

■ DATA SCIENCE FOR PUBLIC POLICY PROGRAM

Data science vs. Dynasty

Uncovering and Shattering the
Structures of Political Dynasties in the
Philippines through Data Science

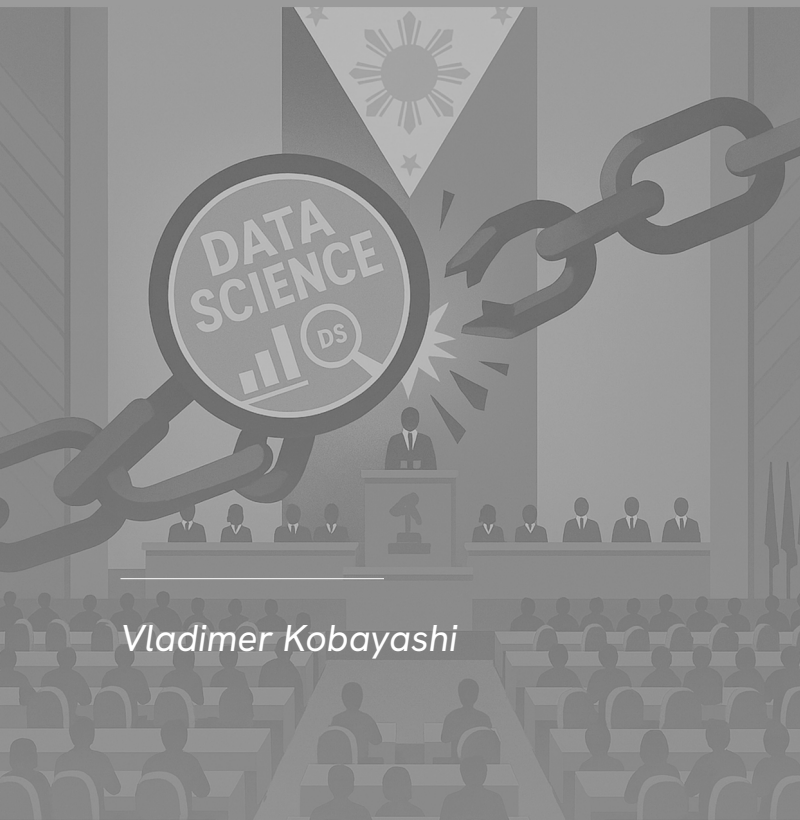


Vladimer Kobayashi

■ DATA SCIENCE FOR PUBLIC POLICY PROGRAM

Data science vs. Dynasty

Uncovering and Shattering the
Structures of Political Dynasties in the
Philippines through Data Science



Vladimer Kobayashi

UP CIDS Discussion Paper Series

is published by the

University of the Philippines
Center for Integrative and Development Studies
Lower Ground Floor, Ang Bahay ng Alumni
Magsaysay Avenue, University of the Philippines
Diliman, Quezon City 1101

Telephone: (02) 8981-8500 loc. 4266 to 4268 / (02) 8426-0955

Email: cidspublications@up.edu.ph

Website: cids.up.edu.ph



cids.up.edu.ph

Copyright 2025 by the
UP Center for Integrative and Development Studies.

The views and opinions expressed in this discussion paper are those of the author/s and neither reflect nor represent those of the University of the Philippines or the UP Center for Integrative and Development Studies. No copies can be made in part or in whole without prior written permission from the authors/editors and the publisher.

ISSN 2619-7448 (Print)

ISSN 2619-7456 (Online)

Cover image credit

"Data Science Techniques Antipolitical Dynasty"

Image generated by AI

Table of Contents

2 **Executive Summary**

3 **Introduction**

4 **Background and Rationale**

5 **Perception of Leadership and Political Dynasty**

6 **The Impact of Political Dynasties**

8 **Anti-Political Dynasty Bills and Challenges**

9 **Data Science Techniques for Combating Political Dynasties**

11 Network Analysis

13 Machine Learning

15 Observational study

16 Text mining and Natural Language Processing (NLP)

17 Time Series Analysis

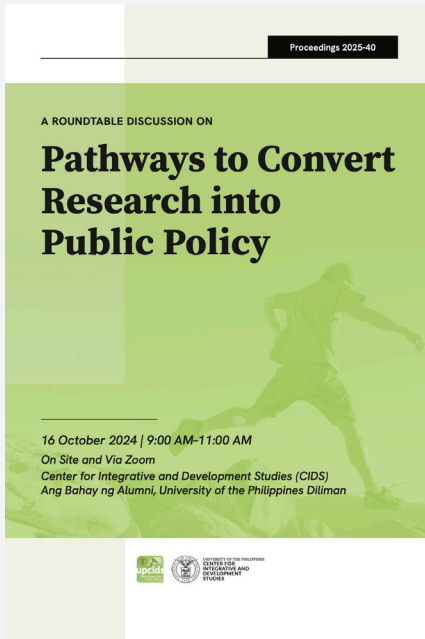
18 **Policy Implications and Alternatives**

19 Conclusion

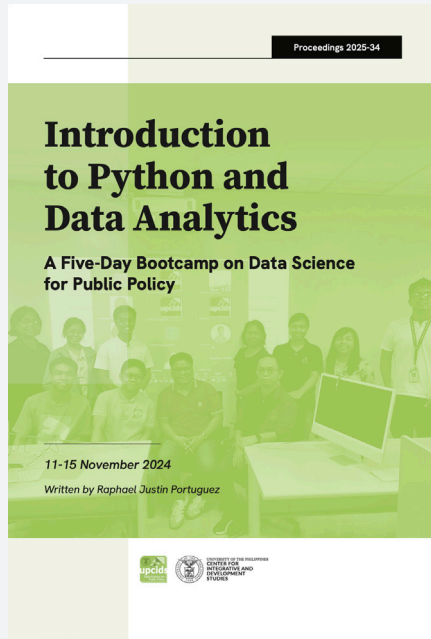
20 References

Download related policy papers

for free



Pathways to Convert Research into Public Policy



Introduction to Python and Data Analytics

cids.up.edu.ph/collection-database

Get your policy papers published.

Download open-access articles.

The Philippine Journal of Public Policy: Interdisciplinary Development Perspectives (PJPP), the annual peer-reviewed journal of the UP Center for Integrative and Development Studies (UP CIDS), welcomes submissions in the form of full-length policy-oriented manuscripts, book reviews, essays, and commentaries. The PJPP provides a multidisciplinary forum for examining contemporary social, cultural, economic, and political issues in the Philippines and elsewhere. Submissions are welcome year-round.

For more information, visit cids.up.edu.ph.

All issues/articles of the PJPP can be downloaded for free.

Get news and the

latest publications.

Join our mailing list to get our publications delivered straight to your inbox! Also, you'll receive news of upcoming webinars and other updates.

bit.ly/signup_cids

We need

your feedback.

Have our publications been useful?
Tell us what you think.

bit.ly/dearcids

DATA SCIENCE VS. DYNASTY

Uncovering and Shattering the
Structures of Political Dynasties in the
Philippines through Data Science

Vladimer Kobayashi

EXECUTIVE SUMMARY

Political dynasties are prevalent in the political atmosphere of the Philippines, with members of the same families often occupying political positions either simultaneously or sequentially. Defined as the consolidation and continuation of political power by members of the same family, these dynasties are categorized into two types: “thin” dynasties, where family members follow one another in office, and “fat” dynasties, where multiple family members hold office at the same time.

Dynastic families currently dominate much of the political power in the Philippines, controlling 113 of the country’s 149 cities. The previous May 2025 elections indicate the continuation of this trend, with many incumbent politicians from these families either seeking reelection or positioning relatives to take over their roles. Dynastic political interests have increasingly hijacked the party-list system, originally designed to represent marginalized groups.

Although the Philippine Constitution explicitly prohibits political dynasties, the continued absence of a specific law to enforce this provision has severely limited its effectiveness. Several legislative proposals aimed at curbing dynastic politics have not progressed beyond committee-level evaluation, which is expected as many legislators themselves belong to influential political families. Historically, these families have successfully used economic resources, political patronage, and limited electoral competition to maintain their hold on power.

The prevalence of political dynasties raises serious concerns about governance, democracy, economic equality, and corruption. Dynastic politics often correlates with higher poverty rates and reduced economic development, as family-oriented leadership tends to favor elite interests and maintain control over economic resources, and thus encourage rent-seeking and corruption.

Effectively addressing these issues requires a multifaceted strategy that includes passing anti-political dynasty legislation, electoral reforms, stricter campaign finance regulations, and greater transparency in governance. Reducing the influence of political dynasties demands not only legal reforms but also fostering a culture of merit-based politics, enhancing

voter awareness, and empowering independent civil society groups and media outlets. However, we must support these initiatives with data-driven strategies. Modern analytical techniques, such as network analysis, machine learning, observational studies, natural language processing, text mining, and time-series analysis, offer powerful tools to better understand and address the impact of political dynasties. These techniques can assist policymakers in designing precise interventions to promote fair political competition and strengthen democratic processes.

INTRODUCTION

Political dynasty is a salient feature of the electoral politics in many electoral democracies such as the Philippines. A political dynasty is defined as “the concentration, consolidation, or perpetuation of political powers by persons related to one another” (Senate Bill No. 264). It is the situation where two or more members of the same family (within the second degree of consanguinity or affinity) hold elective positions or where a family member succeeds another in the same position in at least two elections. Scholars categorize political dynasties into two main types (Querubin 2016). A thin dynasty is when family members are elected sequentially. Fat dynasties on the other hand, occur when multiple family members hold various positions simultaneously. Research indicates that the prevalence of fat dynasties correlates with higher poverty rates (Mendoza et al. 2016), suggesting a negative impact on socio-economic development.

Dynasties rule 113 out of 149 Philippine cities, according to reports (Latoza et al. 2025). In the previous May 2025 elections, 80 city mayors from these dynasties are seeking reelection, while 27 others are positioning relatives to succeed them. Among the 82 provincial governors, 71 (approximately 87 percent) are members of political families. Of these, 47 are running for reelection, and 19 outgoing governors have relatives vying to replace them. The party-list system, designed to represent marginalized sectors, has also been infiltrated by political dynasties. During the 19th congress, at least one nominee belongs to a political family, and in the May 2025 elections at least 78 out of the 156 party-list organizations also belong to political families. The preceding data highlight just how deep political dynasties are woven into the fabric of Philippine politics. Concerns about nepotism, corruption, and unequal representation continue to grow, as do worries about how these entrenched family networks affect the overall quality of governance and social fairness.

Although the 1987 Constitution includes a clear directive—specifically in Article II, Section 26—that the State must ensure equal access to public service and prevent the rise of political dynasties “as may be defined by law,” that mandate remains unfulfilled. No law has ever been passed to enforce it. Over the years, lawmakers have introduced bills designed to bring this constitutional promise to life, aiming to reduce the hold that a few powerful families have on the political system. However, those efforts have repeatedly stalled, leaving the issue unresolved and the path toward more inclusive governance still uncertain. The absence of enabling legislation has rendered this provision largely ineffective.

This discussion paper outlines the history of political dynasties in the Philippines, examines their impacts, reviews previous efforts to enact an anti-political dynasty law, and provides policy recommendations, including how data science can assist in policymaking to limit political dynasties in the Philippines.

BACKGROUND AND RATIONALE

The continued dominance of political dynasties in the Philippines is deeply rooted in both history and long-standing institutional structures. This pattern dates back to the Spanish colonial period, when a class of local elites—known as the *principalia*—was given control over economic resources and political authority. Over time, this early concentration of power laid the groundwork for the rise of influential families who would continue to shape the country’s political landscape for generations. This system allowed certain families to consolidate wealth and influence, setting the stage for enduring political dominance. During the American colonial period, suffrage rights and government positions were restricted to Americans and members of the *principalia*, further reinforcing the power structure and enabling established families to take root and thrive within the new system.

Passing an anti-political dynasty bill would promote a more inclusive and competitive political system by preventing the monopolization of elected offices by a single family. Proponents argue that such a measure would enhance democratic participation, reduce corruption, and improve governance outcomes (Senate Bill No. 548). Studies have shown that political dynasties not only contribute to the concentration of power, but also lead to inefficient governance, as they prioritize familial interests over the broader public good.

Political dynasties continue to flourish largely because of the country's fragile political party system, loose campaign finance rules, and a long-standing reliance on patronage. Influential families have been able to maintain their grip on leadership due to the absence of strong laws regulating the transfer of political power. This has made it incredibly difficult for fresh voices and independent candidates to break into the political arena, leaving the playing field heavily tilted in favor of those with established names and networks.

PERCEPTION OF LEADERSHIP AND POLITICAL DYNASTY

Leadership perception plays a critical role in the spread of political dynasties around the globe. Many cultures associate effective leadership with established family names or prominent political lineages, reinforcing the idea that certain families naturally possess leadership abilities.

Political dynasties tend to emerge and thrive in contexts where voters see a family's historical reputation and continued political involvement as indicators of leadership skill. This tendency is especially strong in societies that highly value collective identity or deeply respect familial heritage. Voters in these societies often interpret the presence of multiple family members in politics as a sign of stability, reliability, and strong governance capabilities. On the assumption that they inherit valuable experience, influential connections, and political know-how, voters frequently prefer candidates from political families.

Media coverage frequently supports and amplifies these views, emphasizing family relationships among political figures. Media narratives often present dynastic candidates as inherently credible due to their family backgrounds, creating an ongoing perception of legitimacy tied specifically to their familial identity rather than their individual accomplishments.

Nevertheless, linking leadership capacity solely to family lineage negatively affects democratic systems by narrowing political competition, encouraging nepotism, and potentially increasing corruption. When voters prioritize family connections over individual merit, it can hinder the introduction of innovative political ideas, reduce accountability in governance, and exacerbate economic and social inequalities.

To shift this mindset, societies need to actively promote merit-based assessments of political candidates, emphasizing transparency, individual qualifications, and issue-oriented politics rather than family reputation. Effective educational programs and impartial media coverage are essential tools in reshaping how voters perceive leadership, helping them make choices based on competence, accountability, and democratic values. These changes can significantly diminish the influence and persistence of political dynasties.

THE IMPACT OF POLITICAL DYNASTIES

Political dynasties affect governance and democracy in different ways, depending on the region. In some cases, they may provide a sense of political stability and continuity, especially in countries where institutions are still developing. While these family-based power structures are frequently criticized for perpetuating inequality and entrenching influence, they also present certain advantages and may elicit positive socioeconomic outcomes. These benefits provide a more nuanced view of why political dynasties continue to endure and why many Filipino communities continue to support them. A notable advantage of political dynasties is longer-term reforms. In areas where political turnover tends to disrupt local initiatives, political dynasties often provide the stable leadership necessary for consistent progress. Multiple political terms are more likely to sustain policies and programs. This continuity is particularly valuable in development programs that require long-term commitment, such as infrastructure projects, poverty reduction initiatives, and educational reforms. Dynastic governance, rather than beginning anew with each new leader, can maintain momentum and guarantee the successful completion of beneficial projects.

In addition, political dynasties often possess accumulated experience and expertise in governance. This accumulated political capital translates into more efficient decision-making and quicker mobilization of resources. In many rural or underdeveloped areas, where access to resources is limited, the connections and experience of a political family can be instrumental in bringing in investment, infrastructure, or social services.

Another benefit lies in the trust and familiarity that political dynasties cultivate among constituents. Voters often associate family names with reputation, performance, and reliability. When a political family has a history

of providing public services or maintaining peace and order, the sense of confidence it fosters can encourage strong community support. Societies that place cultural significance on personal relationships and patron-client ties may perceive dynastic leaders as more approachable and responsive to local needs. This familiarity can reduce the uncertainty that comes with new or unfamiliar candidates and strengthen the bond between officials and the communities they serve.

Furthermore, political dynasties can play a role in ensuring stability in local politics. In regions where factions, rivalries, or clan conflicts are prevalent, a dominant political family can consolidate authority and reduce political fragmentation. This can lead to more predictable governance with fewer disruptions caused by intense electoral competition. Stability thus benefits businesses, investors, and community organizations that rely on consistent political conditions to operate effectively. However, we must carefully weigh the benefits of stability against the costs to democratic fairness and inclusive development.

While political dynasties in the Philippines remain a subject of heated debate, recognizing their advantages helps explain their persistence in the country's political landscape. Continuity in governance, accumulated experience, familiarity and trust among constituents, political stability, and well-established networks all contribute to the appeal and perceived effectiveness of dynastic leadership. Understanding these benefits does not negate the need for reform or critical examination, but it offers a balanced perspective on why political dynasties continue to play a significant role in Philippine society.

On the other hand, the extended dominance of political dynasties often limits political competition, which can lead to corruption, nepotism, and economic stagnation.

To curb these negative effects, there is a clear need to strengthen democratic institutions, improve transparency, and create space for more genuine political competition. When political power becomes concentrated within a handful of families, it risks becoming disconnected from the needs of ordinary people. Legal safeguards and active civil society participation are essential to ensure that leadership remains open, accountable, and inclusive.

Political dynasties often create obstacles for new and independent candidates. These families typically have access to vast financial resources and powerful networks, making it difficult for others to compete on equal footing. This imbalance weakens democracy by allowing personal or family interests to outweigh public service, sometimes resulting in stalled reforms or self-serving policies.

Economically, areas ruled by political dynasties often experience slower growth and deeper poverty. The focus on preserving family power can sideline broader development goals, with policies favoring elite groups instead of promoting widespread progress. As a result, innovation in governance and policy-making is often left behind.

Social inequality is another troubling consequence. When a few families control access to power and resources, it becomes harder for others—especially those from marginalized backgrounds—to acquire opportunities or have their voices heard. This entrenchment of control can deepen cycles of poverty and exclusion, making upward mobility even more difficult.

ANTI-POLITICAL DYNASTY BILLS AND CHALLENGES

Over the years, several anti-political dynasty bills have been brought to Congress, each one attempting to put limits on how many family members can hold public office at the same time or follow each other into elected roles. But despite these efforts, progress has been slow—and resistance remains strong. Various bills (e.g., Senate Bill No. 49¹, Senate Bill No. 548, Senate Bill No. 2730, House Bill No. 389, and House Bill No. 1157) aiming to define and regulate political dynasties have been proposed, but none have been enacted into law. Just recently, Senate Bill No. 1548 and House Bill No. 5905 have been filed again to prohibit political dynasties.

Notably, the Sangguniang Kabataan Reform Act of 2016 (Section 10 of Republic Act no. 10742)² includes an anti-dynasty provision, marking a rare

1 <https://legacy.senate.gov.ph/lisdata/3024627075!.pdf>

2 <https://elibrary.judiciary.gov.ph/thebookshelf/showdocs/2/66304>

instance of legislative action against dynastic politics at the youth council level. Unfortunately, this legislative effort has not been translated to other elective positions, commonly impeded by lawmakers who themselves belong to political families. As of October 2024, political dynasties hold 80 percent of district seats in the House of Representatives, according to one estimate. It is challenging to expect them to pass laws that would limit their influence. This lack of political will, combined with their dependence on well-established family networks to win elections, has made real reform incredibly difficult.

Some opponents of the bill argue that it could violate people's constitutional right to run for public office. But legal experts argue that it is actually a way to create fairer elections, giving space to capable leaders who may not have the benefit of a political surname. They say regulating dynasties is not about taking rights away but about making the system more balanced for everyone.

A challenge in passing any meaningful anti-dynasty legislation is the country's long-standing culture of political patronage. Many voters still support dynastic politicians because of loyalty, personal connections, or direct benefits like financial help or community support. These families use their power not just to govern but to strengthen their grip on elections—generation after generation.

In poorer areas, this dynamic is even more pronounced. People often rely on political families for jobs, access to services, or even basic necessities. That kind of dependence makes it difficult for new or independent candidates to break through, no matter how qualified they might be. In the end, the cycle of dynastic politics continues, not just because of those in power, but because many communities have few alternatives.

DATA SCIENCE TECHNIQUES FOR COMBATING POLITICAL DYNASTIES

A data science approach to studying political dynasties offers a powerful way to understand how these family-based power structures operate and what effects they have on governance and society. By applying systematic methods, researchers can uncover patterns, predict trends, and gather solid evidence to help shape policy decisions. This kind of analysis can guide everything from electoral reforms to the creation of anti-dynasty laws and targeted social or economic programs.

By integrating these data-driven methodologies, data science can play a critical role in understanding, predicting, and mitigating the impacts of political dynasties, thereby promoting informed policy and more equitable governance. Some of the research questions can be addressed by data science, such as

- Which regions are most susceptible to dynastic politics, and why?
- What socioeconomic conditions correlate most strongly with dynastic rule?
- Do political dynasties significantly influence public spending, corruption, or economic growth?
- Can electoral reforms be optimized based on predictive modeling to minimize dynastic power?

It is essential to gather data from a range of sources. Political data, such as past election results, candidate backgrounds, party affiliations, and time spent in office, provides a foundation. Another valuable resource is genealogical information, which helps map out family ties between politicians and identify which families qualify as dynasties. Socioeconomic and regional data—covering things such as poverty levels, local income, education rates, and corruption indexes—can also help measure the real-world influence these dynasties have on the communities they govern.

Once all the necessary information is collected, it needs to be cleaned and organized. That means resolving inconsistencies, especially in family records and election histories, and ensuring everything is standardized so it can be compared across different regions and sources. Pulling data from government archives, electoral commissions, and independent organizations helps build a more complete picture, but integrating it properly is key to producing meaningful insights.

With a clean and organized dataset, researchers can begin exploring information through various statistical techniques and visualizations. Tools like heatmaps, choropleth maps, timelines, and network diagrams can bring dynastic patterns to life, showing how political families are distributed across the country and how long they've held influence. When paired with social and

economic indicators—like those suggested by Rada (2015)—these visuals can highlight the relationships between dynastic power and issues like inequality, access to education, or regional development.

For even greater impact, these visualizations³ can be presented through interactive dashboards using platforms like Tableau or Power BI. This makes it easier for both policymakers and the public to grasp the findings. Adding clear narratives and visual storytelling elements also helps communicate the deeper implications of the data and the reforms it suggests.

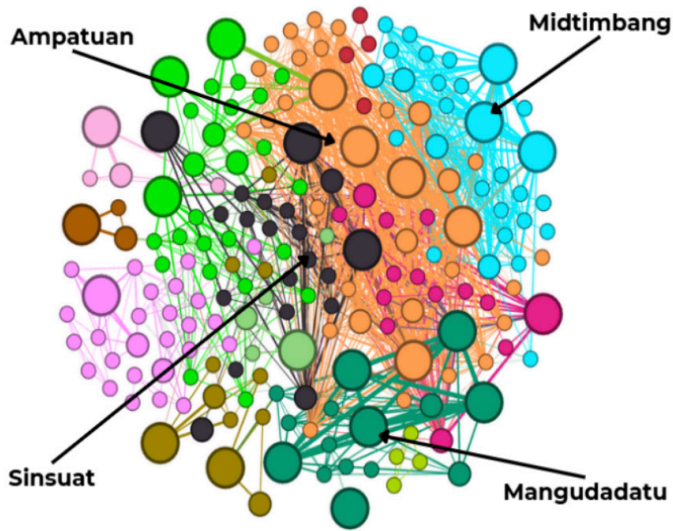
Basic statistical summaries can also help quantify just how widespread political dynasties are, especially when broken down by region or level of government. The following sections explore in more detail the specific data science techniques that can be applied to better understand and evaluate the role of political dynasties in the country.

Network Analysis

One of the most effective ways to study political dynasties is through network analysis (Borgatti et al. 2009). This allows researchers to map out and visually understand how politicians and powerful families are connected. It sheds light on how influence flows through these relationships and reveals the structure behind the political power that often stays within a handful of families.

The process begins by collecting detailed background information on politicians—the offices they have held, how long they have been in power, their political affiliations, family connections, and any known alliances. Once this data is gathered, it needs to be organized in the following way: each person is treated as a “node,” and the relationships between them—whether they are family ties, political partnerships, or even business dealings—are represented as “edges” or lines connecting the nodes.

3 https://public.flourish.studio/visualisation/19955734/?utm_source=embed&utm_campaign=visualisation/19955734



■ **Figure 1.** Network of dynastic families in Maguindanao (lifted from Acuna et al. 2025)

From there, a network graph is built. These visualizations may be created using open-source software platforms such as Gephi⁴ and Cytoscape⁵ or Python packages such as NetworkX⁶, which make it easier to spot patterns. They show which individuals or families are central to the network and which ones form tightly knit groups that wield a lot of influence.

Once the network is mapped out, researchers use various statistical measures to better understand who holds power and how they maintain it. For example, degree centrality (number of connections) helps pinpoint individuals with the most direct ties to others. Betweenness centrality (control over information flow) identifies those who act as intermediaries—key players who link different parts of the network.

Beyond mapping influence, network analysis can also help detect clusters of political families that dominate entire communities or regions. Methods

4 <https://gephi.org/>

5 <https://cytoscape.org/>

6 <https://networkx.org/en/>

such as the Louvain or Girvan-Newman algorithms are especially useful for identifying these tightly bonded dynastic groups that have maintained control across generations.

Network analysis can also support predictive analysis. By looking at historical patterns and how different nodes shift over time, researchers can anticipate which individuals or families are likely to rise in influence. These insights can help inform proactive policymaking, whether it is designing fairer electoral systems or drafting laws curbing dynastic power.

Practically speaking, network analysis can reveal power structures and make them visible to the public. Citizens can better understand who holds power and its distribution through clear, visual representations of political networks. Policymakers can also use these insights to craft more focused reforms that stop political families before they become deeply entrenched.

However, using network analysis effectively needs care and responsibility. The data must be accurate, complete, and unbiased. Moreover, researchers must be mindful of ethical concerns, especially when it comes to personal privacy. It is also crucial to remember that just because a connection exists in a network does not mean there is a direct cause-and-effect relationship. Interpretation should always be thoughtful and context-driven.

In countries such as the Philippines—where dynasties have long shaped political life—network analysis has already proven useful. By mapping the connections of well-known families in Maguindanao, Lanao del Sur, Catanduanes, Bulacan, and Cebu, researchers and advocates have gained a clearer picture of how political power is inherited and consolidated (Acuna et al. 2025). These insights have become valuable tools in the push for democratic reform and greater inclusivity in governance.

Machine Learning

Machine learning can open up new ways to better understand and address the influence of political dynasties (Grimmer et al. 2021). With its ability to detect trends, predict outcomes, and assess impact, this technique offers a powerful, data driven approach to tackling one of the most persistent challenges in Philippine politics.

Visual tools like charts and heatmaps simplify the process of identifying trends and selecting features for the models. From there, different machine learning algorithms come into play. Techniques such as logistic regression, decision trees, and neural networks can help predict dynastic candidates and how they can thrive. These predictions often rely on factors such as incumbency, education, wealth, campaign spending, and regional demographics.

Unsupervised methods, such as clustering and dimensionality reduction techniques, take a different approach by uncovering hidden patterns without a target variable or outcome. These techniques are especially advantageous for identifying shared characteristics of areas where dynastic politics are most deeply rooted.

To make the models easier to understand, tools such as SHAP (Shapley Additive exPlanations) and LIME (Local Interpretable Model-agnostic Explanations) allow researchers to explain how the models make decisions—a research area called Explainable Machine Learning (XML). This level of transparency is key for adoption with policymakers, journalists, and the public. When stakeholders understand why a model is making certain predictions, they are more likely to act on the results.

Insights from machine learning can directly support the fight against political dynasties. They help pinpoint areas that need urgent policy intervention, guide electoral reforms, support public education campaigns, and even help build systems that keep track of dynastic influence over time. As new data becomes available, these models can be updated and refined, allowing decision-makers to stay ahead of emerging trends.

That said, applying machine learning to politics comes with responsibilities. Protecting personal data, avoiding algorithmic bias, and staying grounded in ethical practices are all crucial. It is also vital to clarify a model's limits so people know what the results mean. When used carefully and responsibly, it has the potential to reshape how we understand political dynasties, support stronger democratic systems, and push for a more level playing field in public leadership.

Observational study

An observational study is a useful way to explore how political dynasties affect government performance, society, and the economy. By taking a closer look at the results of dynastic leadership, researchers can determine whether these family-run power structures help or hinder development, depending on the context in which they operate.

One of the most common uses of observation studies is to examine how dynasties influence the economic and social well-being of a region. Researchers often compare areas led by political families with those governed by leaders who are not part of a dynasty. These comparisons focus on indicators such as poverty levels, economic growth, job opportunities, education, and access to healthcare. The goal is to identify whether dynastic leadership tends to result in slower development, misused public funds, or reduced investment in essential services, especially when compared to regions that enjoy more inclusive and competitive political environments. For example, causal models such as difference-in-differences or matching techniques help measure the effects of dynastic governance on welfare growth (Wiryanan et al. 2025). These types of studies provide solid, data-backed arguments for reform.

This type of analysis also sheds light on the quality of governance. It looks at things like how transparent local governments are, how effectively they deliver public services, and how accountable they are to the people. The findings can reveal whether dynastic politicians rely on patronage systems to stay in power—often at the expense of effective governance—or whether, in some cases, they help maintain stability due to their long-standing presence and familiarity with local systems.

Another important insight from observational studies is how dynasties perpetuate political violence. By using regression designs, analysts were able to relate the persistence of political dynasties to political violence (Mendoza et al. 2022). This study showed that the concentration of power within a few families may provoke political violence.

Additionally, researchers use observation studies to explore how dynasties shape policy decisions. By comparing how funds are allocated and which projects get prioritized under dynastic versus non-dynastic leadership, they

can uncover patterns of favoritism or elite-serving policies. These findings are important for guiding policy reforms that aim to reduce bias and encourage fairer distribution of public resources.

Another area where observation study proves valuable is in understanding social inequality. It helps uncover whether political dynasties deepen divides in society by limiting access to resources and opportunities for those outside their inner circles. By shining a light on these disparities, the research provides civil society and policymakers a stronger foundation for advocating reforms that promote fairness and inclusion.

Yet, there are still challenges. In many areas, data can be difficult to come by, especially where recordkeeping is weak or transparency is lacking. It is also not always straightforward to link outcomes directly to dynastic rule, since many other factors are at play. Researchers must be cautious and ethical in how they collect and use data, being mindful of privacy and potential biases.

In the end, an observational study tells an analysis about how political dynasties shape everyday life and the direction of a country. With careful research and thoughtful interpretation, it becomes a powerful tool for those who want to make governance more accountable, democratic, and inclusive.

Text mining and Natural Language Processing (NLP)

More sophisticated tools that deal with text, such as natural language processing (NLP) and text mining, are becoming increasingly useful in understanding political dynamics. These technologies can be used to dig into campaign speeches, media reports, and public statements to uncover the messaging strategies that political dynasties rely on to stay in power and shape public perception. Techniques such as sentiment analysis, topic modeling (including methods such as Latent Dirichlet Allocation or more modern transformer-based models), and discourse analysis make it possible to identify recurring themes and emotional tones in political messaging. By applying these tools, researchers and policymakers can gain more profound insight into how dynastic politicians craft their narratives, connect with voters, and maintain their influence over time.

Time Series Analysis

Time series analysis offers a structured approach in studying political dynasties by examining patterns, trends, and impacts over time, thus giving researchers useful information about their dynamics and consequences. Moreover, when paired with network analysis, a dynamic or temporal analysis of political networks further enriches understanding by showing how dynastic power evolves over time, revealing periods of consolidation, expansion, or weakening of political families.

Studying political dynasties over time can reveal a lot about how they rise, evolve, and sometimes fade. By tracking election data across decades, researchers are able to identify patterns—periods when political families gained ground, held their positions, or lost influence. These shifts often line up with bigger social, economic, or political changes in the country.

To make sense of these patterns and even predict what might happen next, analysts use tools such as autoregressive models or exponential smoothing. These models help forecast whether certain families are likely to tighten their grip on power or start to lose their footing. These insights can be especially useful for decision-makers and advocacy groups looking to design policies that encourage fairer political competition.

When new laws or reforms are introduced—say, a policy designed to curb dynastic influence—time series analysis can show whether they have made a difference. Researchers can tell if dynastic politicians are really declining by looking at trends before and after such interventions.

This method also sheds light on how dynastic leadership affects poverty levels, economic growth, and corruption. Techniques like cross-correlation or vector autoregression (VAR) models help reveal whether the presence of political families in office has a measurable impact on these broader societal outcomes.

Political dynasties do not always follow a linear trajectory. Election cycles or major political events often trigger their rise and fall. Spotting these cycles can help advocates and policymakers act at the right moments to push for change. Structural shifts—like constitutional amendments or anti-corruption campaigns—can dramatically alter the landscape, and time series analysis helps pinpoint when and why these changes occur.

When applied thoughtfully, this approach can equip policymakers, researchers, and reform advocates with the tools they need to anticipate trends, measure the impact of policies, and guide efforts to build a more balanced and democratic political system.

POLICY IMPLICATIONS AND ALTERNATIVES

Enacting a law that restricts political dynasties can potentially change Philippine politics. Such a law would need to clearly spell out what constitutes a political dynasty and include rules that prevent family members from holding or swapping elected positions one after another, or even at the same time.

Another option would be to require “cooling-off” periods between terms for close relatives who want to run for the same or similar offices. This would provide equal opportunities for other candidates and potentially break the cycle of inherited power. The length of cooling off could be determined by data science techniques.

Still, passing a single law would not be enough. Breaking the hold of political families will also require the strict enforcement of existing laws, which include limits on campaign spending and prohibition of vote-buying (Batas Pambansa Blg. 881; Republic Act No. 7166). Strengthening election commissions so they can enforce the rules without political pressure is also crucial.

Civic education also has a major role to play. Teaching people about the value of transparency, fairness, and choosing leaders based on merit can spark interest in politics among younger generations and underrepresented groups. If more people understood the consequences of voting along family lines, it might shift the culture toward valuing competence over lineage. Widespread voter education campaigns can help people better understand how dynastic politics often hold back progress. Encouraging grassroots engagement and making civic education part of the school system could empower citizens to choose candidates based on merit, not legacy.

Independent media and civil society also need support. These groups act as watchdogs, exposing abuses of power and calling attention to the ways political families maintain their control. Protecting journalists and activists who investigate corruption is crucial for keeping political elites accountable.

Political parties themselves also need to evolve. Parties should be encouraged—or even required—to choose candidates based on qualifications, not on family background. Moving the focus away from individual personalities and toward platforms and party-based systems can make elections more about ideas and less about name recognition.

Making all of this happen will take more than one policy or one election cycle. It requires ongoing commitment from the government, civil society, and citizens alike. If done right, it could shift the country toward a political culture where leadership is earned, not inherited, and where governance is driven by ideas and accountability rather than bloodlines.

CONCLUSION

In the Philippines, one of the most urgent and difficult reforms is passing a law that would finally enforce the constitutional ban on political dynasties. Despite the idea aligning with the country's democratic ideals, previous attempts to implement such legislation have often encountered obstacles. Ironically, it is the same political families the bill aims to regulate who hold the power to block it. If passed, the law would be a major milestone toward a more democratic system—one where everyone, not just a privileged few, has a fair shot at public service. It would help guard against the dangers of concentrated power.

Real political reform goes beyond just writing new laws. It also means building strong, independent institutions, nurturing political parties that support qualified candidates, and generating data-driven insights for fairer electoral systems and effective governance. Without concrete data and the ensuing analysis, it is difficult to evaluate reforms, and the public would be easily swayed by misinformation. This situation fosters the perpetuation of political dynasties, hindering the ascent of new leaders and the perception of genuine change among voters.

The health of Philippine democracy hinges on whether the country can break free from systems that favor the powerful and keep others out. Data science can provide the needed analysis for each stage of the policymaking process for passing an anti-political dynasty law, thereby strengthening its form and content. Finally, we must make deeper changes that aim for fairness, healthy competition, and leadership based on ability, not bloodline. If those changes

do not happen, dynastic rule will remain a major roadblock to progress, weakening the country's democratic foundations and shutting out the next generation of leaders.

REFERENCES

- Acuna, Rafael, Aldie Alejandro, and Robert Leung. 2025. "The Families that Stay Together: A Network Analysis of Dynastic Power in Philippine Politics." Undergraduate Thesis, Ateneo de Manila University. arXiv. <https://doi.org/10.48550/arXiv.2505.21280>
- Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. "Network Analysis in the Social Sciences." *Science*, 323 (5916): 892–895. <https://doi.org/10.1126/science.1165821>
- Grimmer, Justin, Margaret E. Roberts, and Brandon M. Stewart. 2021. "Machine Learning for Social Science: An Agnostic Approach." *Annual Review of Political Science* 24 (2021): 395–419. <https://doi.org/10.1146/annurev-polisci-053119-01592.1>
- Latoza, Guinevre, Angela Ballerda, and Gabriel Oliveros. 2025. "113 out of 149 Philippine cities also ruled by political dynasties." *pcij.org*, 26 January 2025. <http://pcij.org/2025/01/26/113-out-of-149-philippine-cities-also-ruled-by-political-dynasties/>.
- Mendoza, Ronald U., Edsel L. Beja, Victor S. Venida, and David B. Yap. 2016. "Political Dynasties and Poverty: Measurement and Evidence of Linkages in the Philippines." *Oxford Development Studies* 44 (2): 189–201. doi:10.1080/13600818.2016.1169264.
- Mendoza, Ronald U., Jurel K. Yap, Gabrielle Ann S. Mendoza, Angelika Lourdes J. Pizzaro, and Georgi Engelbrecht. 2022. "Political Dynasties and Terrorism: An Empirical Analysis Using Data on the Philippines." *Asian Journal of Peacebuilding* 10 (2): 435–459. <https://doi.org/10.18588/202210.00a266>
- Querubin, Pablo. 2016. "Family and Politics: Dynastic Persistence in the Philippines." *Quarterly Journal of Political Science* 11 (2): 151–181. <http://dx.doi.org/10.1561/100.00014182>
- Wiryawan, Bangkit Aditya, Teguh Yuwono, Nur Hidayat Sardini, and Rofi Lutfiani. 2025. "Political Dynasty and Welfare Growth." In *Proceedings of the 9th International Conference on Indonesian Social and Political Enquiries (ICISPE 2024)*, 286–293. Atlantis Press. <https://books.google.com/books?hl=en&lr=&id=P4tpEQAAQBAJ&oi=fnd&pg=PA286&dq=time+series+analysis+political+dynasty&ots=7uM8pdvpKe&sig=fvTzPF-qTzJn25anGDntpqGWMuY>

THE UP CIDS DISCUSSION PAPER SERIES

The UP CIDS Discussion Paper Series features preliminary researches that may be subject to further revisions and is circulated to elicit comments and suggestions for enrichment and refinement. They contain findings on issues that are aligned with the core agenda of the research programs under the University of the Philippines Center for Integrative and Development Studies (UP CIDS).

CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

Established in 1985 by University of the Philippines (UP) President Edgardo J. Angara, the UP Center for Integrative and Development Studies (UP CIDS) is the policy research unit of the University that connects disciplines and scholars across the several units of the UP System. It is mandated to encourage collaborative and rigorous research addressing issues of national significance by supporting scholars and securing funding, enabling them to produce outputs and recommendations for public policy.

The UP CIDS currently has twelve research programs that are clustered under the areas of education and capacity building, development, and social, political, and cultural studies. It publishes policy briefs, monographs, webinar/conference/forum proceedings, and the Philippine Journal for Public Policy, all of which can be downloaded free from the UP CIDS website.

THE PROGRAM

The **Program on Data Science for Public Policy (DSPPP)** aims to build the capacity of UP faculty in data science and apply this learned skill to public policy and governance. It seeks to engage a community of researchers within the university and encourage the pursuit of interdisciplinary problem-oriented research using high-level quantitative analyses.

EDITORIAL BOARD

Rosalie Arcala Hall
EDITOR-IN-CHIEF

Honeylet L. Alerta
DEPUTY EDITOR-IN-CHIEF

PROGRAM EDITORS

■ EDUCATION AND CAPACITY BUILDING CLUSTER

Dina S. Ocampo
Lorina Y. Calingasan
EDUCATION RESEARCH PROGRAM

Rosalie B. Arcala Hall
PROGRAM ON HIGHER EDUCATION
RESEARCH AND POLICY REFORM

Romylyn Metila
Marlene Ferido
ASSESSMENT, CURRICULUM, AND
TECHNOLOGY RESEARCH PROGRAM

Ebinezer R. Florano
PROGRAM ON DATA SCIENCE FOR
PUBLIC POLICY

■ SOCIAL, POLITICAL, AND CULTURAL STUDIES CLUSTER

Rogelio Alicor L. Panao
PROGRAM ON SOCIAL AND
POLITICAL CHANGE

Darwin J. Absari
ISLAMIC STUDIES PROGRAM

Herman Joseph S. Kraft
Francis Rico C. Domingo
STRATEGIC STUDIES PROGRAM

Marie Aubrey J. Villaceran
Frances Antoinette C. Cruz
DECOLONIAL STUDIES PROGRAM

■ DEVELOPMENT CLUSTER

Annette O. Balaing-Pelkmans
PROGRAM ON ESCAPING THE
MIDDLE-INCOME TRAP: CHAINS FOR CHANGE

Antoinette R. Raquiza
Julius Lustro
POLITICAL ECONOMY PROGRAM

Eduardo C. Tadem
Maria Dulce Natividad
PROGRAM ON
ALTERNATIVE DEVELOPMENT

Iris Thiele Isip-Tan
PROGRAM ON HEALTH
SYSTEMS DEVELOPMENT

■ NEW PROGRAMS

Maria Angeles O. Catelo
FOOD SECURITY PROGRAM

Weena S. Gera
URBAN STUDIES PROGRAM

Benjamin M. Vallejo, Jr.
CONSERVATION AND BIODIVERSITY

Rosalie B. Arcala Hall
LOCAL AND REGIONAL STUDIES NETWORK

EDITORIAL STAFF

Jheimeel P. Valencia
COPYEDITOR

Alexa Samantha R. Hernandez
EDITORIAL ASSISTANT

Jessie Feniquito
Mikaela Anna Cheska D. Orlino
LAYOUT ARTISTS

Get your policy papers published. Download open-access articles.

The Philippine Journal of Public Policy: Interdisciplinary Development Perspectives (PJPP), the annual peer-reviewed journal of the UP Center for Integrative and Development Studies (UP CIDS), welcomes submissions in the form of full-length policy-oriented manuscripts, book reviews, essays, and commentaries. The PJPP provides a multidisciplinary forum for examining contemporary social, cultural, economic, and political issues in the Philippines and elsewhere. Submissions are welcome year-round.

For more information, visit cids.up.edu.ph. All issues/articles of the PJPP can be downloaded for free.

Get news and the latest publications.

Join our mailing list: bit.ly/signup_cids to get our publications delivered straight to your inbox! Also, you'll receive news of upcoming webinars and other updates.

We need your feedback.

Have our publications been useful? Tell us what you think: bit.ly/dearcids.



UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

Lower Ground Floor, Ang Bahay ng Alumni, Magsaysay Avenue
University of the Philippines Diliman, Quezon City 1101

Telephone (02) 8981-8500 loc. 4266 to 4268
(02) 8426-0955

Email cids@up.edu.ph
cidspublications@up.edu.ph

Website cids.up.edu.ph