

# Money Matters?

Analysis of election spending of the 2019 senatorial candidates

TEAM SNOWBALL

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### What does the election law say?

Section 13. Authorized Expenses of Candidates and Political Parties:

a) For candidates:

President/Vice President = P10.00

Other candidates = P 3.00

Without party or support = P 5.00

b) For political parties = P5.00

*“**Campaign finance** raises fundamental ethical questions - freedom of expression and prevention of corruption”*



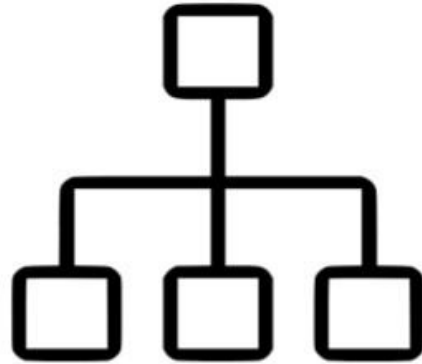
*Does **Money Matter** in determining  
the winnability of election  
candidates?*

## Objective

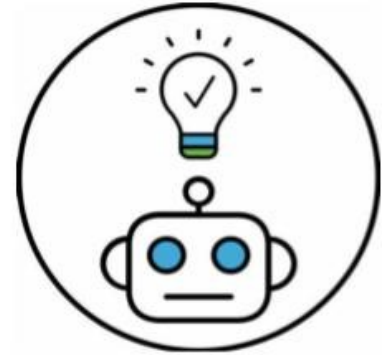
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Determine spending trends during campaign season that would raise voter awareness and education



Understand how successful candidates source and spend their funds



Build machine learning models to gain more insights on the impact of campaign finance in relation to election results

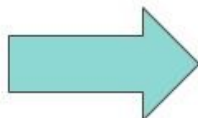


## Data Sources and Features



2019 Senatorial Votes Dataset

2019 Candidate Campaigns  
Dataset



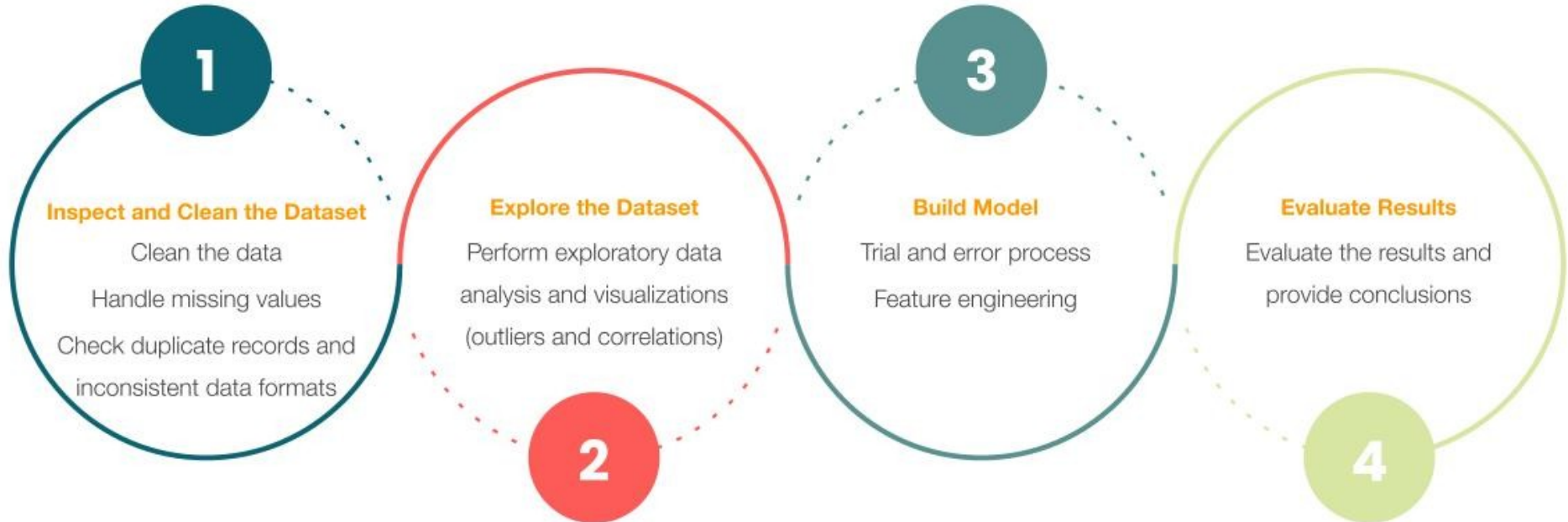
## SNOWBALL

| #  | Column  | Non-Null Count | Dtype   |
|----|---|----------------|---------|
| 0  | Candidate Number                                    | 62 non-null    | int64   |
| 1  | Candidate   | 62 non-null    | object  |
| 2  | Coalition   | 49 non-null    | object  |
| 3  | Party   | 62 non-null    | object  |
| 4  | Political Party                                     | 43 non-null    | object  |
| 5  | Win   | 43 non-null    | float64 |
| 6  | Cash Contributions Received from Other Sources      | 43 non-null    | float64 |
| 7  | In-Kind Contributions Received from Other Sources   | 43 non-null    | float64 |
| 8  | Cash Contributions Received from Political Party    | 43 non-null    | float64 |
| 9  | In-Kind Contributions Received from Political Party | 43 non-null    | float64 |
| 10 | Total Contributions Received                        | 43 non-null    | float64 |
| 11 | Expenditures Paid Out of Personal Funds             | 43 non-null    | float64 |
| 12 | Expenditures Paid Out of Cash Contributions         | 43 non-null    | float64 |
| 13 | Exp_Cash_Cont.                                      | 43 non-null    | float64 |
| 14 | Total Expenditures Incurred                         | 43 non-null    | float64 |
| 15 | Difference (Contribution less Expenditure)          | 43 non-null    | float64 |
| 16 | Unpaid Obligation / Balance                         | 43 non-null    | float64 |
| 17 | Travel Expenses                                     | 43 non-null    | float64 |
| 18 | Compensation of campaigners, etc.                   | 43 non-null    | float64 |
| 19 | Communications                                      | 43 non-null    | float64 |
| 20 | Stationery, Printing, and Distribution              | 43 non-null    | float64 |
| 21 | Employment of Poll Watchers                         | 43 non-null    | float64 |
| 22 | Rent, Maintenance, etc.                             | 43 non-null    | float64 |
| 23 | Political Meetings and Rallies                      | 43 non-null    | float64 |
| 24 | Pol Ads   | 43 non-null    | float64 |
| 25 | Total SLE   | 43 non-null    | float64 |
| 26 | Employment of Counsel                               | 43 non-null    | float64 |
| 27 | Copying and Classifying List of Voters              | 43 non-null    | float64 |
| 28 | Printing of Sample Ballots                          | 43 non-null    | float64 |
| 29 | Total Expenditures                                  | 43 non-null    | float64 |
| 30 | Difference Total in SCE minus Total SLE             | 43 non-null    | float64 |
| 31 | Votes   | 62 non-null    | int64   |

dtypes: float64(26), int64(2), object(4)

# Methodology

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## Preliminary Analysis

New Visitor    Returning Visitor

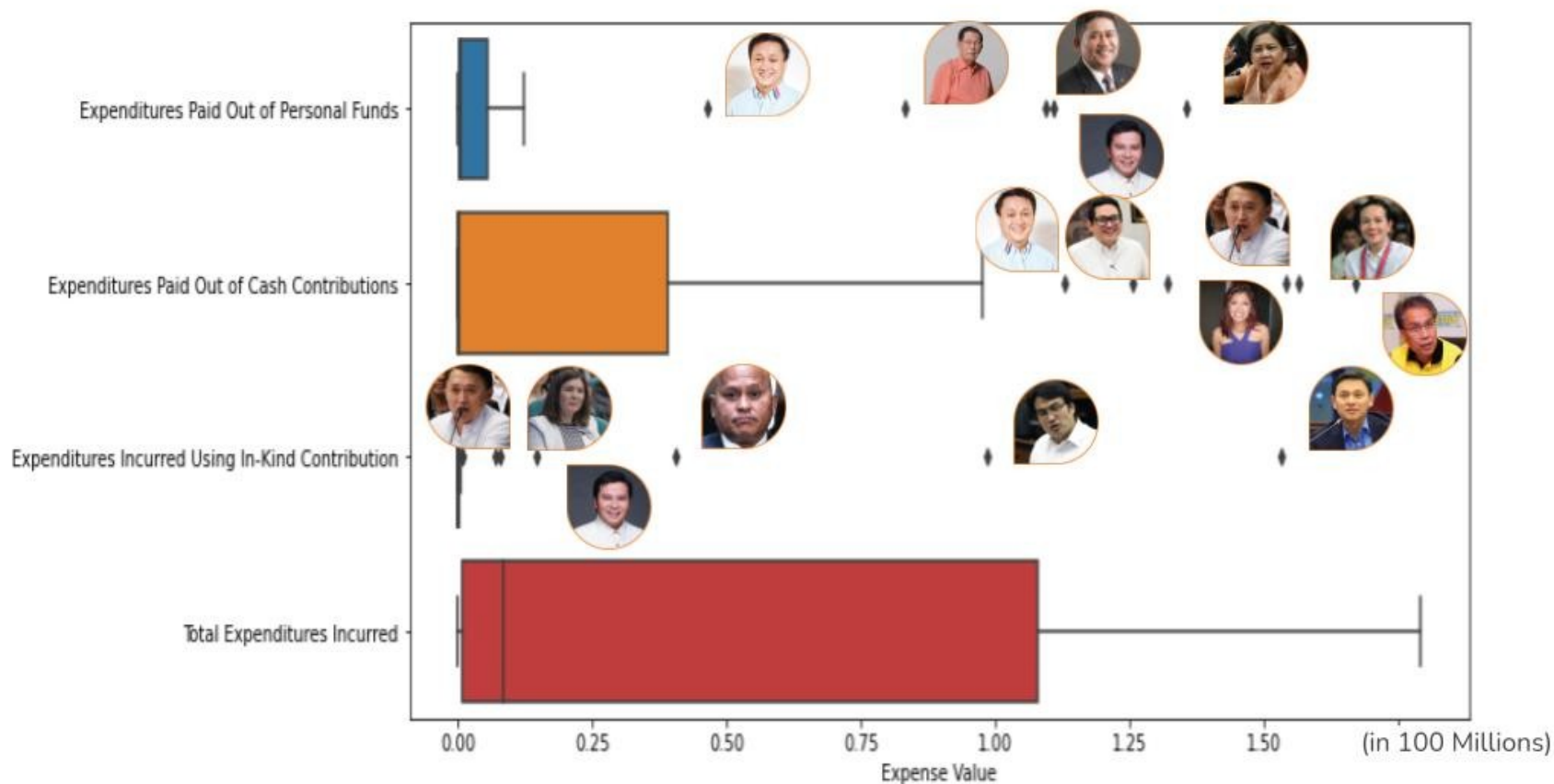




## Analysis of candidate spending

SNOWBALL

DISTRIBUTION OF EXPENSES - ALL CANDIDATES

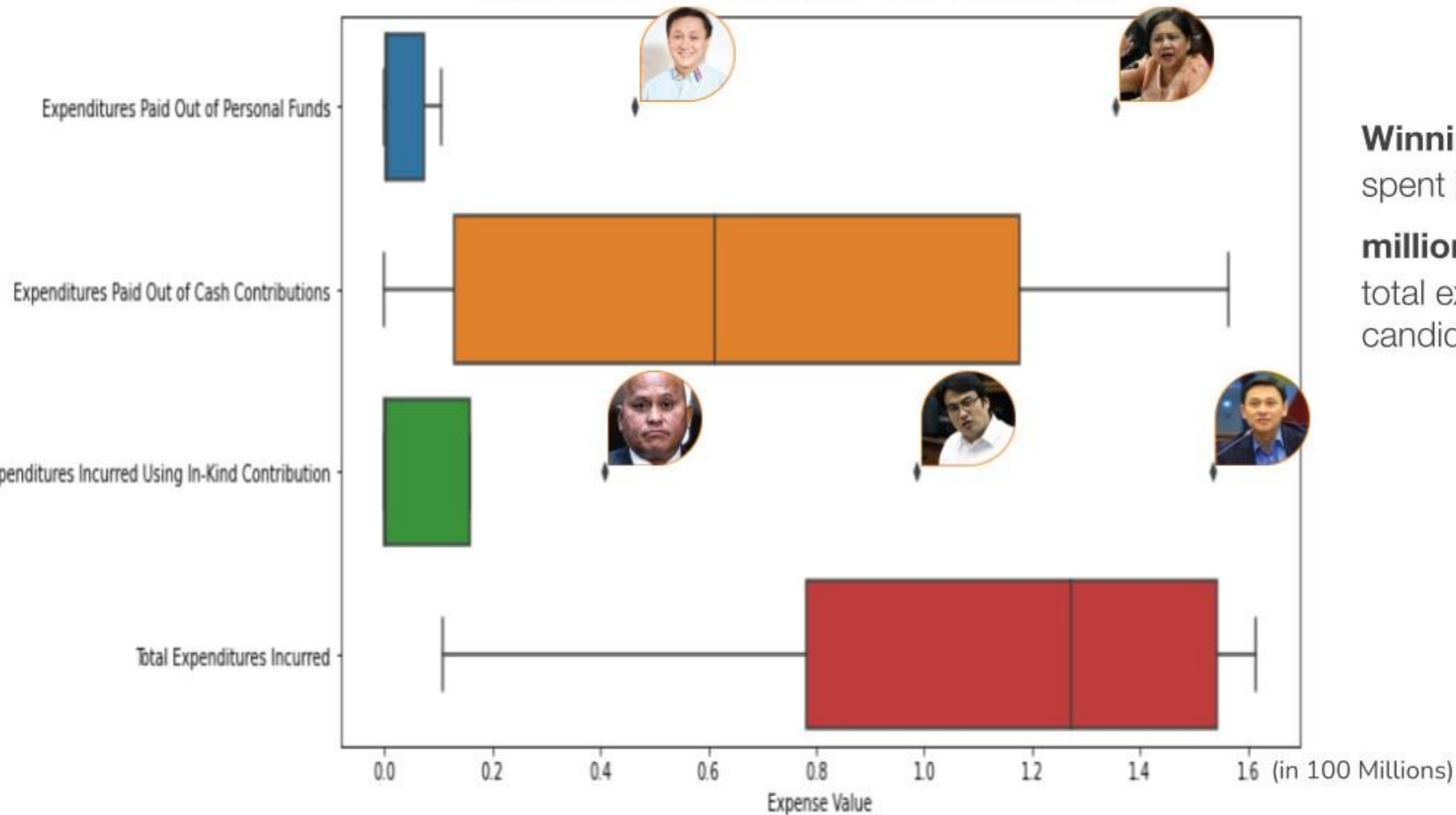


Average Total Expenditures incurred per candidate is around **Php 50 million**.

## Analysis of candidate spending

SNOWBALL

DISTRIBUTION OF EXPENSES - ALL CANDIDATES

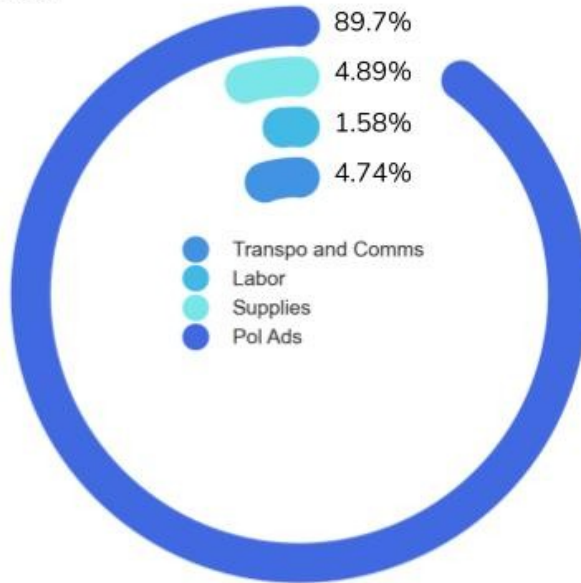


**Winning candidates**  
spent **2x (Php 98 million)** the average total expenditures of all candidates.

## Analysis of candidate spending

SNOWBALL

*How do senatorial candidates spend their money?*

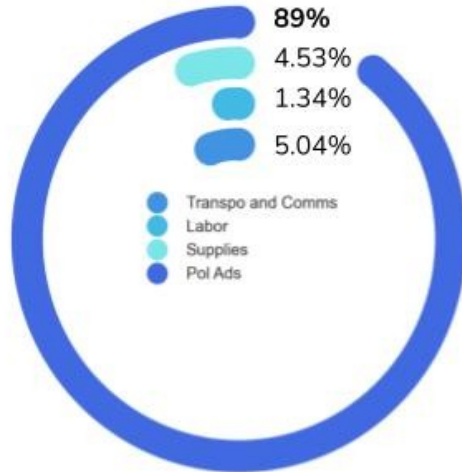


**90%** of total spending were from **Political Ads.**

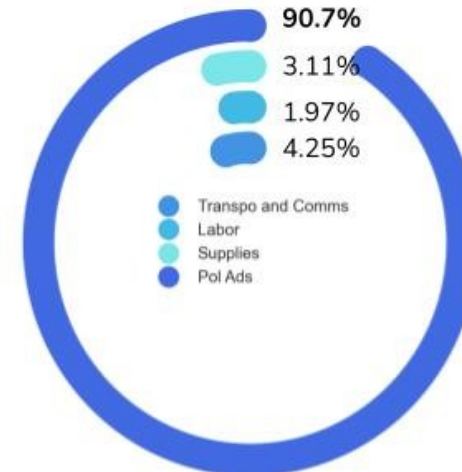
## Analysis of candidate spending

SNOWBALL

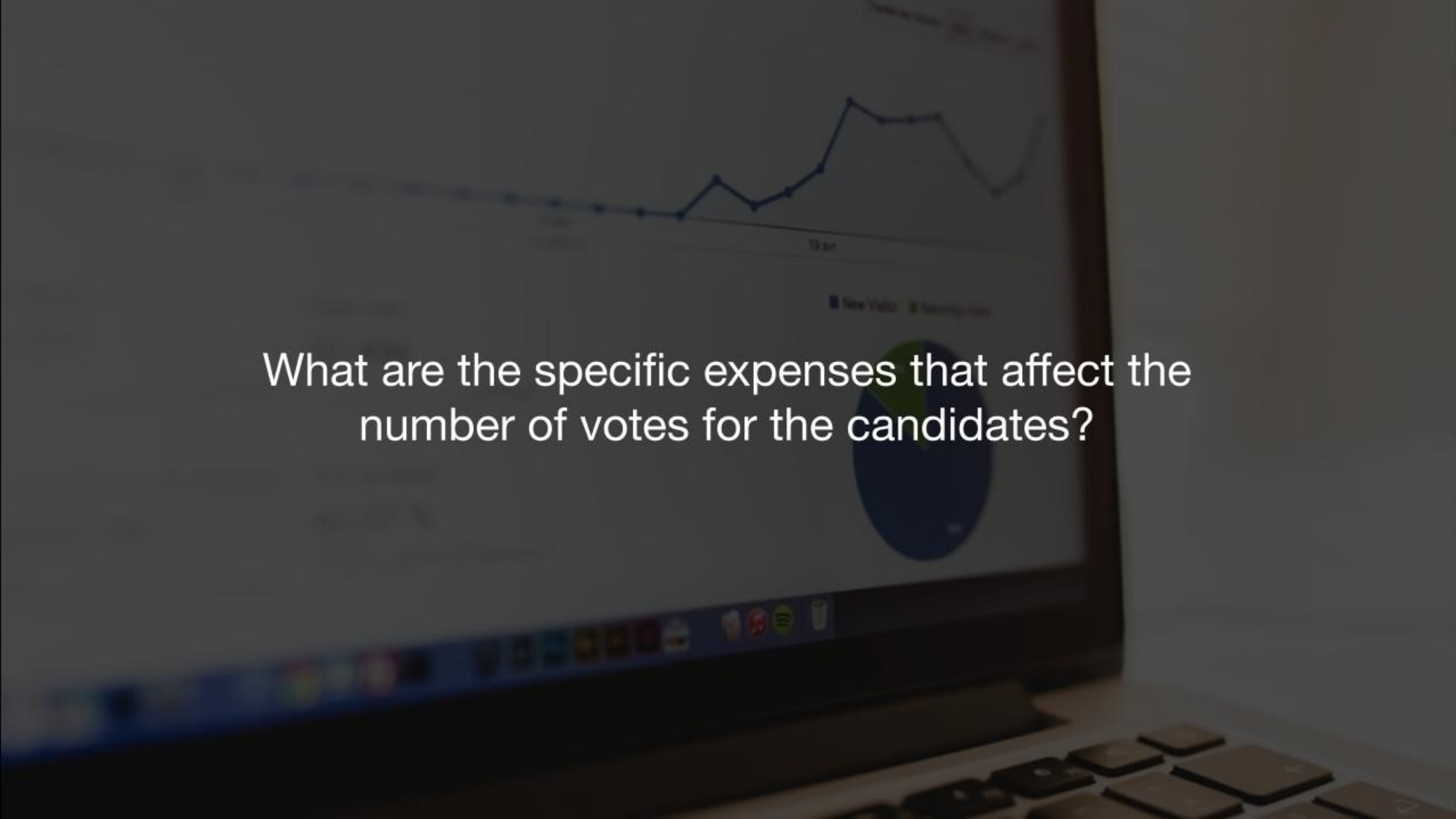
Spending Breakdown of Winning Candidates



Spending Breakdown of Losing Candidates



Spending allocations among the candidates are almost consistent regardless of whether they won or not.

A laptop screen is shown, displaying a line graph and a pie chart. The line graph has a blue line with markers, showing an upward trend with some fluctuations. The pie chart is partially visible, showing a blue and green section. The text overlay is centered on the screen.

What are the specific expenses that affect the number of votes for the candidates?



# Pearson Correlation

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### Correlation vs Votes

Pearson  
Correlation  
Coefficient

|   |              |
|---|--------------|
| <b>Political Ads</b>                                  | <b>0.781</b> |
| <b>Cash Contributions Received from Other Sources</b> | <b>0.631</b> |
| <b>Expenditures Paid Out of Cash Contributions</b>    | <b>0.631</b> |
| <b>Stationery Printing and Distribution</b>           | <b>0.624</b> |
| Travel Expenses                                       | 0.52         |
| Political Meetings and Rallies                        | 0.429        |
| Compensation of campaigners                           | 0.428        |
| Employment of Counsel                                 | 0.409        |
| Communications  | 0.382        |

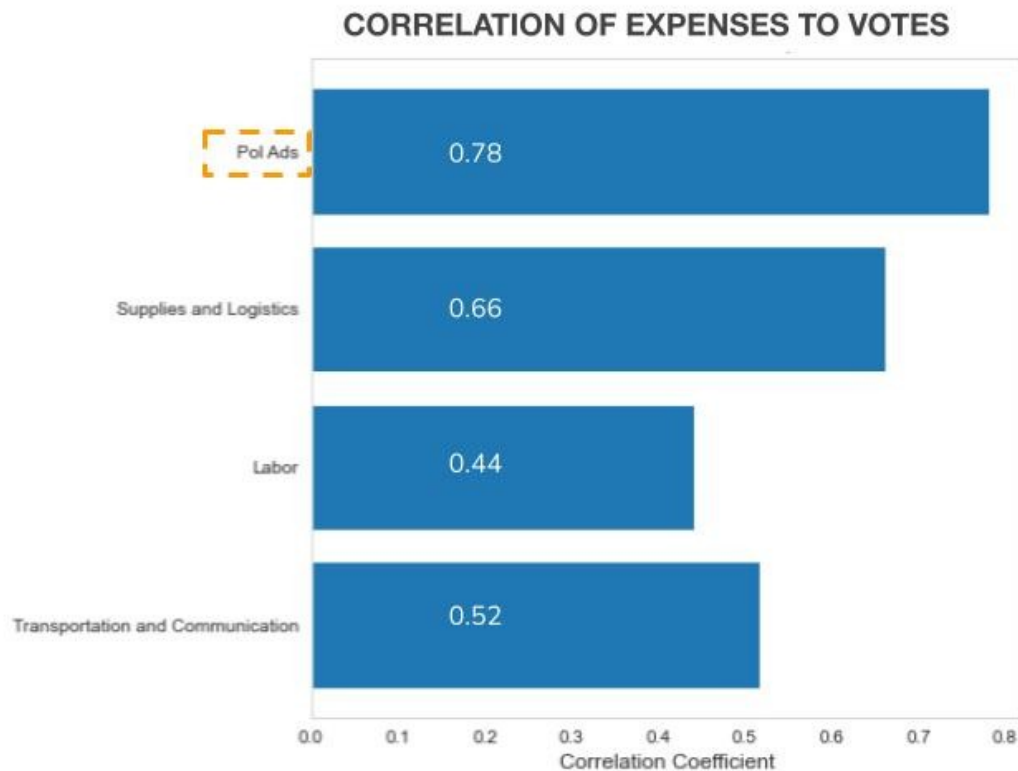
|   |        |
|---|--------|
| Expenditures Incurred Using In-Kind Contribution    | 0.355  |
| In-Kind Contributions Received from Other Sources   | 0.345  |
| Expenditures Paid Out of Personal Funds             | 0.338  |
| In-Kind Contributions Received from Political Party | 0.298  |
| Cash Contributions Received from Political Party    | 0.155  |
| Rent Maintenance, etc                               | 0.126  |
| Employment of Poll Watchers                         | 0.063  |
| Printing of Sample Ballots                          | 0.056  |
| Copying and Classifying List of Voters              | -0.100 |

Pearson Correlation indicates how much one variable increases when the other increases and visa versa.

Interestingly, **Copying and Classifying List of Voters** is negatively correlated with the Number of Votes.

## Analysis of candidate spending

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*Which type of activity did senatorial candidates spend money to increase votes?*

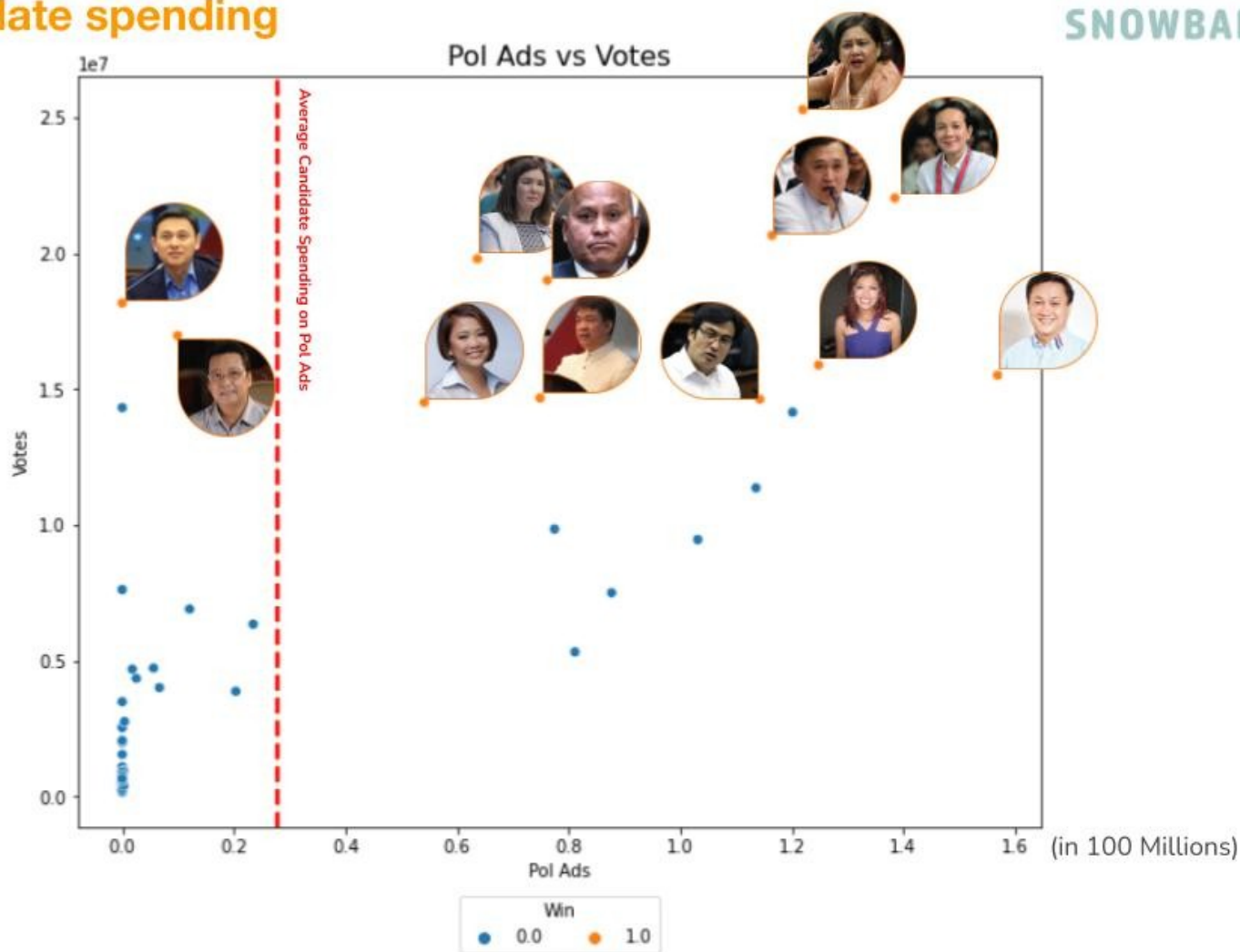
**Political advertisements** have a strong positive correlation with votes.

## Analysis of candidate spending

### Political advertisements

have a strong positive correlation with votes.

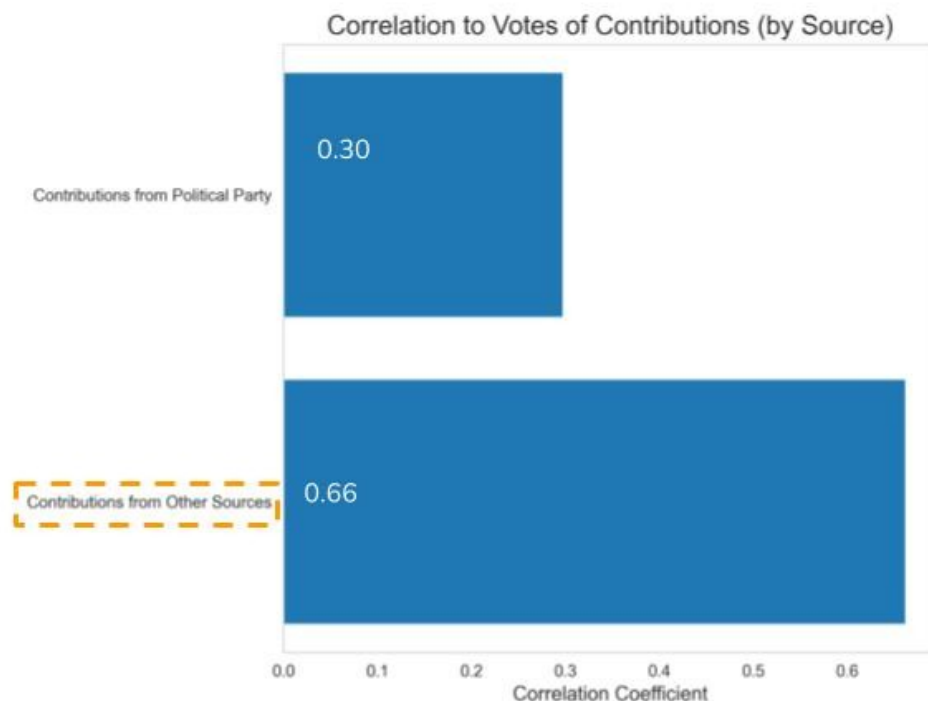
**10 out of 16 (63%)** candidates who spent at least **27.7 Million** won the senatorial election.



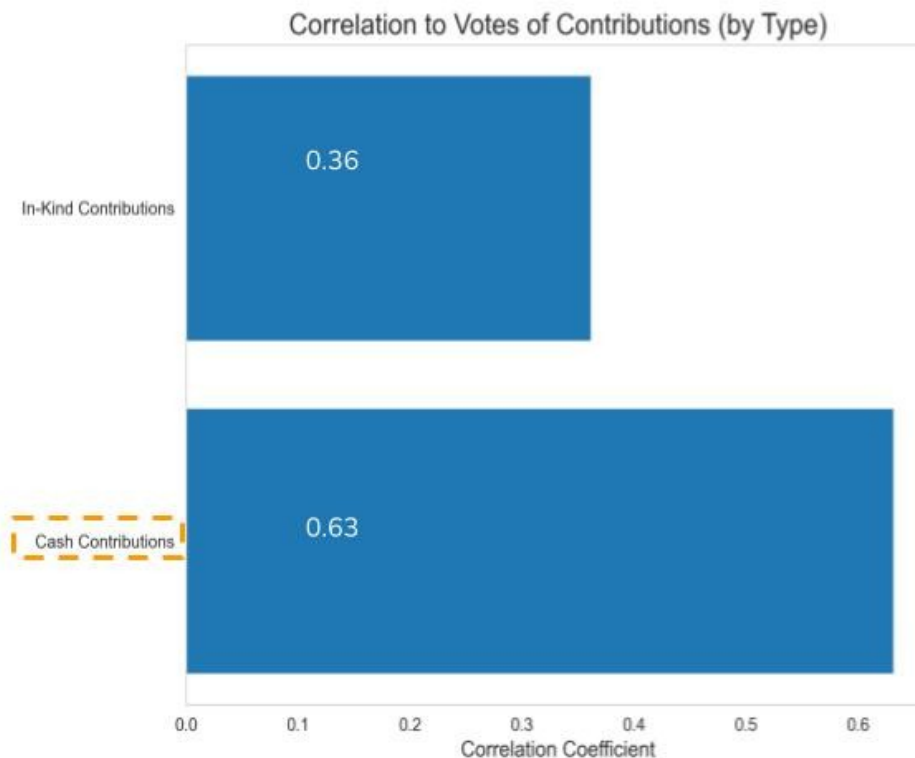
## Contributions received

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What is the source and type of contribution received by senatorial candidates with high votes?

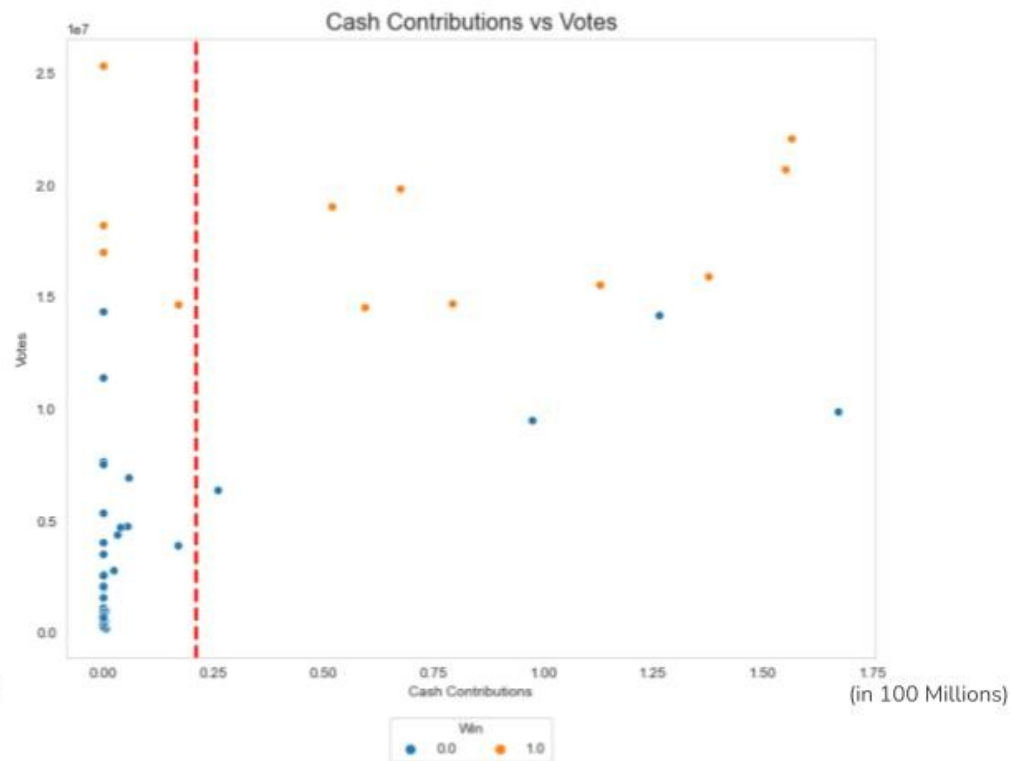


**Contributions from other sources** have a higher correlation to votes than contributions from political party.



Correlation between **Cash contributions and votes** is stronger than that of In-Kind contributions and votes.

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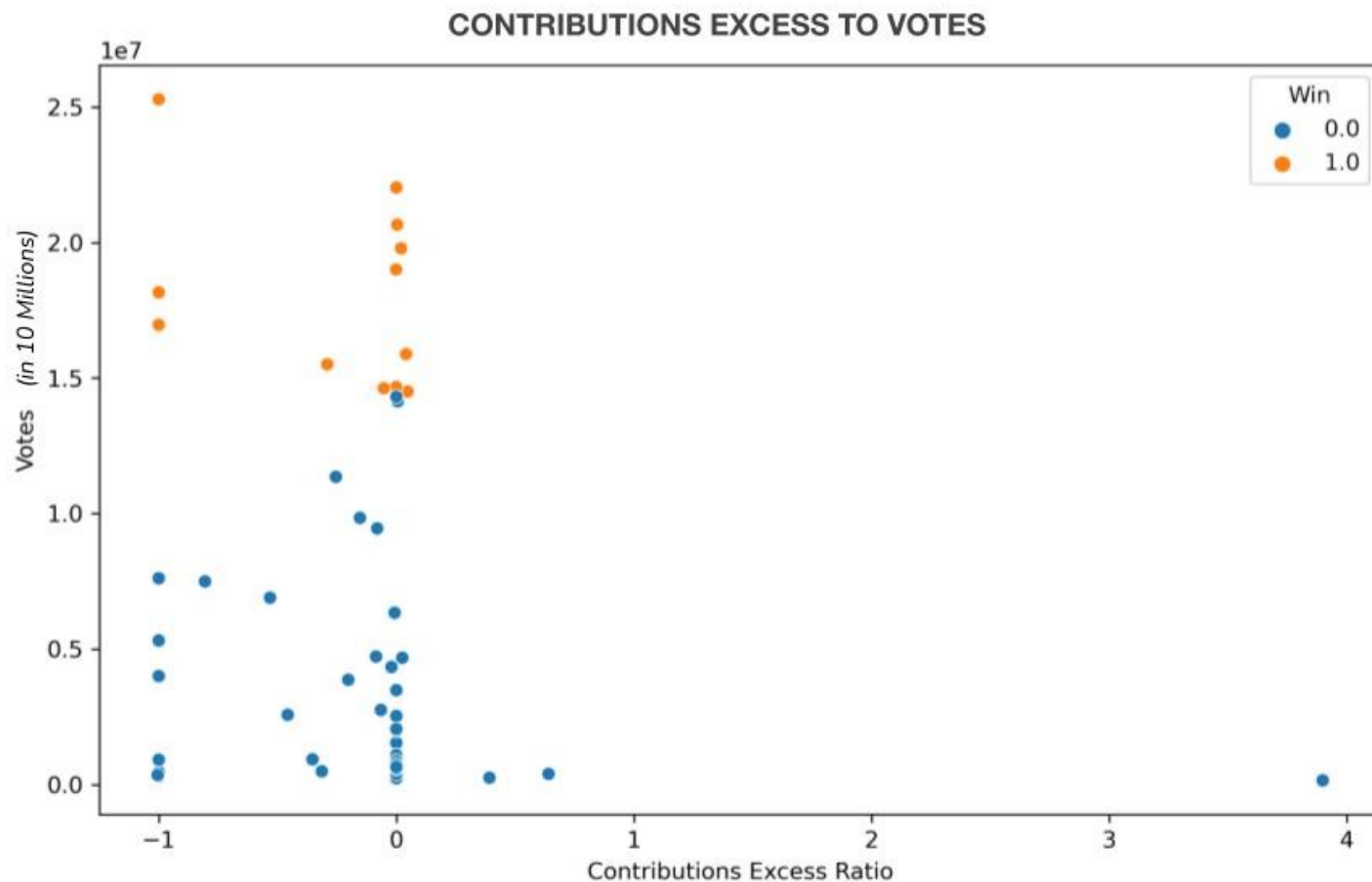


**8 out of 12 (66.7%)** of the candidates who received at least **20.8M** Cash Contributions won the election.



## Budget management

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The candidates have either gathered together towards spending more out of their personal pockets (-1) or effectively managing their budgets (0) to garner votes.

# Models



## Regression Model

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|   | B Coefficient | P-Value     |
|---|---------------|-------------|
| (Constant)  | 2,252,381.29  | 0.00        |
| <b>Employment of Poll Watchers</b>                  | <b>18.96</b>  | <b>0.01</b> |
| <b>Communications</b>                               | <b>10.26</b>  | <b>0.08</b> |
| <b>Political Meetings and Rallies</b>               | <b>5.73</b>   | <b>0.04</b> |
| In-Kind Contributions Received from Other Sources   | 0.24          | 0.01        |
| Political Ads                                       | 0.11          | 0.00        |
| In-Kind Contributions Received from Political Party | 0.09          | 0.00        |
| Expenditures Paid Out of Personal Funds             | -0.02         | 0.41        |
| Travel Expenses                                     | -0.30         | 0.39        |
| Cash Contributions Received from Political Party    | -2.50         | 0.12        |
| Printing of Sample Ballots                          | -5.64         | 0.66        |
| Rent Maintenance,etc                                | -15.73        | 0.00        |

For example, a 100 peso increase in **“Employment of Poll Watchers”** spending would lead to a 1,896 increase in the number of votes for the candidate.

The model produced has an Adjusted R-Square of .712. This means that **71.2%** of the observed variation in the number of Votes can be explained by the model.

| R    | R Square | Adjusted R Square | Std. Error of the Estimate |
|------|----------|-------------------|----------------------------|
| .874 | .764     | <b>.712</b>       | 3,787,883.04               |

at 90% level of significance\*

## Clustering - Spider Chart

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Segment 0



Segment 1



Segment 2



Segment 3



Segment 4



Segment 5



### Features columns selected:

**Cont\_Others** (Cash and In-Kind contributions received from other sources)

**Exp\_Cash\_Cont.** (Expenditures paid out of cash contributions)

**Pol Ads**

**Rent, etc.** (Rent & Maint., Stationery, printing, meetings & rallies, copying of sample ballots, etc)

**Win**

## Clustering - Spider Chart

SNOWBALL



### “Best Spenders” Group

- **22** candidates clustered in this group
- **88%** belong to a political party
- **99.96%** of their funds were from “**Other sources**” (P1.3B)
- **90%** of spending were for **Pol Ads** (P1.2B)
- **8** candidates won (36%)



## Clustering - Spider Chart

SNOWBALL

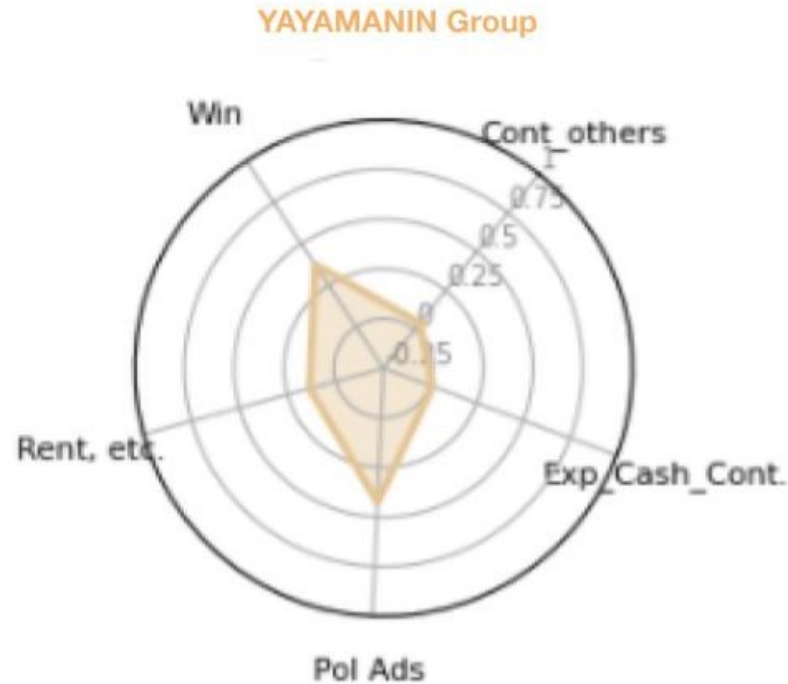


### “Walang Himala” Group

- **31** candidates clustered in this group
- **59%** belong to a political party
- Most of the expenses were paid **out of personal funds**
- Had very little spending activities
- **Very minor** spending for **Pol Ads**
- **All** candidates lost

## Clustering - Spider Chart

SNOWBALL

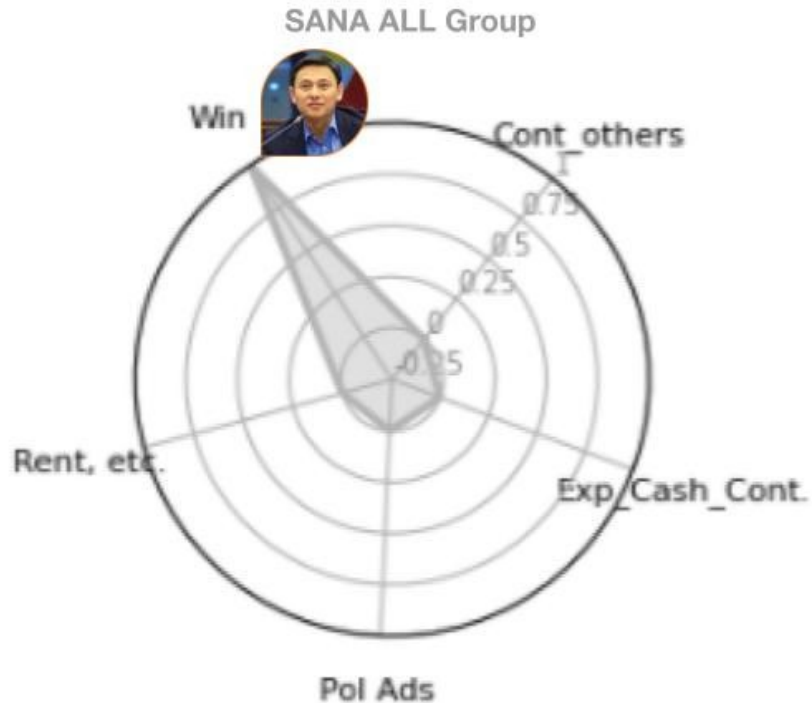


### “Yayamanin” Group

- **8** candidates clustered in this group
- **59%** belong to a political party
- **78%** expenses were paid out of personal funds (P465M or P58M ave); other funds came from political party (P172M) and “Other sources” (P56M)
- **90%** of spending were for **Pol Ads** (P535M)
- **3** candidates won (37.5%)

## Clustering - Spider Chart

SNOWBALL



### “Sana All” Group

- 1 candidate clustered in this group
- 100% belong to a political party
- 99.8% expenses were from **political party** contributions (P153M)
- 100% of spending were for **Travel & Communications**
- The candidate won

An aerial photograph of the New York City skyline at dusk. The sky is a mix of dark blue and orange, with scattered clouds. The city is densely packed with skyscrapers, many of which have their lights on. The Empire State Building is prominent in the center, with its top lit up. The Hudson River is visible on the right side of the image.

# SUMMARY & RECOMMENDATIONS

## Summary & Recommendations

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- ❑ Candidates spend on different kinds of mediums to reach voters but there is more to budget and expenditures. Not all expenses have equal vote value.
- ❑ There is a need for better auditing accountability of the candidates.
- ❑ Explore the significance of candidates' spending on social media ads.
- ❑ As a registered voter we need to be more vigilant in choosing our candidates and not just rely on these mediums being laid out to us.



## Sources

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<https://www.bworldonline.com/how-much-economic-boost-does-election-spending-deliver/>

<https://www.rappler.com/newsbreak/iq/number-registered-voters-elections-2019>

R.A. 7166 (lawphil.net)