THE HALO EFFECT

No escape..!

Our Team

Abhinav Sharma
EID: ass2575

Anant Gupta
EID: ag78593

Palak Agarwal
EID: pa9797

Rahul Singla
EID: rs57244

Halo to our favourite

- What influences our favourites?
- Our impressions are often driven by unrelated aspects, prejudices or past experiences
- Halo effect is extensively observed in marketing analysis of customers' inclination toward certain products

Our objective

- Investigate halo effect in voting decisions
- Analyze stated preferences of respondents in terms of their intention to vote in 2012 elections

Our Data

ANES

American National Election Studies (2012)

Size: 5914 X 2250

Data Preprocessing

Exploratory Data Analysis

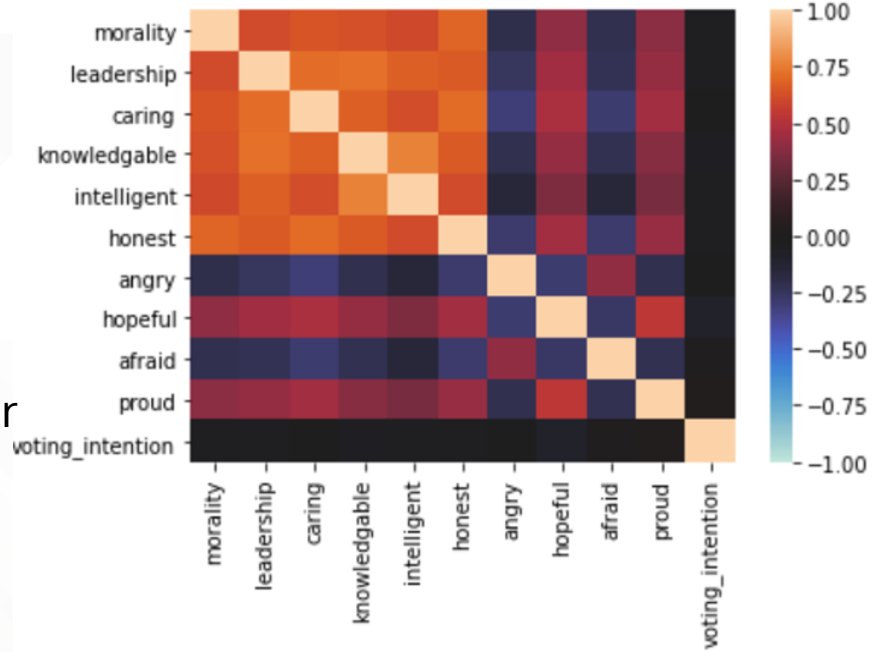
Link to the dataset: *https://electionstudies.org/*

Analysis

Correlation among variables

- Dependent variables capture the perception of a voter towards the presidential candidate

- Target variable is the intention of a voter to vote for a particular candidate



Logistic Regression

Accuracy on test
78.92%

Variable	Coefficient	P>|t|
Morality	-0.033	0.348
Leadership	-0.032	0.466
Caring	0.124	0.005
Knowledgeable	-0.060	0.271
Intelligent	-0.022	0.645
Honest	-0.033	0.439
Angry	-0.053	0.046
Hopeful	-0.203	<0.0001
Afraid	0.007	0.807
Proud	0.145	<0.0001

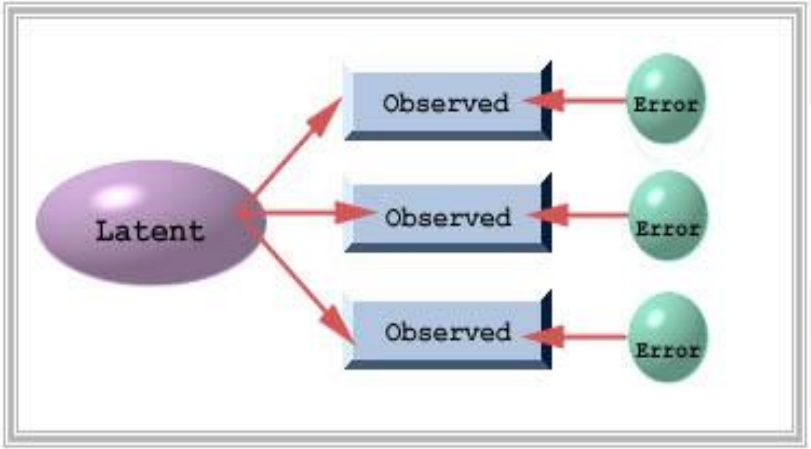
Next model

Terminology alert!!

Background on Latent Variables

- Random variable that is unmeasured, although not necessarily unmeasurable

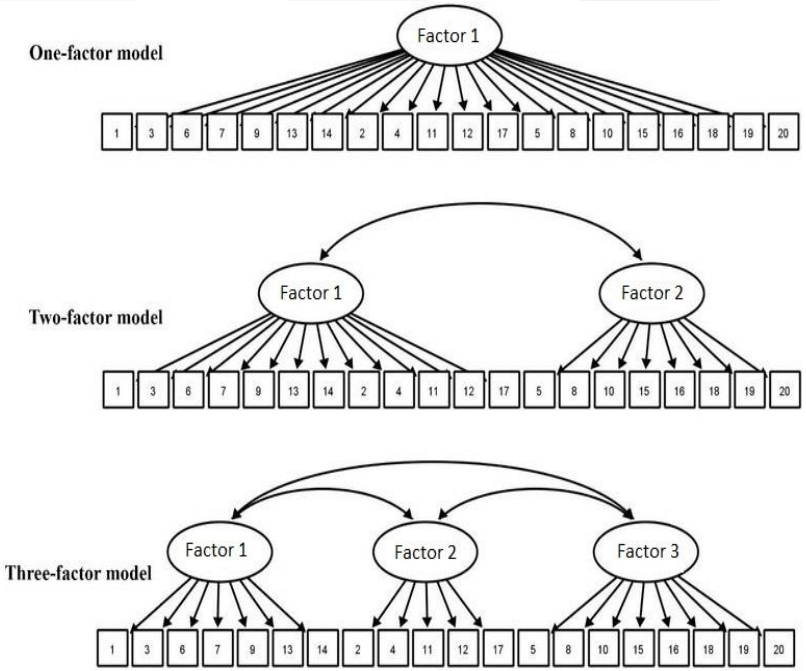
- Presence of latent variables, however, can be detected by their effects on variables that are observable



What is Factor Analysis?

- For a collection of observed variables there are a set of underlying variables called factors that can explain the interrelationships among those variables

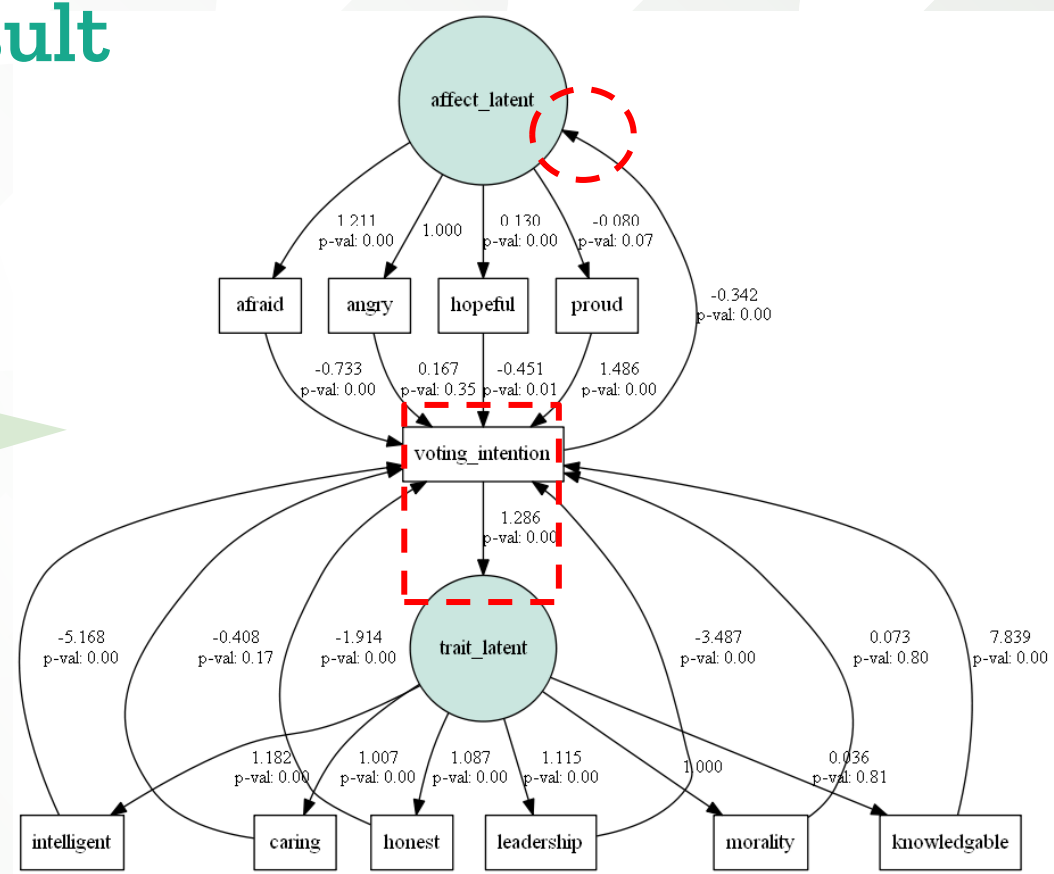
- Identification of those underlying latent structures and their importance



Our Findings

Factor Analysis Result

- The x variables are affecting y, however, there is some spillover
- The y is influencing the latent variables, which is driving a causal relationship from y to x



Observations

- The relationship from target to latent variable and further from the latent variable to x variables is statistically significant. This indicates a halo effect

- The logistic regression coefficient corresponding to “Knowledgeable” is negative with a high p value. With SEM, the coefficient is highly positive and statistically significant

- The coefficient corresponding to “Afraid” is nearly zero when derived through logistic regression. With SEM, the same is significantly negative

Conclusion

- Survey data can be rife with various sources of contamination
- Halo effect is one such source. Overall, preference toward a certain brand (candidate) can influence attribute specific perceptions
- Quick inferences about brand impressions impacting brand affinity can be erroneous

Analyst: Making causal inferences about brand attributes impact brand rating based on linear regression

Halo effect:

Thank You!

Appendix

EFA results

In [160]:
```
semopy.efa.explore_cfa_model(train[features + ['prevote_intpresst']]).split('\n')
```

executed in 608ms, finished 22:29:21 2021-11-10

Out[160]:
```
['eta1 =~ knowledgable + caring + leadership + intelligent + honest + morality',
 'eta2 =~ proud + hopeful',
 'eta3 =~ caring + honest + angry + afraid + hopeful',
 '']
```

The variables suggested by the EFA model align with our hypothesis

Other models evaluated