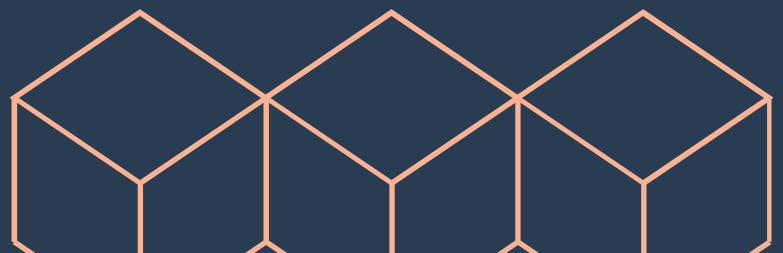
Game Mechanics

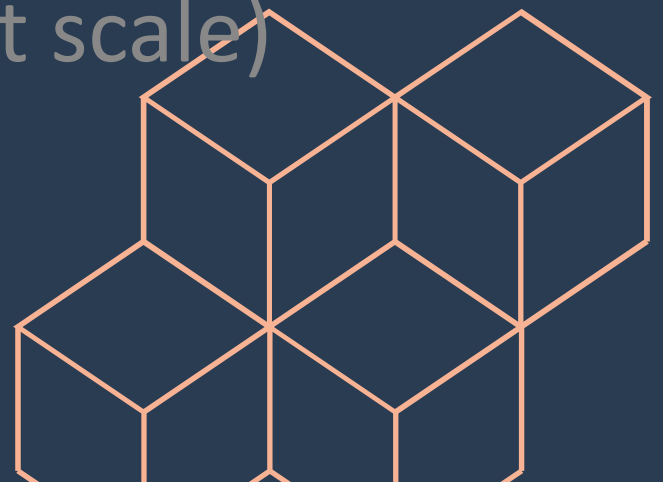
Can we determine what game mechanics
make a game popular based on game reviews?

Market for Board Games

- Total worldwide revenue in the board games segment is projected to reach $12 billion by 2023, increasing $2.56 billion from 2020 to 2025.
- The compound annual growth rate of the board game market is 7.30% and accelerating.

3,368,619 text reviews
137,364 sampled
mean rating: 6.88 (10 pt scale)



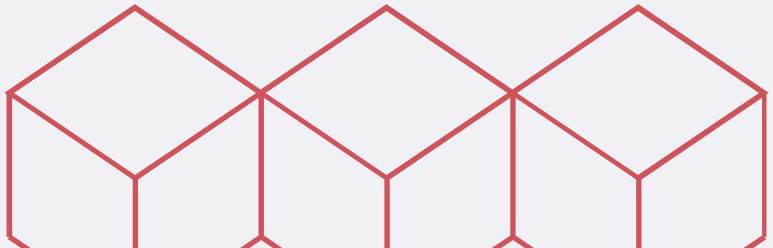


Do users discuss game mechanics in reviews?

Yes! Thanks to the Bigram and Trigram Collocation Finder:

drafting mechanic
auction mechanic
traitor mechanic
tile laying theme

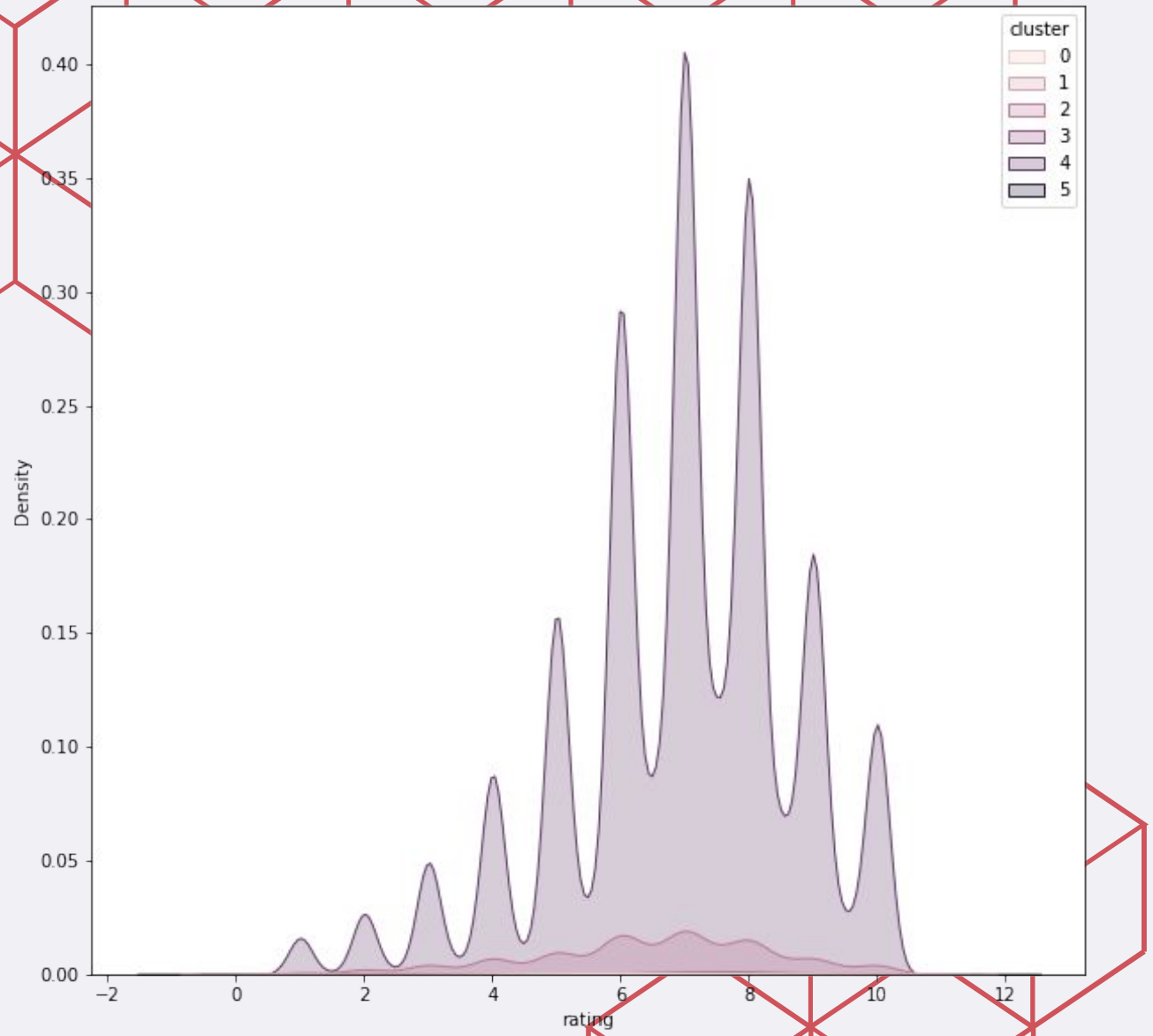
favorite worker placement
favorite area control
favorite easy learn
deck building theme



KMeans modeling

Not a good match for the hypothesis

No clear division of clusters by rating



NMF and LDA topic modeling

Game mechanics and dynamics

LDA edged out NMF slightly for most useful and coherent topics

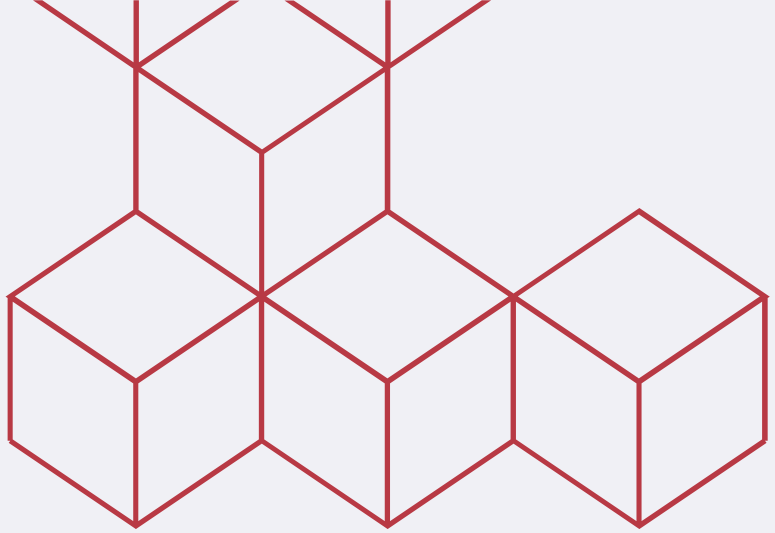
deck building
push your luck
area control
hand management

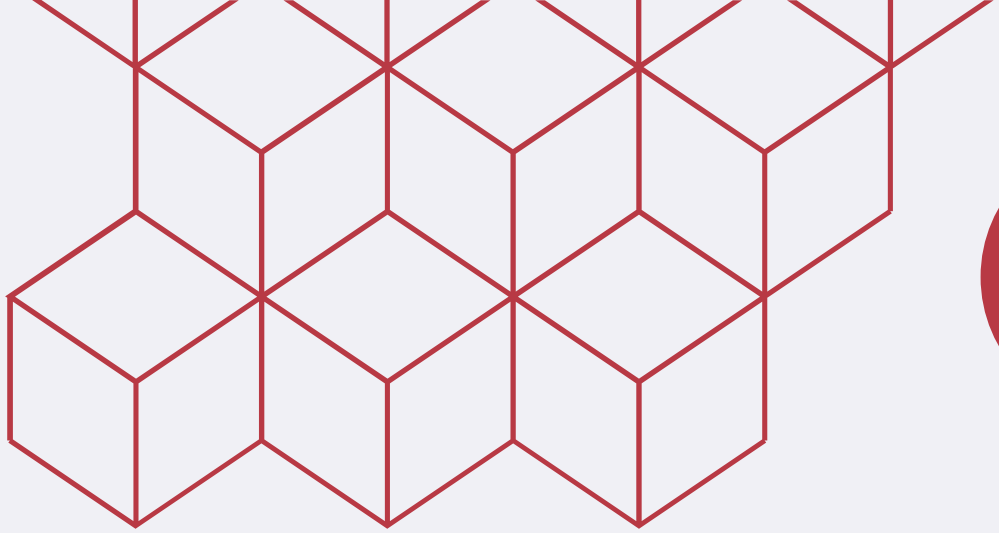
trick taking
worker placement
set collection

player interaction
easy learn / easy teach
right group
player count
family game

Future analysis

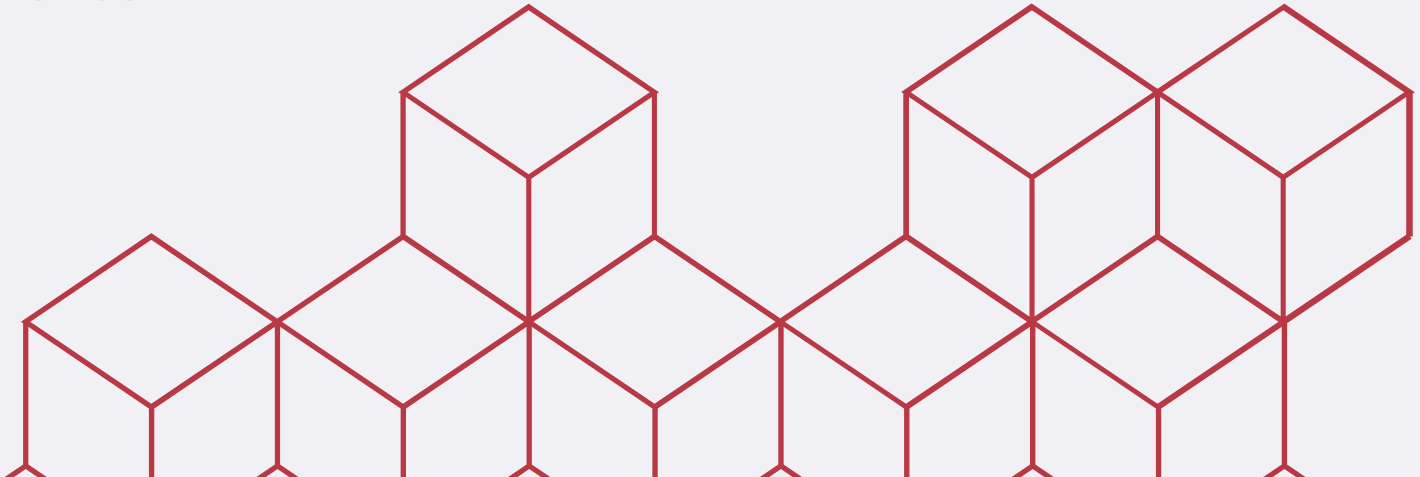
- Sentiment analysis before KMeans
  - Convert all contractions
  - Further refine stop words
- Change approach
  - Query boardgamegeek.com for mechanics list
  - Changes the problem from NLP to numeric correlation





Thank You!

Many thanks to my mentor, Julian Jenkins III, for his endless patience.



Sources

- Report data
  - boardgamegeek.com review data on Kaggle, collected by Jesse Van Elteren https://www.kaggle.com/datasets/jvanelteren/boardgamegeek-reviews
- Market data
  - https://www.prnewswire.com/news-releases/board-games-market---global-outlook-and-forecast-2018-2023-300763553.html
  - https://www.technavio.com/report/board-games-market-industry-analysis

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