

= case study [Australian Election 2016]



overview

The 2016 Australian election was the closest electoral race in the region's history since the 1940's. Polls closed on July 2nd 2016, yet the final count was not declared until August 5th, 2016. Malcom Turnbull (the incumbent), won the election over Bill Shorten by the narrowest of margins. To test the hypothesis that emotional drivers help to explain behavior, **Function Group Analytics** partnered with award winning **Heartbeat Ai Technologies** to build a model capable of predicting voter choice based on a combination of rational and emotional drivers. The outcome of this study proved that emotional drivers not only explain *why* a choice is made, but also improve predictive accuracy and validity overall when combined with rational drivers.



- Google Survey Platform was used to collect data across the region over a 3month time frame (May through July 2016)
- Data was weighted by age, gender and region
- A/B testing approach of the two leading candidates was used to gather rational and emotional data about each candidate
- Rational drivers included: who would you prefer, best guess of next leader, and who would you vote for

- Emotional drivers included one open end question per candidate asking feelings toward that particular candidate
- Qualitative responses were converted to binary output and weighted based on the derived weighting scheme
- RStudio was used to build, train and validate the models using a RandomForest modeling methodology
- Sample of N=943 respondents; n=743 training, n=200 validation

DATA MINING



- A combined model was built to understand performance (predictive accuracy) when emotional and rational drivers were used together
- Rational and Emotional models were built in isolation to understand performance (predictive accuracy) of these drivers on their own
- Number of trees within the models was set to 500

- Combined Model: Who would you vote for = Rational Drivers + Emotional Drivers
- Rational Model: Who would you vote for = Rational Drivers
- Emotional Model: Who would you vote for = Emotional Drivers
- Accuracy: 88%, 83%, 77% for Combined, Rational and Emotional models respectively
- Election Results (Turnbull | Shorten): Prediction 56% | 44%; Actual 52% | 48%

INSIGHTS & ANALYTICS



- Variable importance from the Rational Model clearly illustrated that voter preference toward Malcolm Turnbull, the incumbent Prime Minister, was a strong driver
- Voter choice; however, is not based solely on what a candidate's platform dictates. Voters feel a certain way about a candidate based on a number of factors; this plays an important role in determining which candidate a voter chooses

- Based on the top 5 variables from the Emotional Model, respondents indicated very similar feelings of Joy and Anger toward Turnbull and Shorten. The differentiating factor was Trust. Being the incumbent, Turnbull had already established a level of trust among Australians which gave him enough of an edge to win the election
- Our model accurately predicted the outcome of the Australian election, proving that our starting thesis was clearly upheld. Through the assessment of voter emotions, we were able to explain and distinguish voter preferences

DECISION MAKING