= case study [US Election 2016] f[x]

overview

The 2016 US election can be considered one of the most significant upsets in modern democratic times. Pollsters across the globe predicted a landslide win for Democratic candidate Hillary Clinton given her experience in, and devotion to public service – all things considered, she was the *rational* choice. Yet, despite the consistent comments and remarks made by Republican candidate Donald Trump throughout the campaign, the reality TV star now controls the largest democracy in the Western Hemisphere. Based on the success of the Australian model, **Function Group Analytics** partnered with award winning **Heartbeat Ai Technologies** to once again prove that emotional drivers not only explain *why* a choice is made, but also improve predictive accuracy and validity overall when combined with rational drivers.

DATA MINING

- Google Survey Platform was used to collect data across 4 swing states (Florida, Iowa, Ohio, Pennsylvania), from Sept – Nov 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 per state of N~300; n~200 training, n~100 validation
- Additional scoring sample of n~200/state to test validation model

INSIGHTS & ANALYTICS

- 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/Emotional Model: Who would you vote for = Rational Drivers/Emotional Drivers
- Accuracy: 93%+, 92%+, 77%+ for Combined, Rational and Emotional models respectively
- Election Results (Trump|Clinton): Florida, Iowa, Ohio, Pennsylvania
  - Predicted: 52%|48%; 58%|42%; 63%|37%; 54%|46%
  - Actuals: 51%|49%; 55%|45%; 54%|46%; 51%|49%

DECISION MAKING

- Secondary emotions provided insight into why Trump was successful in the four key swing states. While voters appeared equally angry with each candidate, the Anger associated with Trump was more aligned with the standard type of criticism directed at politicians; whereas, for Clinton, the emotions were stronger and more negative, with resentment being the strongest and characterised by words such as hate and detest
- A key distinction between the candidates came in the form of the secondary emotions related to Joy. While Clinton conveyed power and confidence (in addition to other desirable leadership traits), Trump offered optimism and encouragement consistent with the "make America great again" slogan
- The results of this study also highlighted the push and pull effect of emotions. That is, how voters feel about an alternate candidate can be just as important as how they feel about their preferred candidate