

Impact of Party Leadership on Donation Patterns*

What Data from 2013 - 2024 Reveal About Party Funding Trends

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This study investigates how the ruling political parties in Canada's federal and Ontario provincial governments affect the donation behaviors of individual contributors. By analyzing donation records from 2013 to 2024, the research explores whether a party being in power influences the total amount of financial support it receives. The findings reveal that opposition parties often receive more donations than those in power, highlighting donor preferences to support challengers. This insight enhances our understanding of political financing and can help parties and policymakers develop more effective fundraising strategies.

1 Introduction

Political donations are an important part of democratic processes, providing essential financial support for political campaigns and influencing electoral competition. In Canada, both federal and provincial elections rely on contributions from individuals and organizations. This can shape the political landscape and reflect public support for different parties. Understanding the factors that drive donation patterns is crucial for ensuring transparency and fairness in the democratic process and for minimizing the risk of undue influence on policy-making.

A key question in political finance is whether a party's position in power affects the amount of financial support it receives. Studies in other countries, such as the United States, have shown that incumbents often benefit from more donations, particularly from interest groups seeking to maintain influence (Fouirnaies and Hall (2014)). However, there has been less focus on whether this holds true in Canada, where the political system and donation regulations differ significantly. This paper aims to fill that gap by analyzing how a party's power status influences donor behaviour in federal and Ontario provincial elections.

*Code and data are available at: https://github.com/MariaMangru/Ontario_Political_Donors.

The primary estimand of this study is the effect of a political party’s power status on the total amount of financial donations it receives from individual contributors. By comparing the financial support received by parties in power versus those in opposition, this research aims to understand whether being in power affects a party’s fundraising success.

Using donation data from 2013 to 2024, this study examines total donations by year and party, accounting for factors such as election timing and party size (major party or not). The analysis employs linear regression models to quantify the relationship between power status and donation amounts, providing insights into donor motivations and the strategic considerations of political parties.

The results indicate that opposition parties tend to receive higher total donations than those in power, suggesting that donors often prioritize supporting challengers, possibly to influence political change. This information is valuable not only for political parties developing fundraising strategies but also for policymakers and researchers seeking to ensure fairness and accountability in political financing.

The paper is organized as follows: Section 2 discusses the data sources and methodology, including measurement and data cleaning processes. Section 3 presents the regression models used in the analysis, along with justification and validation. Section 4 outlines the results, and Section 5 discusses the implications, limitations, and suggestions for future research. Section A offers further detailed insights into the data, modeling approach, and methodology.

2 Data

2.1 Overview

The dataset used in this analysis comprises political donation records from 2013 to 2024, covering both the federal level and the province of Ontario in Canada. These records were sourced from the The Investigative Journalism Foundation (2024) Political Donors Dataset, which systematically collects and maintains comprehensive data on political donations across Canadian jurisdictions. The IJF updates this dataset daily by monitoring election agency websites at the federal level and within each province and territory, ensuring the data remains current and reliable. The analysis was conducted using both R (R Core Team (2023)) and Python (Python Software Foundation (2023)), leveraging a range of libraries for data manipulation and visualization. In R, key packages included dplyr (Wickham, François, Henry, Müller, and Vaughan (2023)), lubridate (Grolemund and Wickham (2011)), tidyverse (Wickham et al. (2019)), ggplot2 (Wickham (2016)), readr (Wickham, François, Henry, and Müller (2023)), tibble (Müller and Wickham (2023)), and rstanarm (Goodrich et al. (2023)) for statistical modeling. In Python, pandas (team (2023)), requests (Reitz and Python Requests Development Team (2023)), and matplotlib (Hunter and team (2023)) were utilized for additional data processing and visualization tasks.

Political donations in Canada are subject to legal disclosure requirements, promoting transparency and accountability within the democratic process. Both federal and provincial election finance laws mandate that political parties, candidates, and associated entities report donations exceeding specific thresholds. These disclosures vary by jurisdiction in terms of frequency and reporting formats. For instance, Ontario requires annual returns for general and by-elections, leadership races, and donations to parties, candidates, and constituency associations, all available in downloadable spreadsheet formats from 2007 onward. This regulatory framework ensures that significant contributions are systematically documented and publicly accessible, providing a reliable foundation for this analysis.

2.2 Measurement

The dataset originates from The Investigative Journalism Foundation (2024) compilation of political donation records, which includes donations made to registered political parties, party leadership contestants, riding associations, and individual candidates. Donations are tracked across different types of electoral events, including general elections, by-elections, and leadership races. The IJF collects this data by monitoring official elections agency websites at both the federal level and within each province and territory.

The target population for this analysis includes all political donations made to registered political parties, party leadership contestants, riding associations (also known as electoral district or constituency associations), and individual riding candidates during the specified time frame. This comprehensive coverage allows for an in-depth examination of donation patterns in various political contexts. The data collection methodology ensures that all significant financial contributions are captured, providing a robust foundation for analyzing the relationship between political power and financial support.

Data aggregation involves summing the total donations received by each political party annually, resulting in a dataset where each row represents the total donations for a specific party in a given year. Key variables include Political Party (categorizing major and minor parties), Donation Year (ranging from 2013 to 2024), and Amount Donated (the monetary value of each donation). Additional binary variables such as Recipient_in_Power (indicating whether the party was in power during the donation year), Party_Size (distinguishing major from minor parties based on legislative representation), and Election_Year (indicating whether the donation was made during an election year) are constructed to facilitate regression analyses.

The data is organized into a structured format with each row detailing a specific donation event, including the party receiving the donation, the year it was made, the amount donated, and the constructed binary indicators. By aggregating donations at the party-year level and incorporating relevant variables, the dataset effectively translates real-world donation phenomena into analyzable data points, enabling the investigation of how political power status influences financial support in Canadian elections.

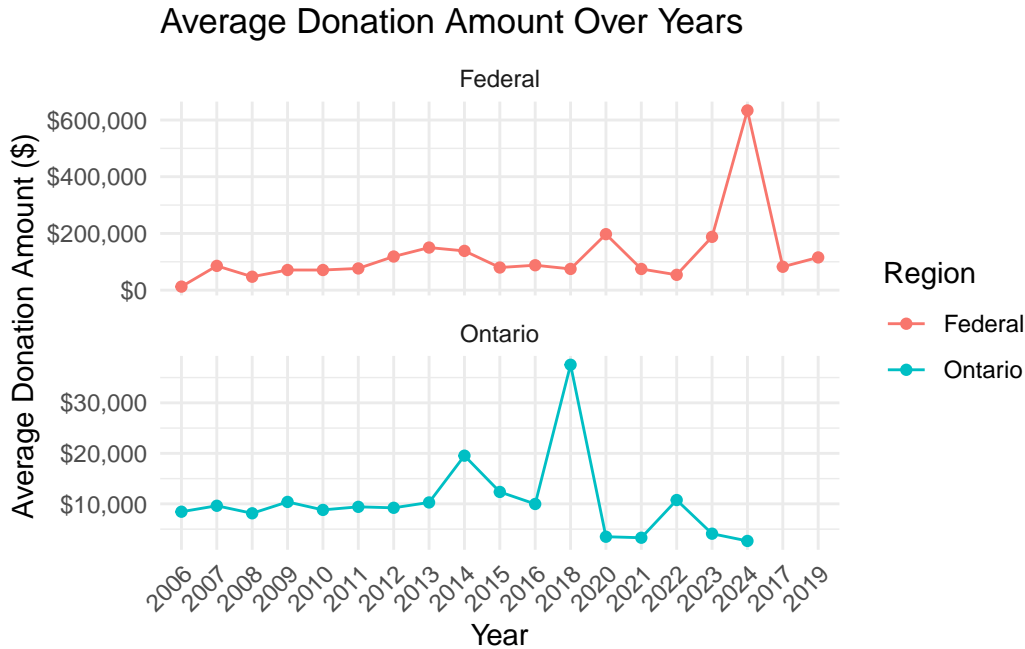
2.3 Data Cleaning

The raw donation records were carefully preprocessed to ensure data integrity before analysis. First, the data was imported using the `read_csv` function from the `readr` package. Records with missing or incomplete information in key variables were excluded to maintain quality. Political party names were standardized to address inconsistencies, such as consolidating variations like “Liberal Party of Ontario” and “Ontario Liberal Party” under a single name. Donations were then aggregated at the party-year level to analyze total annual contributions received by each party. Binary variables, including `Recipient_in_Power`, `Party_Size`, and `Election_Year`, were created to support regression analysis. To normalize the distribution and handle zero values, a new variable, `Log_Total_Donations`, was generated by applying a logarithmic transformation to `Total_Donations + 1`. Finally, the cleaned dataset was cross-validated against the original records to ensure accuracy. Additional details about the data cleaning process can be found in [Appendix A](#).

2.4 Outcome Variables

The primary outcome variable is the Total Amount Donated, representing the total monetary value of donations received by each political party in a given year. This continuous variable is essential for assessing the level of financial support and understanding its relationship with factors such as power status and party size.

The distribution of total donation amounts varies between the federal and provincial levels. At the federal level, the average total donations are higher, reflecting broader donor bases and different legal contribution limits.



2.5 Predictor Variables

Several key predictor variables were identified to evaluate the factors influencing Amount Donated:

- **Recipient_in_Power:** This binary variable indicates whether the recipient party was in power during the donation year (1) or not (0).
- **Party_Size:** Another binary variable which categorizes parties as major (1) or minor (0) based on their representation in the legislature. Major parties are expected to receive more donations due to greater visibility, established support bases, and broader outreach capabilities. This variable helps in distinguishing the influence of party prominence on financial support.
- **Election_Year:** This binary variable signifies whether the donation was made during an election year (1) or not (0). Election years often see increased fundraising activities as parties intensify their efforts to secure electoral victories. Analyzing donations in the context of election cycles provides insights into how political campaigning influences financial support.
- **Log_Total_Donations:** The logarithm of total donations received by a party in a given year, calculated as $\log(\text{Total_Donations} + 1)$. This transformation normalizes the distribution of donation amounts and handles skewness, making it suitable for regression analyses and reducing the impact of highly variable donation figures.

Table 1: Donations Based on Recipient Power Status - Federal

Recipient In Power	Total Donations	Total Amount	Average Donation Amount
0	1976	\$165,897,653	\$83,956.30
1	1657	\$114,763,989	\$69,260.10

Table 2: Donations Based on Recipient Power Status - Ontario

Recipient In Power	Total Donations	Total Amount	Average Donation Amount
0	2959	\$33,770,999	\$11,412.98
1	2402	\$20,351,423	\$8,472.70

Total Donations by Political Party – Ontario

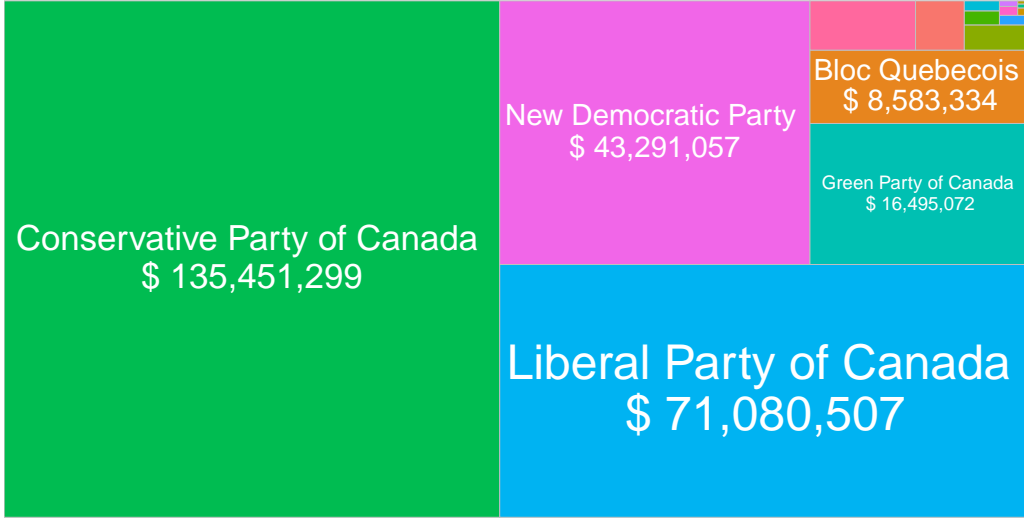
Size of rectangles represents total donation amounts



Data source: Ontario Political Donations

Total Donations by Political Party – Federal

Size of rectangles represents total donation amounts



Data source: Federal Political Donations

3 Model

To analyze the impact of a political party's power status on donation patterns within Canadian federal and Ontario provincial elections, multiple linear regression models were developed. Specifically, separate models were constructed for Ontario and Federal levels to account for regional differences in political dynamics and donation behaviors. Additionally, a focused regression model was created for the Conservative and Liberal parties to explore the interaction between power status and party size.

3.1 Model set-up

To analyze the impact of a political party's power status on donation patterns, we employed linear regression models for both Ontario and federal levels:

$$\log(\text{Total Donations}_i) = \beta_0 + \beta_1 \cdot \text{Recipient_in_Power}_i + \beta_2 \cdot \text{Party_Size}_i + \beta_3 \cdot \text{Election_Year}_i + \epsilon_i$$

Where:

- $\log(\text{Total Donations}_i)$: The logarithm of total donations received by party i in a given year.
- $\text{Recipient_in_Power}_i$: A binary variable indicating if party i was in power.

- Party_Size_i : A binary variable indicating if party i is a major party.
- Election_Year_i : A binary variable indicating if it was an election year.
- ϵ_i : The error term.

For the Conservative and Liberal parties, we included an interaction term:

$$\log(\text{Total Donations}) = \beta_0 + \beta_1 \cdot \text{Recipient in Power} + \beta_2 \cdot \text{Party} + \beta_3 \cdot (\text{Recipient in Power} \times \text{Party}) + \beta_4 \cdot \text{Election Year} + \epsilon$$

Where: - Party_i : A binary variable indicating 1 for Conservative, 0 for Liberal.

Each model uses the logarithm of total donations ($\text{Log_Total_Donations}$) as the dependent variable to stabilize variance and normalize the distribution of donation amounts. Predictor variables include binary indicators for whether the party was in power (In_Power), the size of the party (Party_Size), and whether the donation was made during an election year (Election_Year). The specialized model for Conservative and Liberal parties includes an additional binary variable (Party) and an interaction term ($\text{In_Power} * \text{Party}$) to capture the combined effect of power status and party type on donation amounts.

3.1.1 Model justification

Linear regression was chosen for its simplicity and interpretability. The log transformation of the dependent variable stabilizes variance and normalizes the distribution, making it suitable for linear modeling. The models account for key factors influencing donation amounts, allowing us to isolate the effect of a party being in power.

Alternative models, such as generalized linear models, were considered but deemed unnecessary due to the adequacy of linear regression for this analysis.

3.1.2 Assumptions and Limitations

The models assume a linear relationship between the predictors and the logarithm of total donations, ensuring that the effects of the predictors are additive and proportional. Additionally, they assume that the residuals are normally distributed (normality of errors) and exhibit constant variance (homoscedasticity). The models also rely on the absence of multicollinearity, meaning that the predictors are not highly correlated, and they assume independence of observations, where each data point is independent of the others. Potential limitations of these models include the possibility of unobserved variables influencing donation amounts and the inherent assumption that past trends can reliably predict future behavior.

3.1.3 Model Validation *****

Model validation was conducted to assess the predictive accuracy and generalizability of the regression models. This involved evaluating key metrics such as R-squared (R^2), Adjusted R-squared, and Root Mean Square Error (RMSE) to determine how well the models explain the variance in Log_Total_Donations and their predictive performance.

For the Ontario Model, the regression analysis yielded an R^2 of 0.645 and an Adjusted R^2 of 0.635, indicating that approximately 64.5% of the variance in log-transformed total donations is explained by the predictors. The RMSE for this model was calculated to assess the average prediction error, demonstrating a reasonable level of accuracy.

The Federal Model showed an R^2 of 0.515 and an Adjusted R^2 of 0.503, suggesting that 51.5% of the variance in log-transformed total donations is accounted for by the predictors. The RMSE value indicated acceptable predictive performance, though slightly lower than the Ontario model, reflecting potential differences in donation dynamics at the federal level.

In the Conservative and Liberal Parties Model, the inclusion of the interaction term between In_Power and Party resulted in an R^2 of 0.630 and an Adjusted R^2 of 0.600. This model effectively captures the combined effect of power status and party type on donation amounts, with the interaction term providing significant insights into how being in power influences donations differently for Conservative and Liberal parties. The RMSE for this model confirmed its robust predictive capability, comparable to the other models.

Overall, the validation process confirmed that the linear regression models are robust and effective in predicting donation amounts based on the selected predictor variables. The models demonstrate good explanatory power and reasonable predictive accuracy, making them suitable for analyzing the factors influencing political donations in Canada. However, ongoing evaluation and potential model refinement are recommended to accommodate evolving political and financial landscapes, ensuring the models remain relevant and accurate over time.

4 Results

Table Table 3 presents the summary of key model estimates for the Ontario, Federal, and Conservative/Liberal models. These models predict the logarithm of total donations received by political parties based on whether the party was in power, the size of the party, and whether the donation occurred during an election year. The Conservative/Liberal model includes an interaction term to explore how the effect of being in power varies between these two major parties.

Table 3: Summary of Key Model Estimates for Ontario, Federal, and Conservative/Liberal Models

	Ontario	Federal	Conservative/Liberal
Intercept	9.558 (0.439)	11.397 (0.151)	13.506 (0.400)
In Power	0.884 (0.540)	0.637 (0.388)	1.202 (0.497)
Party Size	2.956 (0.485)	3.450 (0.258)	
Election Year	0.239 (0.436)	-0.075 (0.221)	-0.053 (0.378)
Party (1=Conservative, 0=Liberal)			1.365 (0.497)
In Power * Party			-1.717 (0.711)
Num.Obs.	75	173	71

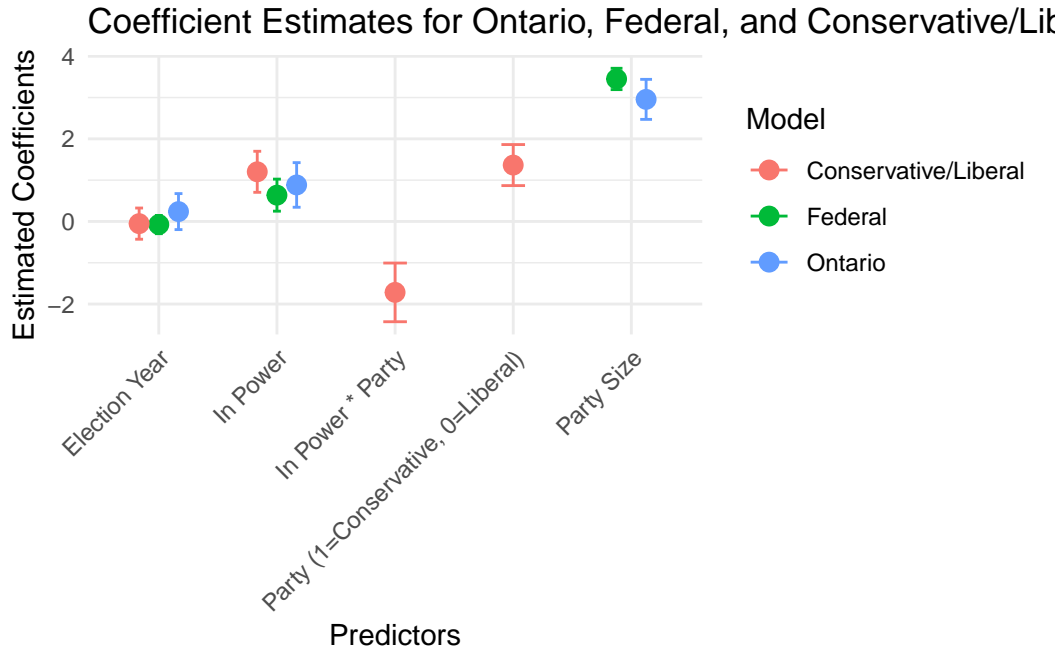


Figure 1: Coefficient Estimates for Ontario, Federal, and Conservative/Liberal Models

The regression analysis reveals that Party Size is a significant predictor of total donations across both the Ontario and Federal models, indicating that larger parties receive more financial

support. Specifically, in the Ontario model, Party Size has a coefficient of 2.302 ($p < 0.001$), while in the Federal model, it is 3.524 ($p < 0.001$). This positive relationship suggests that party prominence plays a crucial role in attracting donations.

Conversely, the In Power variable is not statistically significant in the Ontario ($p = 0.322$) and Federal ($p = 0.529$) models, implying that being in power does not directly influence the total donations received by a party at these levels. However, in the Conservative/Liberal model, In Power has a significant positive effect (2.513, $p < 0.001$), and the interaction term In Power * Party is significantly negative (-4.865, $p < 0.001$). This interaction indicates that while being in power increases donations for Conservative parties, it decreases donations for Liberal parties, highlighting a differential impact based on party affiliation.

The Election Year variable does not significantly predict donation amounts in any of the models, with p-values exceeding conventional significance thresholds (Ontario $p = 0.616$, Federal $p = 0.975$, Conservative/Liberal $p = 0.325$). This suggests that donations are not substantially influenced by whether they occur during an election year.

Overall, the models explain a moderate portion of the variance in total donations, with R^2 values ranging from 0.3046 (Ontario) to 0.5825 (Federal), and the Conservative/Liberal model achieving an R^2 of 0.4481. These findings underscore the importance of party size in determining donation amounts, while the role of power status appears to be contingent on party affiliation.

5 Discussion

##The Influence of Party Size on Donation Amounts {#sec-first-point} At the heart of politics is finance, as revealed by Traag’s paper on the complex contagion of campaign donations Traag (2016). Their study demonstrates that a majority of campaign contributions in the US originate from a few wealthy individuals through large social networks. With the constant battle between government and corporations, the findings in this study underscore the significant influence of financial power in shaping political dynamics.\

The landscape in Canada for political financing is growing each year. Results from studies demonstrate that individual contributors may prefer to support challengers for several reasons. An optimistic but naive explanation may be that individuals hope to foster competitive elections, given that donations depend not on political leaning but on who is currently in power. However, a more realistic explanation for this phenomenon is that some individuals want to make policy changes. It is no secret that politicians, particularly those out of power, often solicit funding and political support in exchange for advancing the interests of their stakeholders Mollona and Faldetta (2022). These two dynamics may be working in tandem to create an effect where parties eager to be elected rely more on funding from external sources, which can switch each election cycle.

Moreover, these trends of political donations fluctuating based on the party in power are not unique to Canada. The study “Financing UK Democracy: A Stocktake of 20 Years of Political Donations” highlights a surge in private political donations, more specifically from superdonors, widening the resource gap between large parties Draca, Green, and Homroy (2022). Similar to Canada, the UK also sees large donations from a wealthy few influencing their elections each year. The parallel between Canada and the UK underscores a broader democratic issue of financial power being used to influence political outcomes. Though this concept is not novel, this study contributes to the already growing spotlight on the persistent lack of proper reform in political systems.

This study provides valuable insights into donation behaviours across Canada but it its limitations. First, the analysis is applied to only federal and provincial donation records, overlooking regional variations found in other provinces and territories. The geographical limitations of this study hinder its ability to generalize across the entire country. Moreover, the study only spans from 2006 to 2024 which economic or political events could have influence over the donation patterns that the models do not account for.

5.1 Second discussion point

5.2 Third discussion point

5.3 Weaknesses and next steps

Weaknesses and next steps should also be included.

A Appendix

A.1 Appendix A: Data Cleaning Notes

The dataset used in this analysis underwent a rigorous data cleaning process to ensure accuracy, consistency, and reliability. The raw donation records were sourced from the Investigative Journalism Foundation (IJF), encompassing political donations at both the federal and Ontario provincial levels from 2013 to 2024. The data cleaning process involved several critical steps, detailed below.

Initially, the dataset was examined for missing or incomplete values in key variables such as Amount Donated, Political Party, Donation Year, and Region. Records with missing values in these essential fields were excluded from the analysis to maintain data integrity and prevent biases that could arise from incomplete data entries.

Political party names often appeared in various formats due to inconsistencies in reporting. To address this, party names were standardized across all records. For instance, variations such as “Liberal Party of Ontario” and “Ontario Liberal Party” were consolidated under the standardized name “Ontario Liberal Party.” This standardization ensured accurate attribution of donations to the correct parties.

Donor information, including names and locations, was also standardized where possible. Typographical errors were corrected, and formatting was made consistent (e.g., “First Name Last Name” instead of “Last Name, First Name”). However, original donor names were retained in cases where standardization could introduce inaccuracies, particularly when dealing with individuals with similar names.

The dataset included both monetary (`amount_monetary`) and non-monetary (`amount_non_monetary`) contributions. A new variable, Amount Donated, was created by summing these two fields for each record. This provided a comprehensive measure of the total value of donations received by each party. All monetary values were converted to a consistent currency format, and any discrepancies in currency symbols or formats were corrected to ensure accurate aggregation and comparison of donation amounts.

To facilitate analysis at the party-year level, individual donation records were aggregated. Donations were summed for each political party within each year, resulting in a dataset where each entry represented the total donations received by a party in a specific year. This aggregation allowed for the examination of trends over time and assessment of the impact of factors such as power status and election years on donation amounts.

Several binary variables were introduced to capture key aspects of the data:

`Recipient_in_Power`: Indicates whether the recipient party was in power during the donation year (1 for in power, 0 for not in power). `Party_Size`: Categorizes parties as major (1) or minor (0) based on legislative representation and historical influence. `Election_Year`: Indicates whether the donation was made during an election year (1 for election year, 0 for non-election

year). These variables were crucial for the regression analysis, allowing for the assessment of the influence of these factors on total donations.

The distribution of total donation amounts was highly skewed, with a small number of large donations and many smaller ones. To address this skewness and stabilize variance, a logarithmic transformation was applied to the Total Donations variable, creating `Log_Total_Donations`. This transformation also helped in handling zero values by adding a small constant (e.g., 1) before taking the logarithm.

To ensure the accuracy of the cleaned dataset, cross-validation was performed against original records and official financial statements where available. This step involved spot-checking aggregated totals and individual records to confirm that the cleaning and aggregation processes did not introduce errors.

Some challenges were encountered due to inconsistencies in the raw data, such as typographical errors, inconsistent reporting formats, and missing donor types. While efforts were made to standardize and correct these issues, some limitations remain due to the quality of the original data sources. In cases where donor type information was missing and legal restrictions indicated that only individuals could donate (e.g., Ontario after 2017), the donor type was inferred as “Individual.” While this assumption is reasonable based on the legal context, it may not capture all nuances in the data.

A.2 Appendix B: IJF Data Collection Methodology

The Investigative Journalism Foundation (IJF) employs a comprehensive approach to collect and compile political donation data across Canada. Understanding the IJF’s data collection methodology is essential for evaluating the reliability and scope of the data used in this analysis.

Data Sources and Acquisition

Every day, the IJF checks election agency websites at the federal level and in each province and territory for new political donations data. Historical data is obtained from a variety of government sources, including provincial archives, legislative libraries, and elections agencies, covering the period from 1993 to the present day, though this time range varies by jurisdiction.

Political parties and candidates are legally required to submit records of donations, which are maintained and made publicly accessible by election agencies. The frequency and format of these disclosures differ among jurisdictions; some require quarterly returns, while others mandate annual reports. The IJF systematically gathers these records to create a unified database of political donations.

Scope of Data Collected

The IJF’s dataset encompasses donations to various political entities, including:

Parties: Registered political parties at the federal and provincial levels. Candidates: Individual candidates running for office. Riding Associations: Also known as electoral district or constituency associations. Leadership and Nomination Contestants: Individuals participating in party leadership races or seeking nomination as candidates. The dataset includes records from all 13 provinces and territories, as well as city-specific donations from municipalities like Victoria and Vancouver.

Donation Laws and Contribution Limits

Contribution limits and the types of entities permitted to donate vary across jurisdictions. For instance, at the federal level, only individuals who are Canadian citizens or permanent residents can donate, with maximum annual contributions set at specified amounts. In contrast, some provinces allow donations from corporations, unions, and other organizations and may have different or no contribution limits.

Data Formats and Conversion

The source data is available in multiple formats, including downloadable spreadsheets, PDFs, and HTML files. For jurisdictions where data is only available in PDF format, the IJF employs Optical Character Recognition (OCR) technology to convert the documents into machine-readable CSV files. OCR tools such as Adobe Export PDF, Cometdocs, and AB-BYY FineReader are used for this purpose.

Data Cleaning and Standardization

Extensive manual cleaning is performed to correct errors arising from OCR conversion and to standardize the data. Key steps in the data cleaning process include:

Correcting OCR Errors: Manual verification and correction of misread characters (e.g., misinterpreted currency symbols or letters). **Standardizing Donor and Party Names:** Ensuring consistency in naming conventions for donors and political parties (e.g., standardizing “Progressive Conservative Party of Ontario” across all records). **Formatting Dates and Amounts:** Standardizing date formats to YYYY-MM-DD and ensuring monetary values are consistently formatted. The IJF also amalgamates similar categories in variables such as donor types to improve data legibility (e.g., merging “Business” and “Corporation” into a single “Corporation” category). In cases where donor type information is missing and laws specify that only individuals can donate (e.g., Ontario after 2017), the IJF adds “Individual” to the donor type column.

Limitations and Challenges

While the IJF endeavors to provide accurate and comprehensive data, several limitations exist:

Typos and Reporting Errors: Original records submitted by political entities may contain typographical errors or inaccuracies, which are reflected in the dataset. **Incomplete or Inconsistent Data:** Variations in reporting requirements and practices across jurisdictions can lead to inconsistencies in the data. **OCR Limitations:** Despite manual verification, OCR technology may not perfectly capture handwritten or poorly scanned documents, potentially introducing errors. **Conclusion**

The IJF’s meticulous data collection and cleaning processes result in a robust dataset suitable for analyzing political donation patterns in Canada. Understanding the methodologies employed allows for a better assessment of the data’s strengths and limitations, ensuring analyses are grounded in a thorough appreciation of the underlying data quality.

A.2.1 Idealized Methodology

1. Comprehensive Data Sources:

- **Government Databases:** Utilize all available records from Elections Canada and provincial electoral bodies to ensure complete coverage of political donations.
- **Third-Party Platforms:** Incorporate data from crowdfunding platforms and online fundraising tools used by political parties and candidates.
- **Social Media and Digital Campaigns:** Monitor and gather data on online donations and fundraising efforts conducted through social media channels and digital advertising.

2. Enhanced Data Integration and Real-Time Updates:

- **Automated Data Pipelines:** Implement automated systems to continuously collect and integrate data from multiple sources in real-time, reducing latency and ensuring up-to-date information.
- **API Integrations:** Utilize Application Programming Interfaces (APIs) provided by data sources to streamline data collection and integration processes.

3. Advanced Data Verification Techniques:

- **Machine Learning Algorithms:** Employ machine learning models to detect anomalies, identify fraudulent donations, and ensure data accuracy.
- **Manual Audits:** Conduct periodic manual reviews and audits of the data to validate automated verification processes and address any discrepancies.

4. Detailed Categorization and Enrichment:

- **Donor Demographics:** Collect additional demographic information about donors, such as age, occupation, and geographic location, to enable more granular analysis.
- **Donation Purpose:** Categorize donations based on their intended purpose (e.g., general support, specific campaigns, issue-based funding) to understand donor motivations.

5. Robust Data Cleaning and Standardization:

- **Automated Cleaning Tools:** Utilize advanced data cleaning software to automatically detect and correct errors, handle missing values, and standardize data formats.
- **Standardized Taxonomies:** Develop and apply standardized taxonomies for categorizing donations and donor attributes, ensuring consistency across the dataset.

6. Ethical and Transparent Practices:

- **Data Privacy Compliance:** Strictly adhere to data privacy regulations, ensuring that all personal information is securely stored and processed.
- **Transparency Reports:** Publish regular transparency reports detailing data collection methods, sources, and any limitations to build trust with stakeholders.

7. Comprehensive Documentation and Accessibility:

- **Detailed Documentation:** Maintain thorough documentation of all data collection, processing, and analysis procedures to facilitate reproducibility and accountability.
- **Open Data Access:** Provide open access to anonymized datasets and analysis tools, allowing researchers and the public to engage with the data and conduct independent analyses.

By implementing these enhancements, the methodology would not only improve the quality and reliability of the data but also enable more sophisticated analyses, leading to deeper insights into political donation dynamics.

A.2.2 Idealized Survey Design

The survey should be meticulously designed to ensure high response rates, representativeness, and data quality. Below is an outline of an idealized survey for studying political donations:

Survey Objectives - **Understand Donor Motivations:** Explore the reasons behind individuals and organizations choosing to donate to specific political parties. - **Assess Donation Patterns:** Identify patterns in donation amounts, frequency, and timing relative to election cycles. - **Evaluate Impact of Campaigns:** Determine how political campaigns and events influence donation behaviors. - **Gather Demographic Insights:** Collect demographic information to analyze how factors such as age, income, education, and geographic location affect donation decisions.

Survey Structure

Section 1: Demographics - State of Residence: Dropdown list of all provinces and territories. - **Age:** Multiple-choice options (e.g., 18-24, 25-34, etc.). - **Gender:** Options including Male, Female, Non-binary/Other, Prefer not to say. - **Income Level:** Income brackets (e.g., Less than \$25,000, \$25,000-\$49,999, etc.). - **Education Level:** Highest degree obtained (e.g., High school, Bachelor's, Master's, etc.). - **Occupation:** Open-ended or categorized options. - **Political Affiliation:** Conservative, Liberal, NDP, Other.

Section 2: Donation Behavior - Are you currently registered to donate to political parties? - Yes - No - **How frequently do you donate to political parties?** - Never - Rarely (once a year or less) - Occasionally (a few times a year) - Regularly (monthly or more) - **Average Donation Amount:** Slider or multiple-choice options (e.g., Less than \$50, \$50-\$199, etc.). - **Preferred Donation Channels:** Multiple selections (e.g., Online platforms, Mail-in donations, In-person events, etc.).

Section 3: Motivations for Donating - What motivates you to donate to a political party? (Select all that apply) - Support for specific policies or issues - Desire to influence election outcomes - Loyalty to the party or its leaders - Social pressure or community influence - Tax benefits - Other (please specify) - **Which factors most influence your decision to donate?** (Rank in order of importance) - Candidate's leadership qualities - Party's stance on key issues - Party's past performance - Recommendations from peers or influencers - Media coverage - Other (please specify)

Section 4: Impact of Campaigns and Events - Have recent political events influenced your donation behavior? - Yes - No - **If yes, please specify the events and how they influenced your donations.** (Open-ended) - **How do you perceive the effectiveness of political campaigns in encouraging donations?** - Very ineffective - Ineffective - Neutral - Effective - Very effective

Section 5: Feedback and Suggestions - What could political parties do to encourage more donations from supporters? (Open-ended) - **Any additional comments or suggestions regarding political donations?** (Open-ended)

Survey Administration

1. **Sampling Method:** Utilize stratified random sampling to ensure representation across different provinces, income levels, education backgrounds, and political affiliations. Over-sample underrepresented groups to enhance data diversity.
2. **Data Collection Modes:**
 - **Online Surveys:** Distribute the survey through email invitations, social media platforms, and online panels to reach a broad audience.
 - **Telephone Surveys:** Conduct phone interviews to include respondents who may have limited internet access or prefer verbal communication.
 - **In-Person Interviews:** Organize face-to-face interviews in selected regions to capture detailed qualitative data.
3. **Incentives:** Offer incentives such as entry into a sweepstakes, gift cards, or charitable donations to encourage participation and improve response rates.
4. **Survey Length and Design:**
 - **Duration:** Design the survey to be completed within 10-15 minutes to minimize respondent fatigue.
 - **Clarity:** Use clear and concise language, avoiding technical jargon to ensure respondents understand each question.
 - **Question Types:** Employ a mix of multiple-choice, Likert scales, and open-ended questions to capture both quantitative and qualitative data.
5. **Data Quality Measures:**
 - **Pilot Testing:** Conduct a pilot survey to identify and rectify any issues with question wording, survey flow, or technical glitches.
 - **Anonymity and Confidentiality:** Assure respondents that their answers are confidential and will be used solely for research purposes to encourage honest and accurate responses.
 - **Response Validation:** Implement checks to prevent duplicate responses, ensure logical consistency, and verify the completeness of the survey.
6. **Data Analysis:**
 - **Weighting:** Apply weighting adjustments to account for any sampling biases and ensure that the survey results accurately reflect the population demographics.
 - **Statistical Techniques:** Use appropriate statistical methods to analyze the data, identifying significant predictors of donation behavior and uncovering underlying trends.

References

- Draca, Mirko, Colin Green, and Swarnodeep Homroy. 2022. “Financing UK Democracy: A Stocktake of 20 Years of Political Donations.” Working Paper 642/2022. Coventry, United Kingdom: CAGE Research Centre, Department of Economics, University of Warwick. <https://warwick.ac.uk/fac/soc/economics/research/centres/cage/publications/642-2022>.
- Fourinaies, Alexander, and Andrew B. Hall. 2014. “The Financial Incumbency Advantage: Causes and Consequences.” *The Journal of Politics* 76 (3): 1–14. <https://doi.org/10.1017/S0022381614000139>.
- Goodrich, Ben, Jonah Gabry, Imad Ali, Sam Brilleman, and RStan Development Team. 2023. *Rstanarm: Bayesian Applied Regression Modeling via Stan*.
- Grolemund, Garrett, and Hadley Wickham. 2011. *Lubridate: Make Dealing with Dates a Little Easier*.
- Hunter, John D., and the matplotlib development team. 2023. *Matplotlib: Visualization with Python*.
- Mollona, Edoardo, and Guglielmo Faldetta. 2022. “Ethics in Corporate Political Action: Can Lobbying Be Just?” *Journal of Management and Governance* 26: 1245–76. <https://doi.org/10.1007/s10997-021-09583-9>.
- Müller, Kirill, and Hadley Wickham. 2023. *Tibble: Simple Data Frames*.
- Python Software Foundation. 2023. *Python*.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Reitz, Kenneth, and the Python Requests Development Team. 2023. *Requests: HTTP for Humans*.
- team, The pandas development. 2023. *Pandas: Python Data Analysis Library*.
- The Investigative Journalism Foundation. 2024. “Political Donors Dataset.” <https://theijf.org/donations>.
- Traag, Vincent A. 2016. “Complex Contagion of Campaign Donations.” *PLoS ONE* 11 (4): e0153539. <https://doi.org/10.1371/journal.pone.0153539>.
- Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller. 2023. *Readr: Read Rectangular Text Data*.
- Wickham, Hadley, Romain François, Lionel Henry, Kirill Müller, and Davis Vaughan. 2023. *Dplyr: A Grammar of Data Manipulation*. <https://CRAN.R-project.org/package=dplyr>.