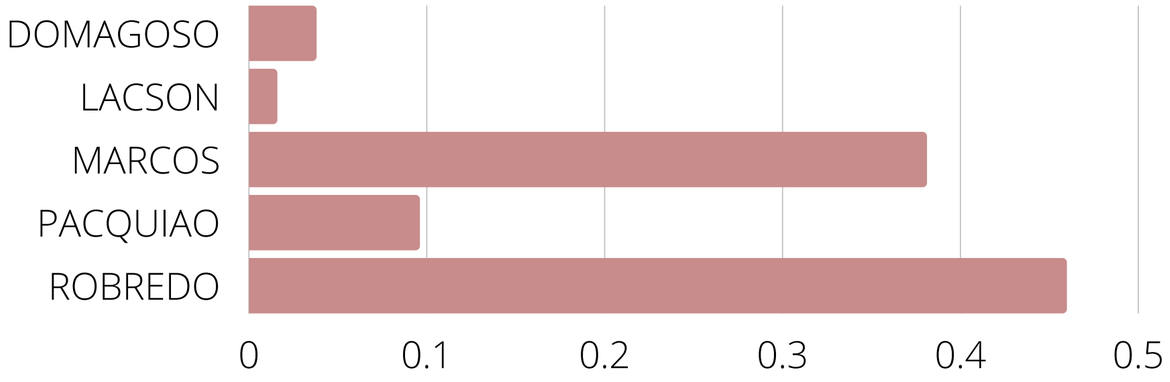
- Bicol Region
- 82% voted for Robredo
- Smallest voting cluster at 3.3M

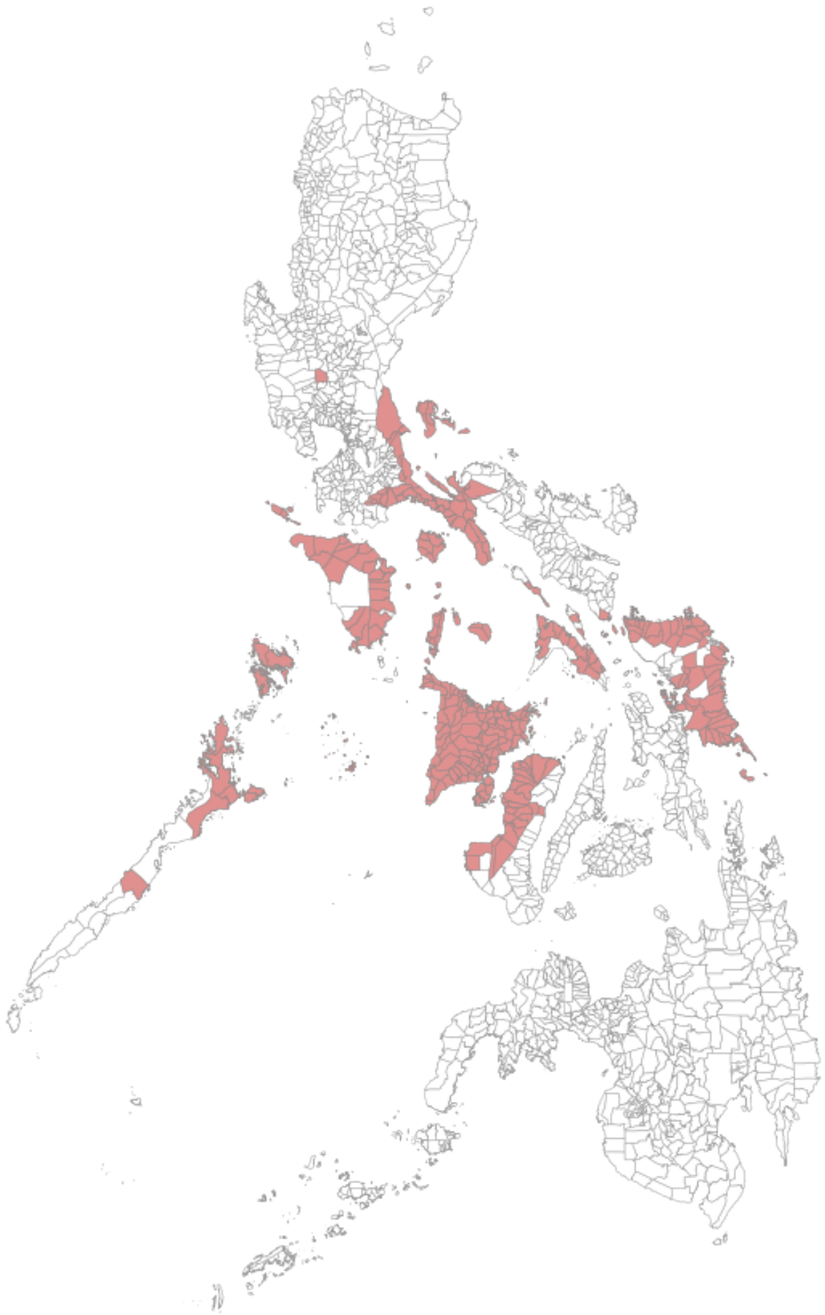


Cluster B

"Split down the Middle"

- Scattered around Vizayas and S. Luzon
- Diverse, with slight preference for Leni
- 9.2M voters

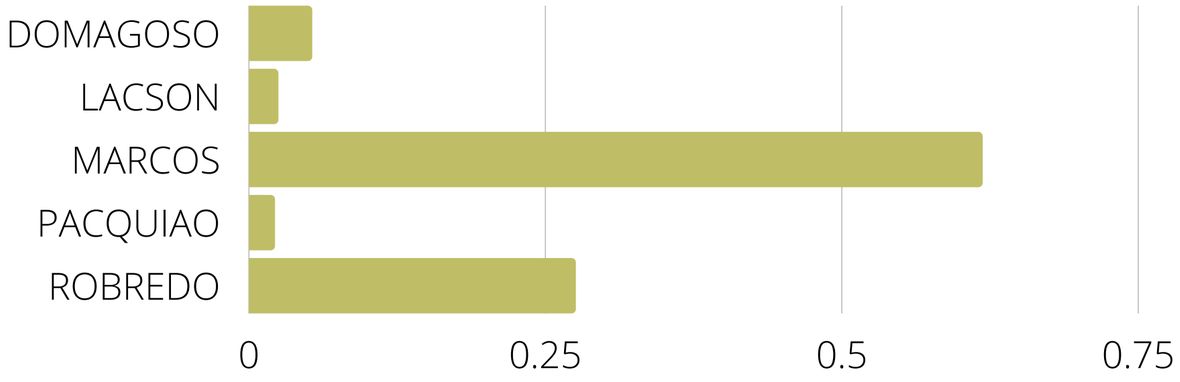


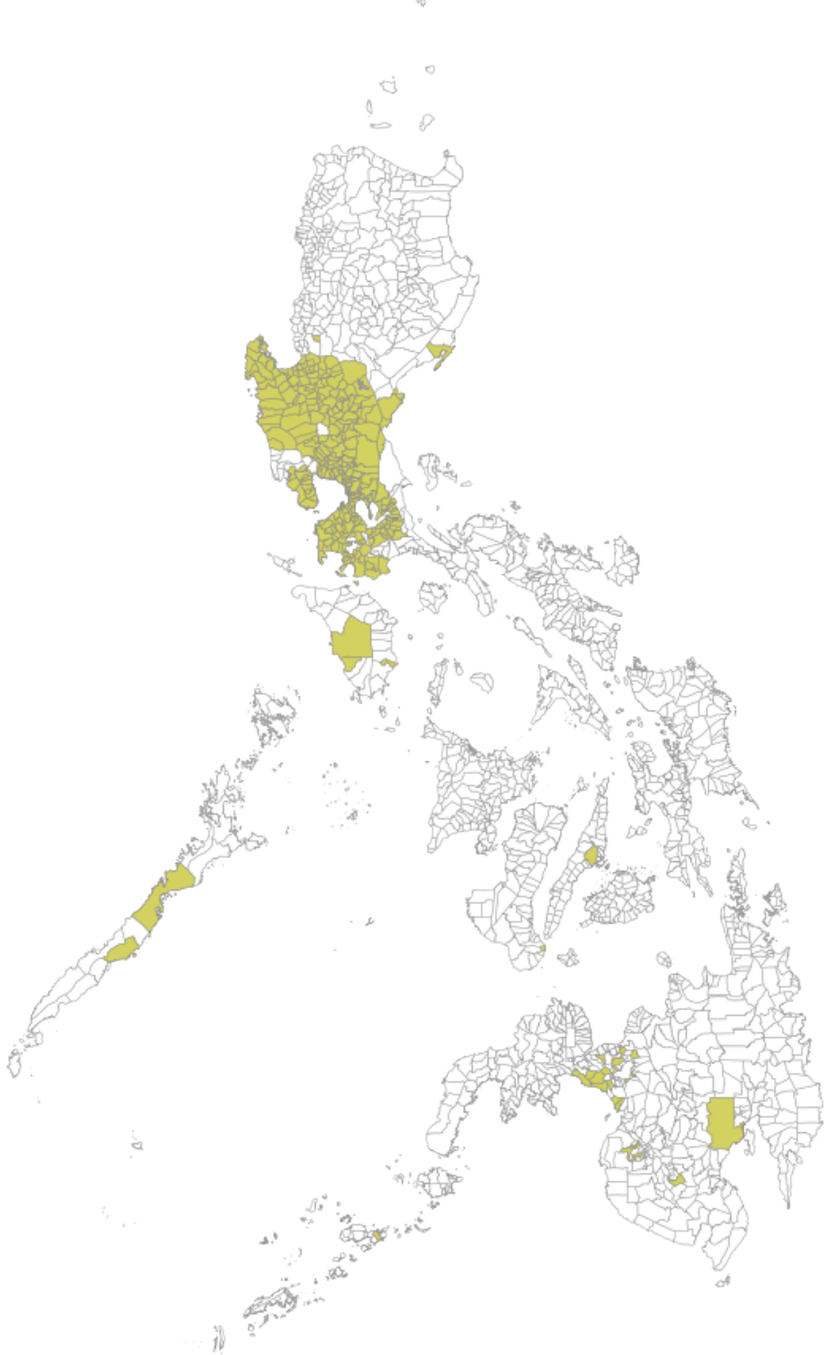


Cluster C

"Population Centers"

- Vote-rich areas with 27.3M voters
- NCR and surrounding areas, plus Cebu and Davao
- Prefer Marcos

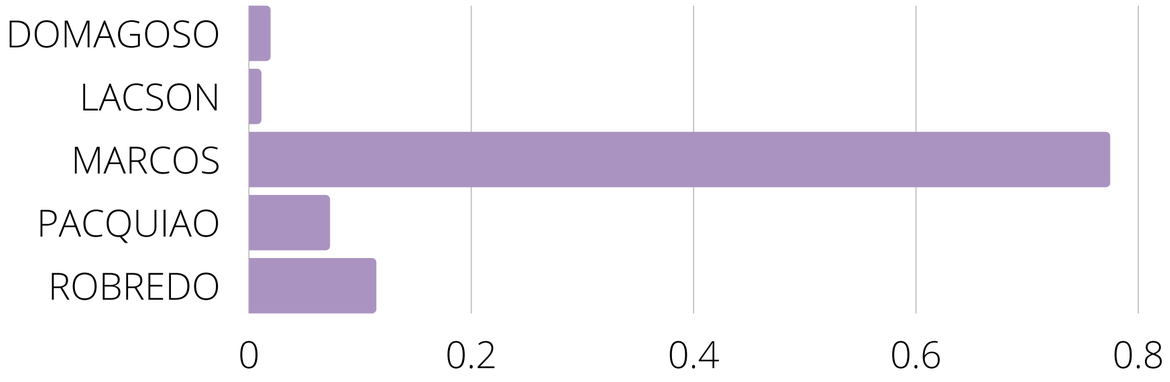


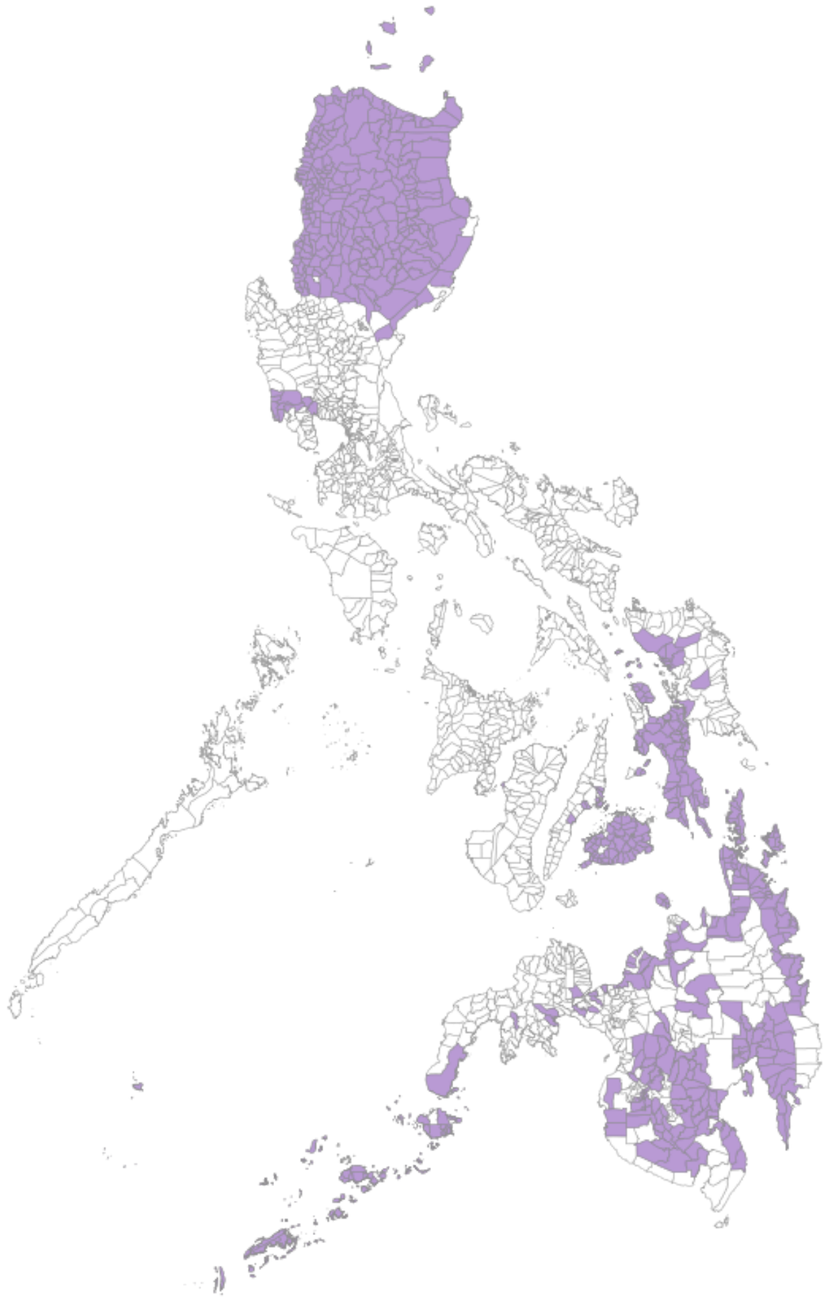


Cluster D

"North-South Alliance"

- Combines the bailiwicks of Marcos and Duterte
- Solidly in favor of Marcos
- 17.5M voters

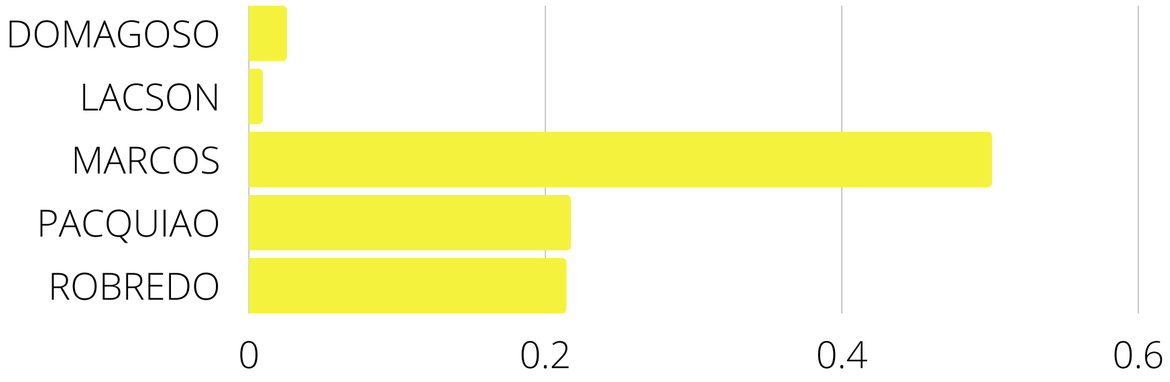


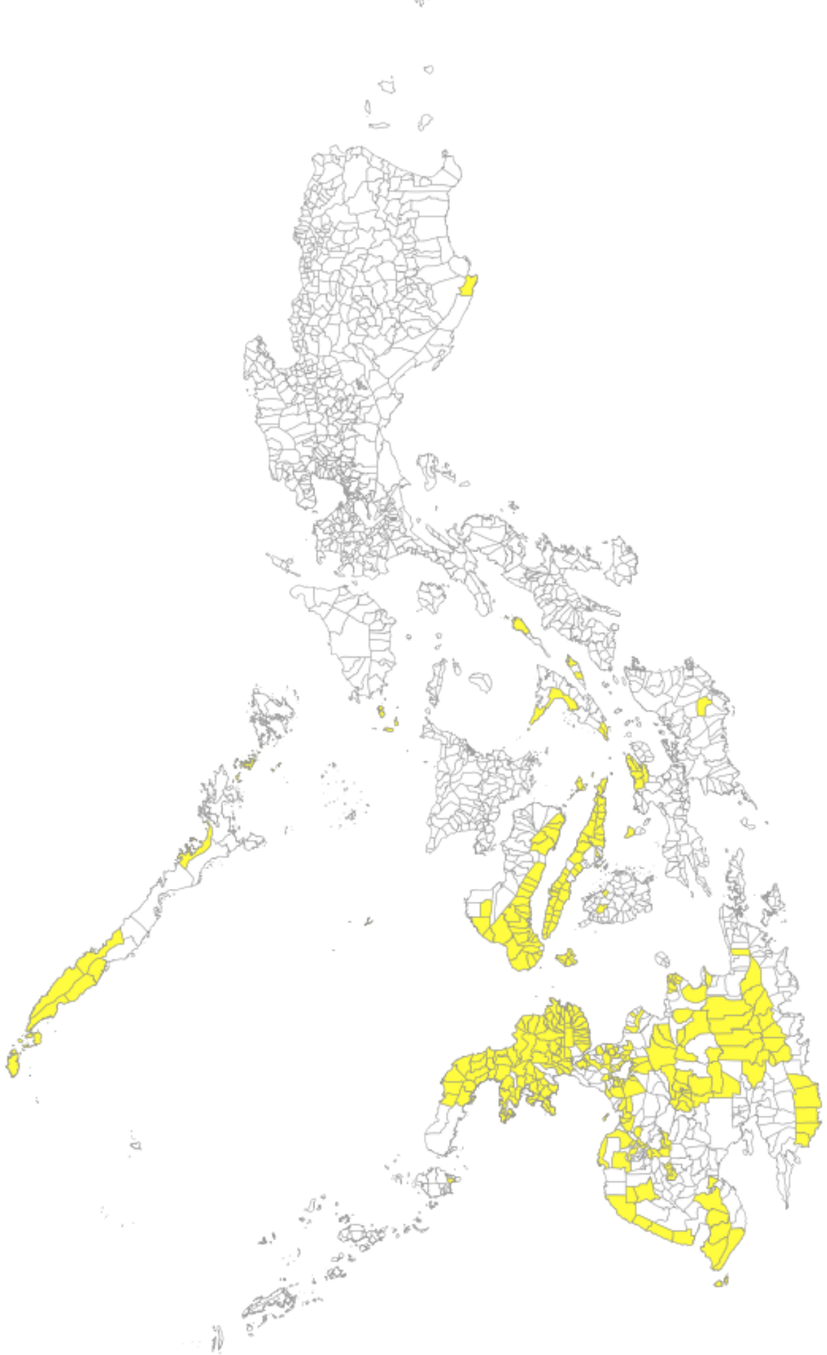


Cluster E

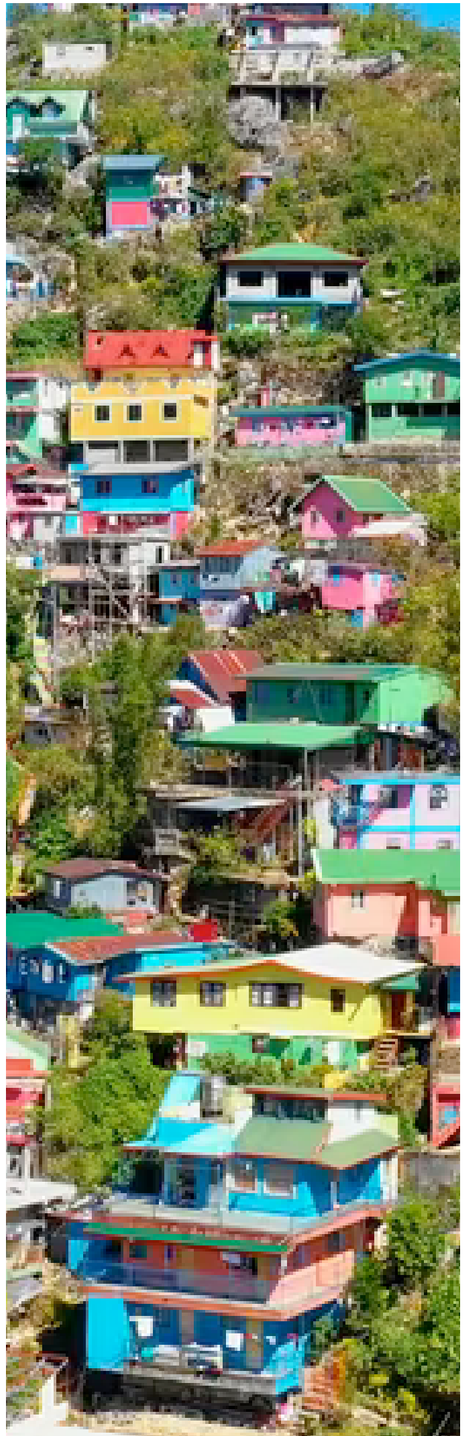
"The Rural South"

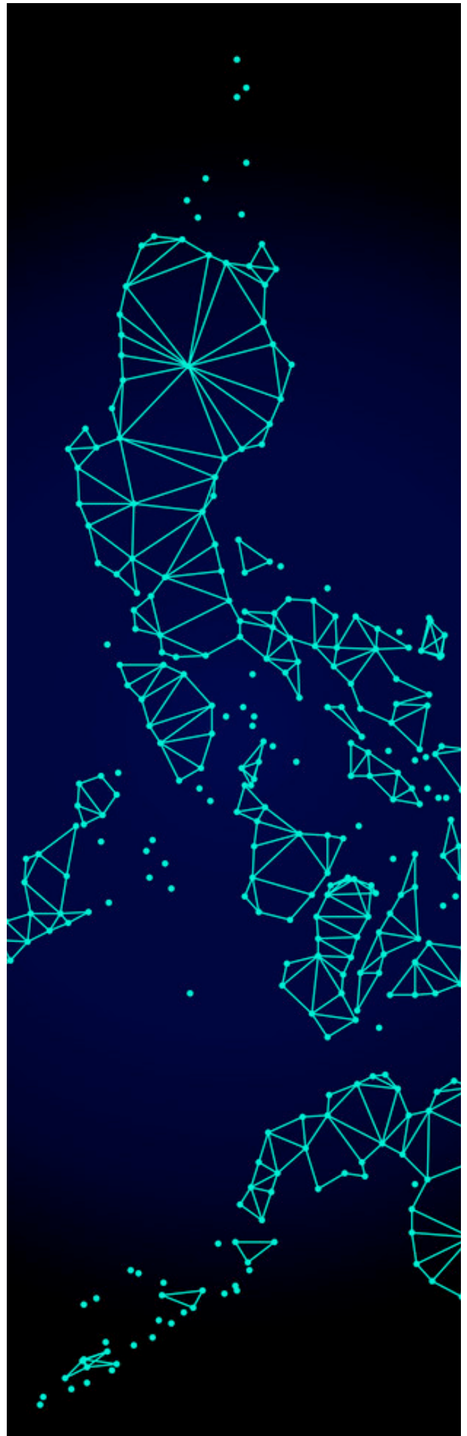
- Smallest municipalities, on average
- Willing to consider Pacquio
- 8.7M voters





Network Analysis





Senatorial Slates

Aksyon Demokratiko

#	Name	Party
6.	Carl Balita	Aksyon
13.	John Castriciones*	PDP–Laban
32.	Samira Gutoc	Aksyon
56.	Jopet Sison	Aksyon

MP3 Alliance

#	Name	Party
7.	Lutgardo Barbo	PDP–Laban
11.	Jejomar Binay*	UNA
16.	Neri Colmenares*	Makabayan
22.	JV Ejercito*	NPC
25.	Francis Escudero*	NPC
30.	Win Gatchalian*	NPC
31.	Richard Gordon*	Bagumbayan
37.	Elmer Labog*	Makabayan
40.	Loren Legarda*	NPC
59.	Raffy Tulfo*	Independent
61.	Joel Villanueva*	Independent
64.	Juan Miguel Zubiri*	Independent

Laban ng Masa - Labor and Ecology Advocates for Democracy (LEAD)[83]

#	Name	Party
4.	Teddy Baguilat*	Liberal
12.	Roy Cabonegro	PLM
16.	Neri Colmenares*	Makabayan
17.	David d'Angelo	PLM
18.	Leila de Lima*	Liberal
21.	Chel Diokno*	KANP
26.	Luke Espiritu	PLM
32.	Samira Gutoc*	Aksyon
34.	Risa Hontiveros*	Akbayan
37.	Elmer Labog*	Makabayan
45.	Sonny Matula*	Independent

Lacson–Sotto slate

#	Name	Party
22.	JV Ejercito	NPC
23.	Guillermo Eleazar	Reporma
25.	Francis Escudero	NPC
33.	Gregorio Honasan*	Independent
40.	Loren Legarda	NPC
48.	Minguita Padilla	Reporma
52.	Emmanuel Piñol	NPC
59.	Raffy Tulfo*	Independent
61.	Joel Villanueva*	Independent

Other non-independents

#	Name	Party
10.	Silvestre Bello Jr.	PDP–Laban
19.	Monsour del Rosario	Reporma
20.	Fernando Diaz	PPP
28.	Baldomero Falcone	DPP
42.	Emily Mallillin	PPM
46.	Marieta Mindalano-Adam	Katipunan
47.	Leo Olarte	Bigkis Pinoy
55.	Nur-Ana Sahidulla	PDDS

UniTeam Alliance

#	Name	Party
8.	Herbert Bautista	NPC
27.	Jinggoy Estrada	PMP
29.	Larry Gadon	KBL
30.	Win Gatchalian	NPC
33.	Gregorio Honasan*	Independent
40.	Loren Legarda*	NPC
43.	~~Rodante Marcoleta~~*	PDP–Laban
49.	Robin Padilla*	PDP–Laban
54.	Harry Roque	PRP
57.	Gilbert Teodoro	PRP
62.	Mark Villar	Nacionalista
64.	Juan Miguel Zubiri	Independent

Independents not in tickets

#	Name	Party
1.	Abner Afuang	Independent
3.	Jesus Arranza	Independent
5.	Agnes Bailen	Independent
14.	Alan Peter Cayetano	Independent
35.	RJ Javellana	Independent
36.	Nur-Mahal Kiram	Independent
41.	Ariel Lim	Independent
44.	Francis Leo Marcos	Independent
60.	Rey Valeros	Independent
63.	Carmen Zubiaga	Independent

Labor Party Philippines

#	Name	Party
2.	Ibrahim Albani	WPP
15.	Melchor Chavez	WPP

Partido Maharlika

#	Name	Party
24.	Ernie Ereño	PM
53.	Willie Ricablanca Jr.	PM

Team Robredo–Pangilinan[84]

#	Name	Party
4.	Teddy Baguilat	Liberal
11.	Jejomar Binay*	UNA
18.	Leila de Lima	Liberal
21.	Chel Diokno	KANP
25.	Francis Escudero*	NPC
31.	Richard Gordon*	Bagumbayan
34.	Risa Hontiveros	Akbayan
38.	Alex Lacson	Ang Kapatiran
45.	Sonny Matula	Independent
58.	Antonio Trillanes	Liberal
61.	Joel Villanueva*	Independent

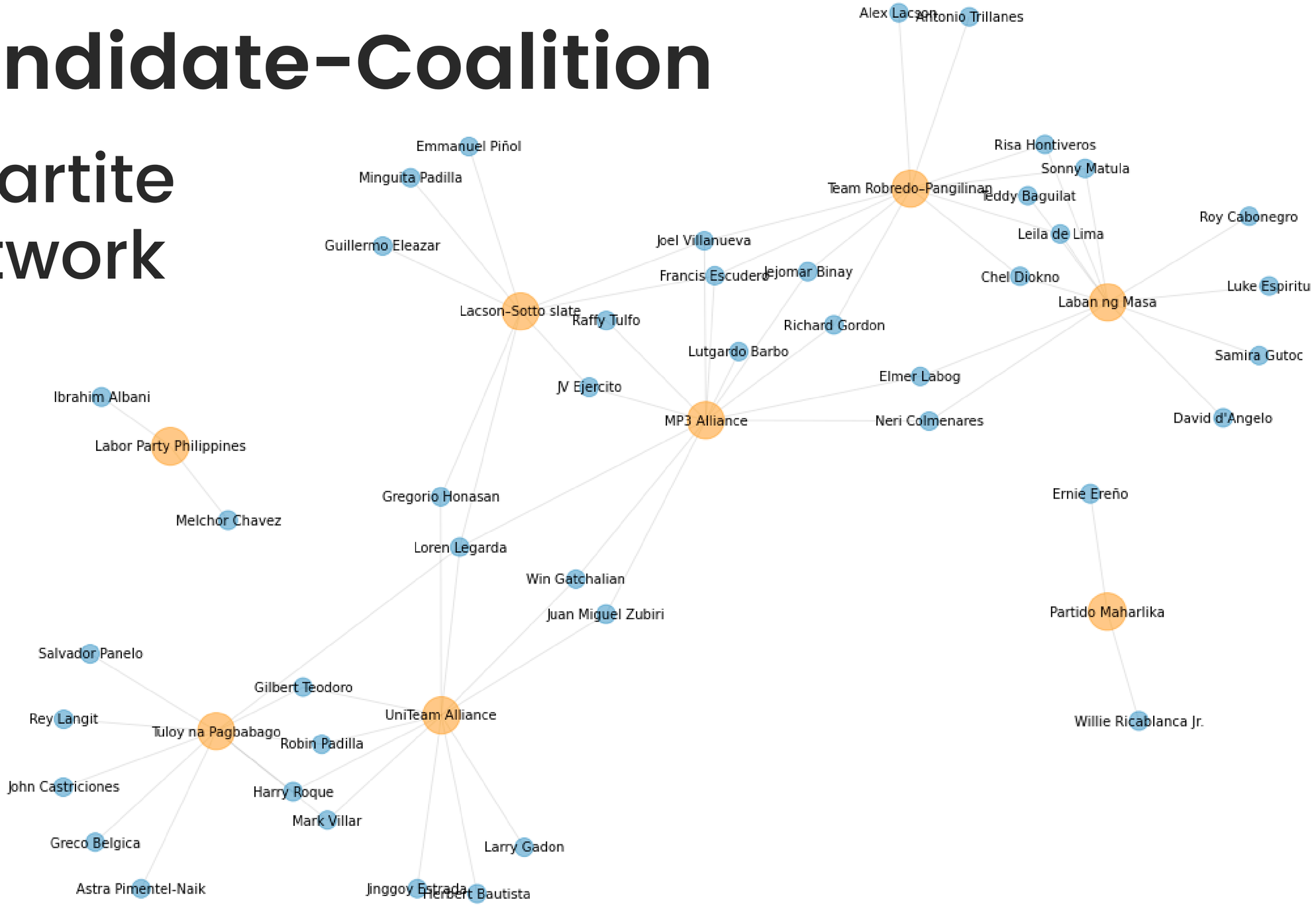
Tuloy na Pagbabago

#	Name	Party
9.	Greco Belgica	PDDS
13.	John Castriciones	PDP–Laban
39.	Rey Langit	PDP–Laban
40.	Loren Legarda*	NPC
43.	~~Rodante Marcoleta~~	PDP–Laban
49.	Robin Padilla	PDP–Laban
50.	Salvador Panelo	PDP–Laban
51.	Astra Pimentel-Naik	PDP–Laban
54.	Harry Roque*	PRP
57.	Gilbert Teodoro*	PRP
62.	Mark Villar*	Nacionalista

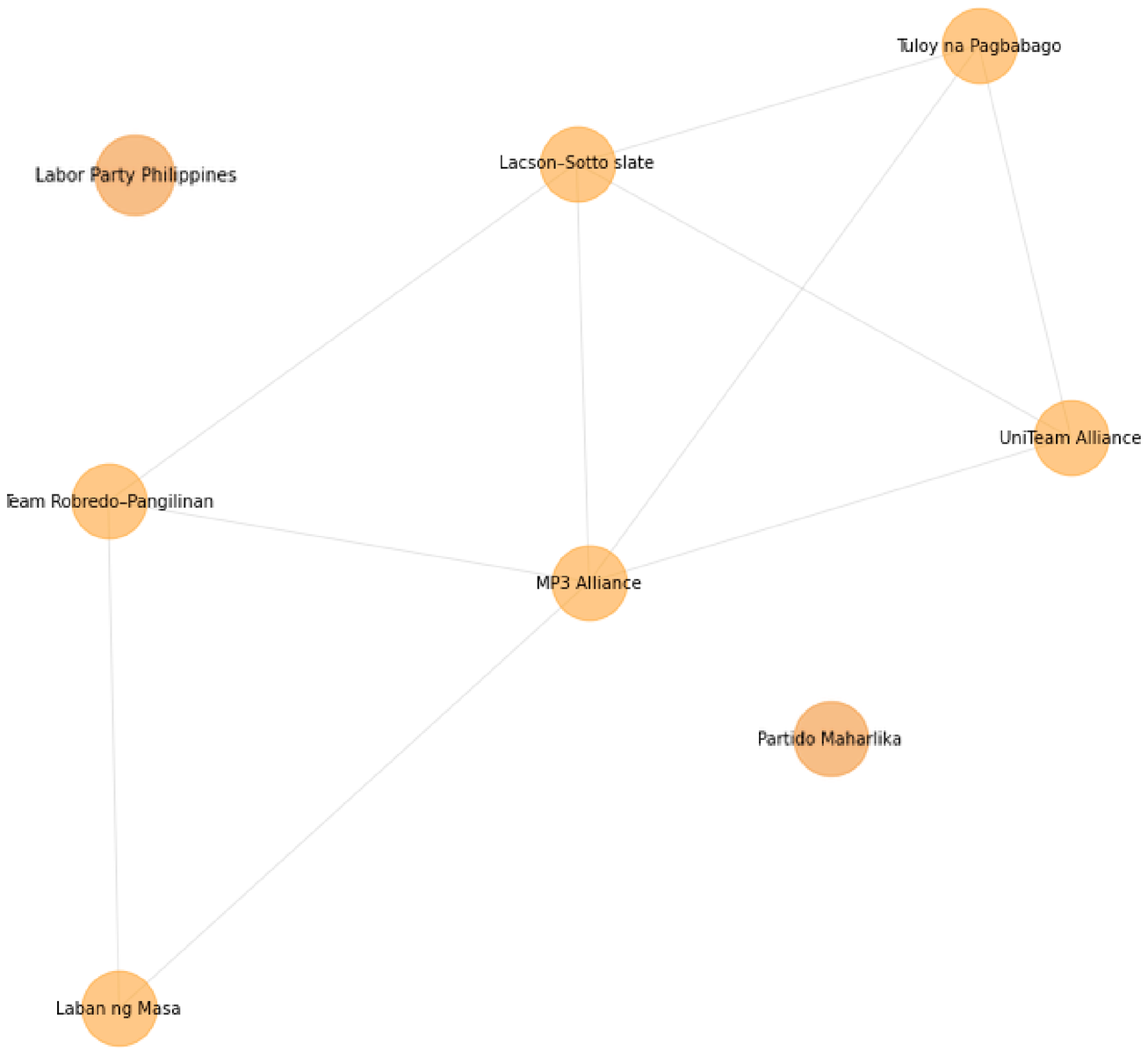
https://en.wikipedia.org/wiki/2022_Philippine_Senate_election

Candidate-Coalition

Bipartite Network



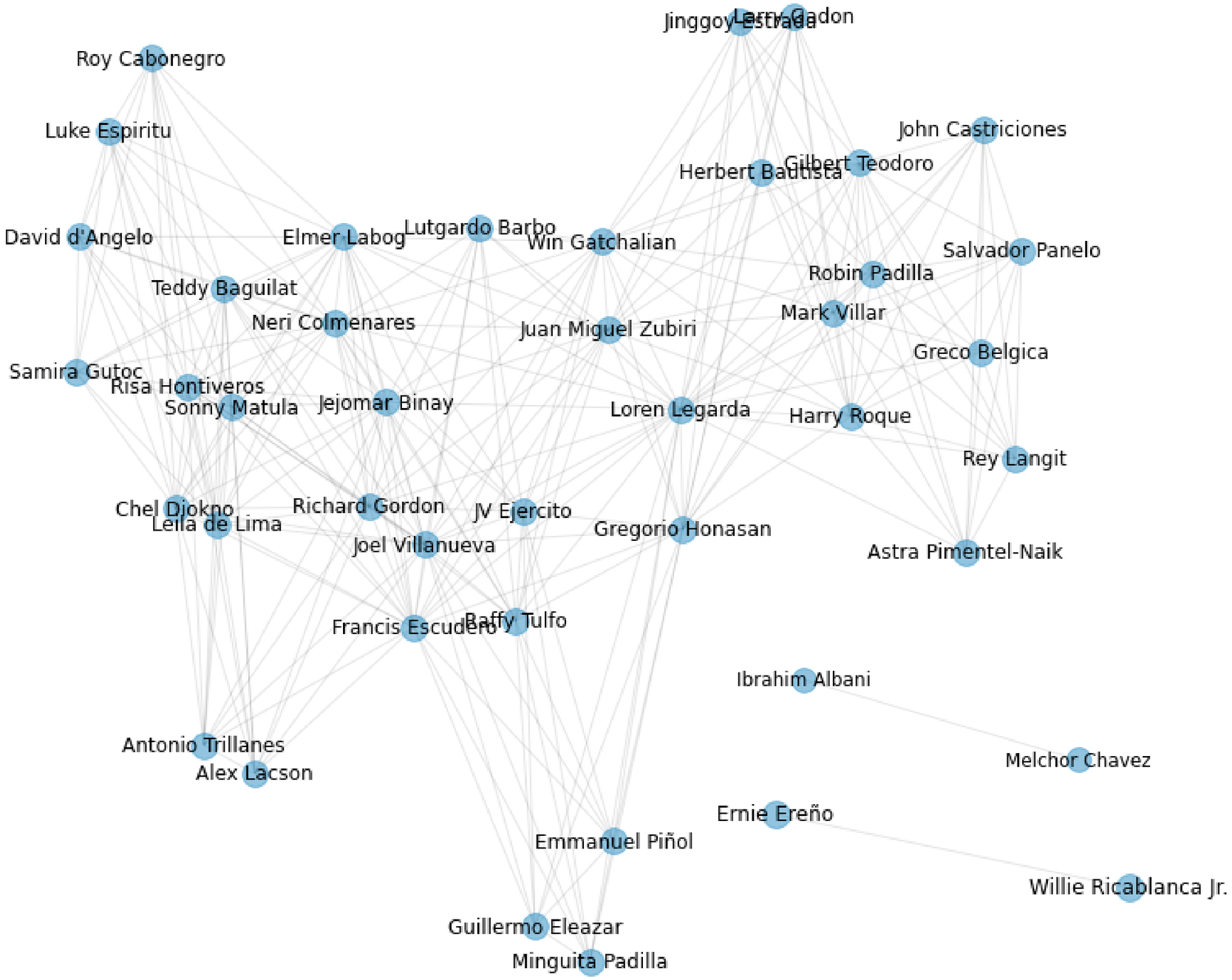
Coalition Network



Central nodes:

- Lacson-Sotto slate
- MP3 Alliance

Candidate Network

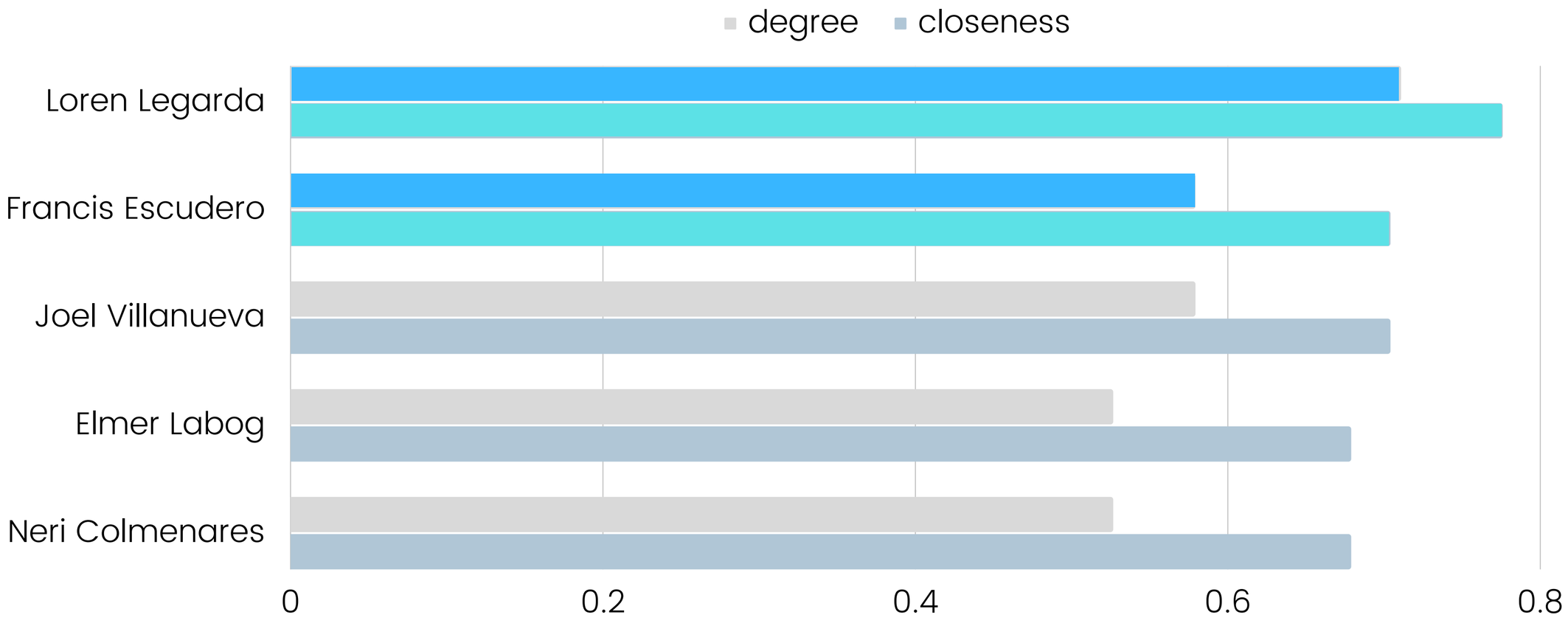


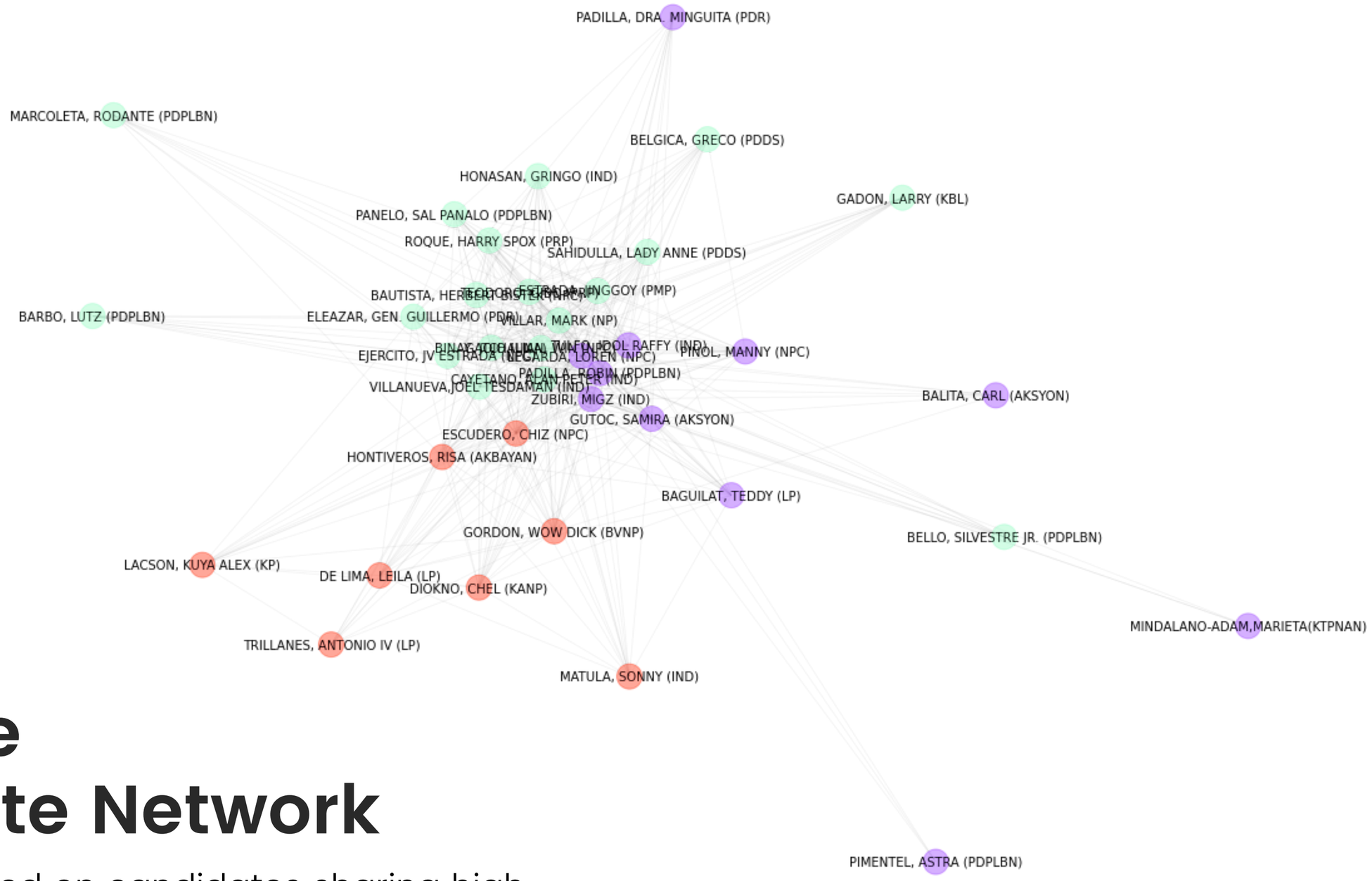
Central nodes:

- Loren Legarda
- Francis Escudero
- Joel Villanueva
- Elmer Labog
- Neri Colmenares

Candidate Network

Centrality Measures





Alternate Candidate Network

Edge weights based on candidates sharing high proportions of votes in multiple locations

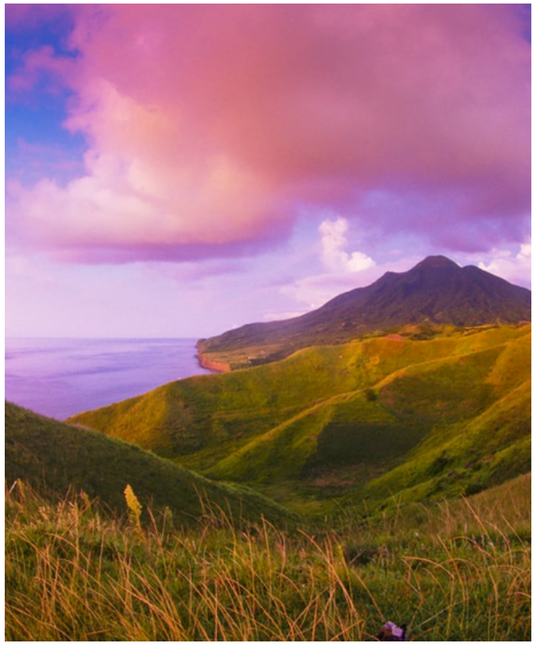
Community Detection in the Alternate Candidate Network

Team Robredo-Pangilinan

Not affiliated by coalition

COMMUNITY 1	COMMUNITY 2	COMMUNITY 3
ESCUDERO, CHIZ (NPC) ✓	GATCHALIAN, WIN (NPC) ✓	PADILLA, ROBIN (PDPLBN) ✓
HONTIVEROS, RISA (AKBAYAN) ✓	VILLAR, MARK (NP) ✓	LEGARDA, LOREN (NPC) ✓
DIOKNO, CHEL (KANP)	CAYETANO, ALAN PETER (IND) ✓	TULFO, IDOL RAFFY (IND) ✓
TRILLANES, ANTONIO IV (LP)	VILLANUEVA,JOEL TESDAMAN (IND) ✓	ZUBIRI, MIGZ (IND) ✓
GORDON, WOW DICK (BVNP)	EJERCITO, JV ESTRADA (NPC) ✓	BAGUILAT, TEDDY (LP)
DE LIMA, LEILA (LP)	ESTRADA, JINGGOY (PMP) ✓	BALITA, CARL (AKSYON)
LACSON, KUYA ALEX (KP)	BINAY, JOJO (UNA)	PADILLA, DRA. MINGUITA (PDR)
MATULA, SONNY (IND)	BAUTISTA, HERBERT BISTEK (NPC)	PIÑOL, MANNY (NPC)

Takeaways



- Leaders and businesses should adapt to the psychographics in each cluster/region

- With the presidential race dominating the national elections, senators utilize both networks and name recall

- Despite it being a mechanism for proportional representation, party lists cater to local interests

Thank You!

Q&A

PRESIDENT / Vote for 1
VICE PRESIDENT / Vote for 1
SENATOR / Vote for 12