



Online Customer Review Analytics

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Business Objectives

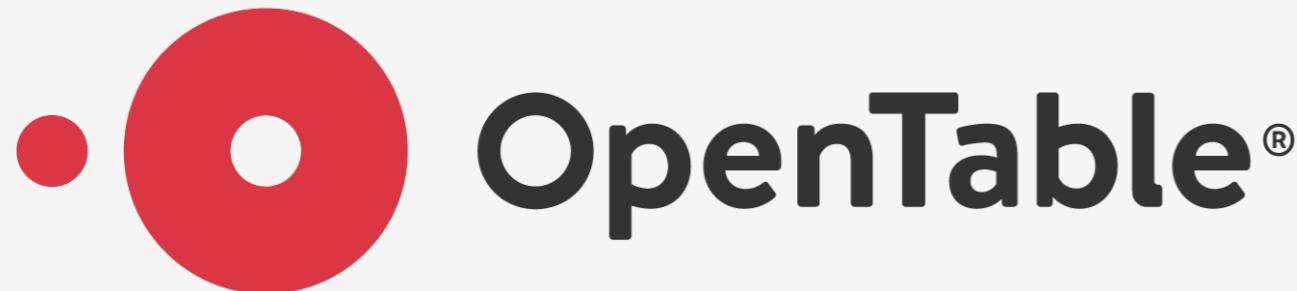
- Analyze RMT's online reviews and ratings
- Understand how ratings have changed over time
- Mine customer review data for actionable insights
- Identify opportunities for RMT

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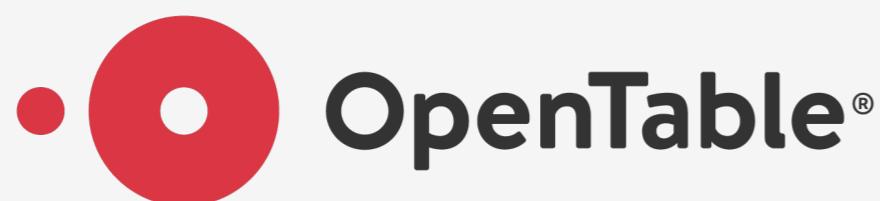
Data Sources



tripadvisor[®]



Data Sources



tripadvisor[®]



- **677 online reviews**
- **Review comments**
- **Numerical ratings**
- **Review dates**

Techniques & Tools

Analytics Techniques

- Time Series Analysis
- Word Cloud Analysis
- Association Analysis
- Sentiment Analysis

Analytics Tools

- Statistical Programming Language:
R
- Package “rvest”
- Package “dplyr”
- Package “tidyverse”
- Package “ggplot2”
- Package “tm”
- Package “wordcloud”
- Package “syuzhet”
- SelectorGadget tool

Data Science Process

1. Data acquisition

SelectorGadget, rvest

2. Data cleaning

dplyr, tidyr, grepl()

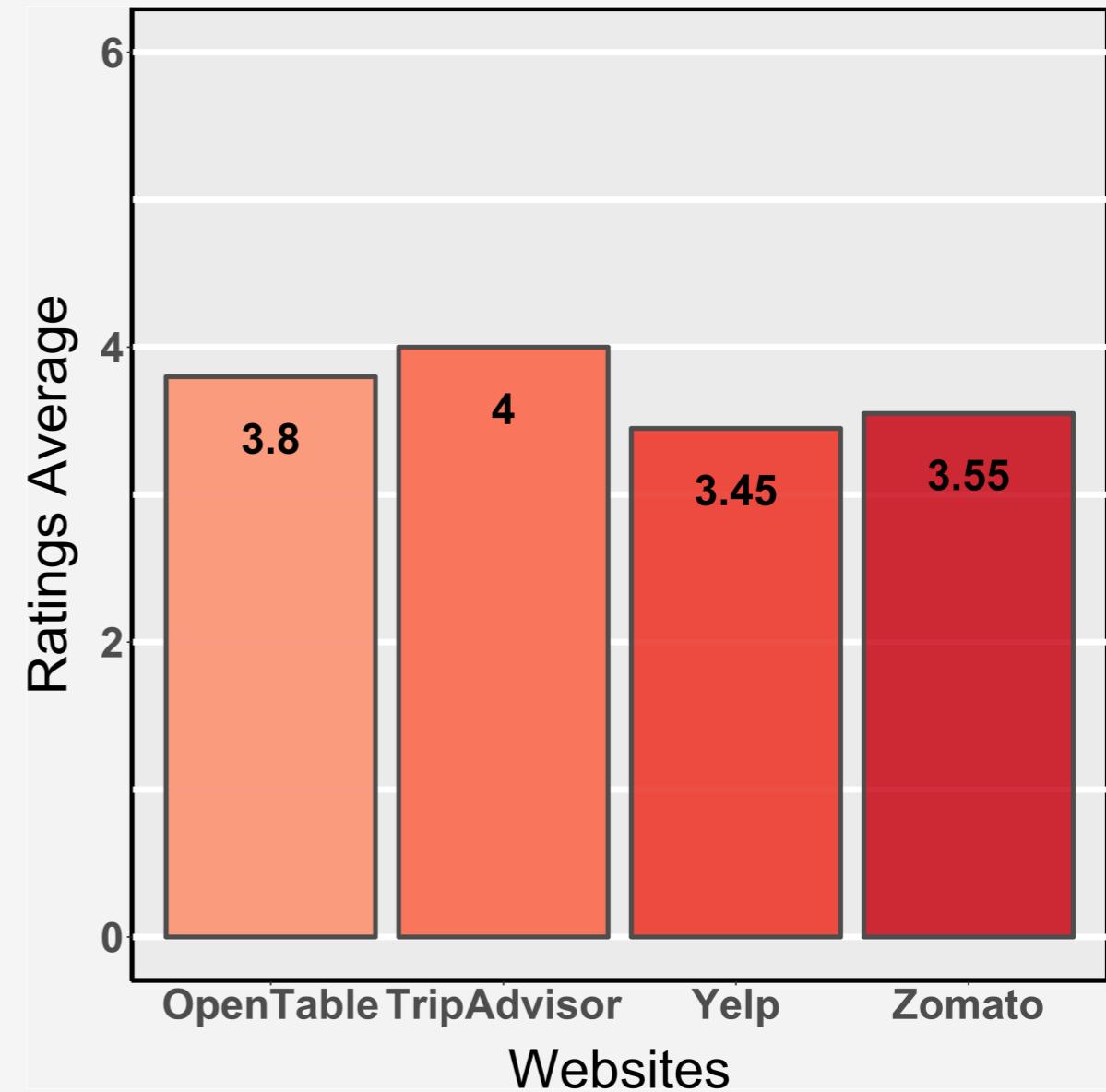
3. Data analysis

ggplot2, tm, wordcloud, syuhzet

5-star rating scales

Cumulative average: 3.79

Numerical Ratings

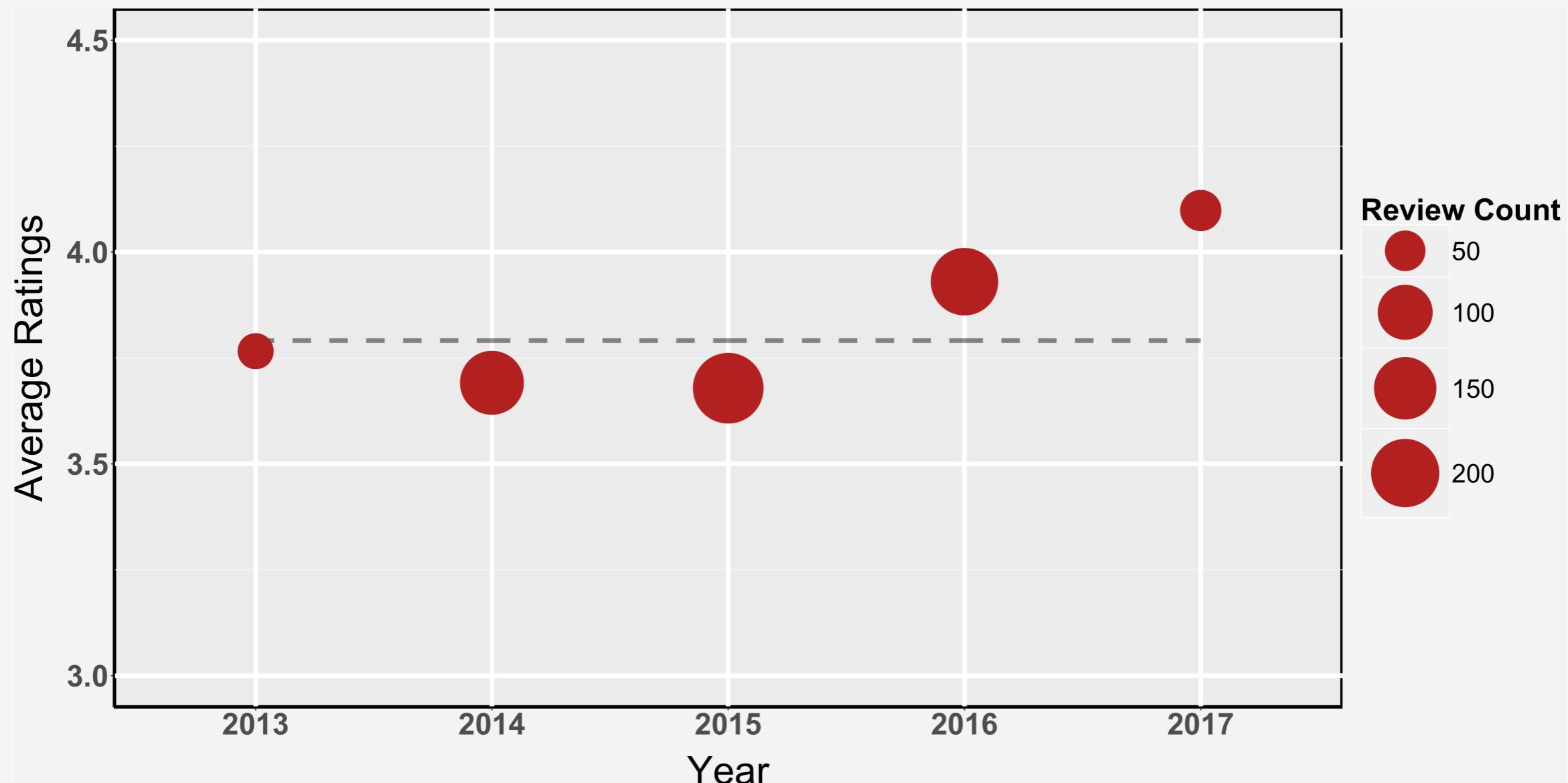


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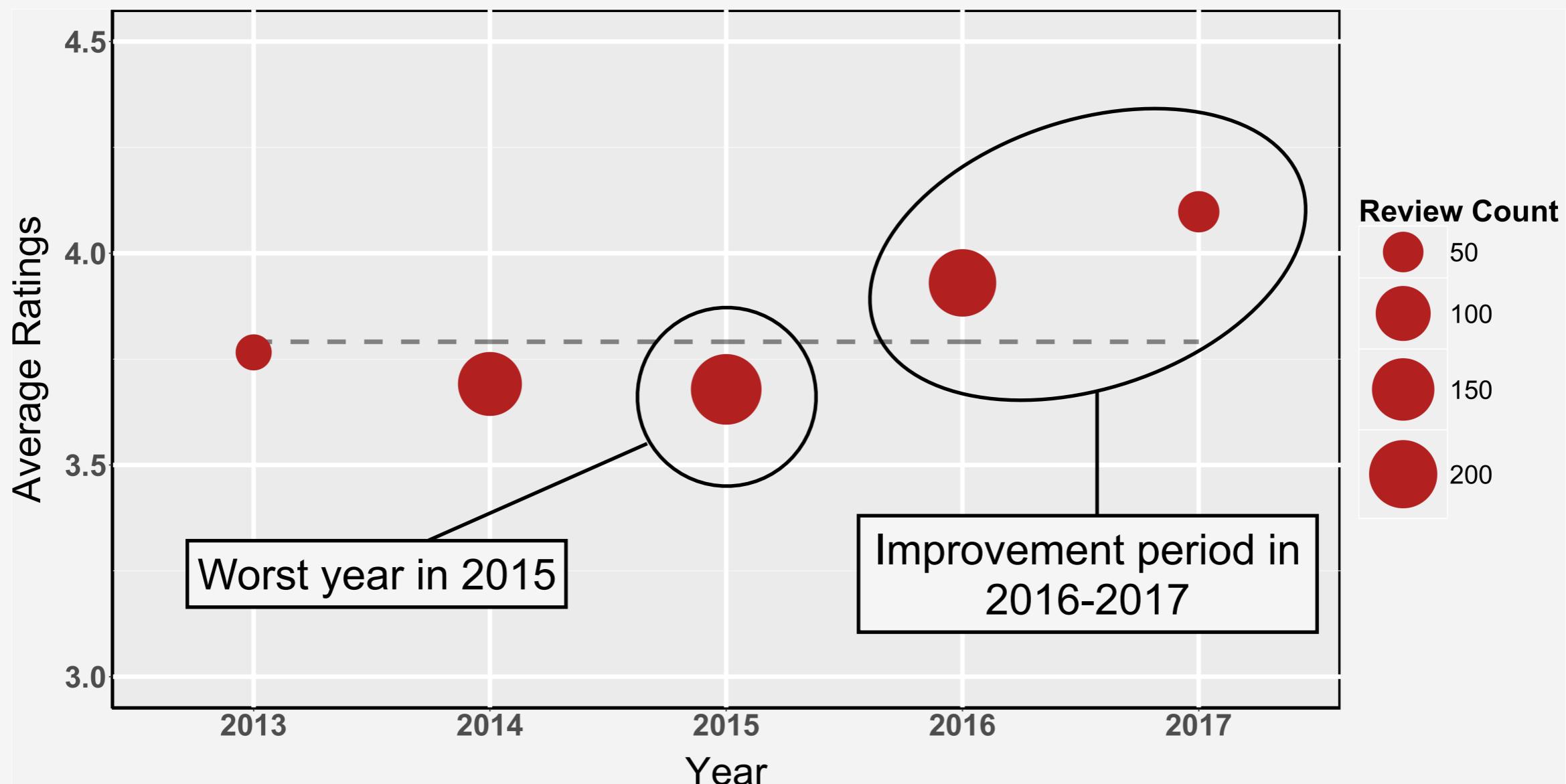
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Ratings - Time Series Analysis



Ratings - Time Series Analysis

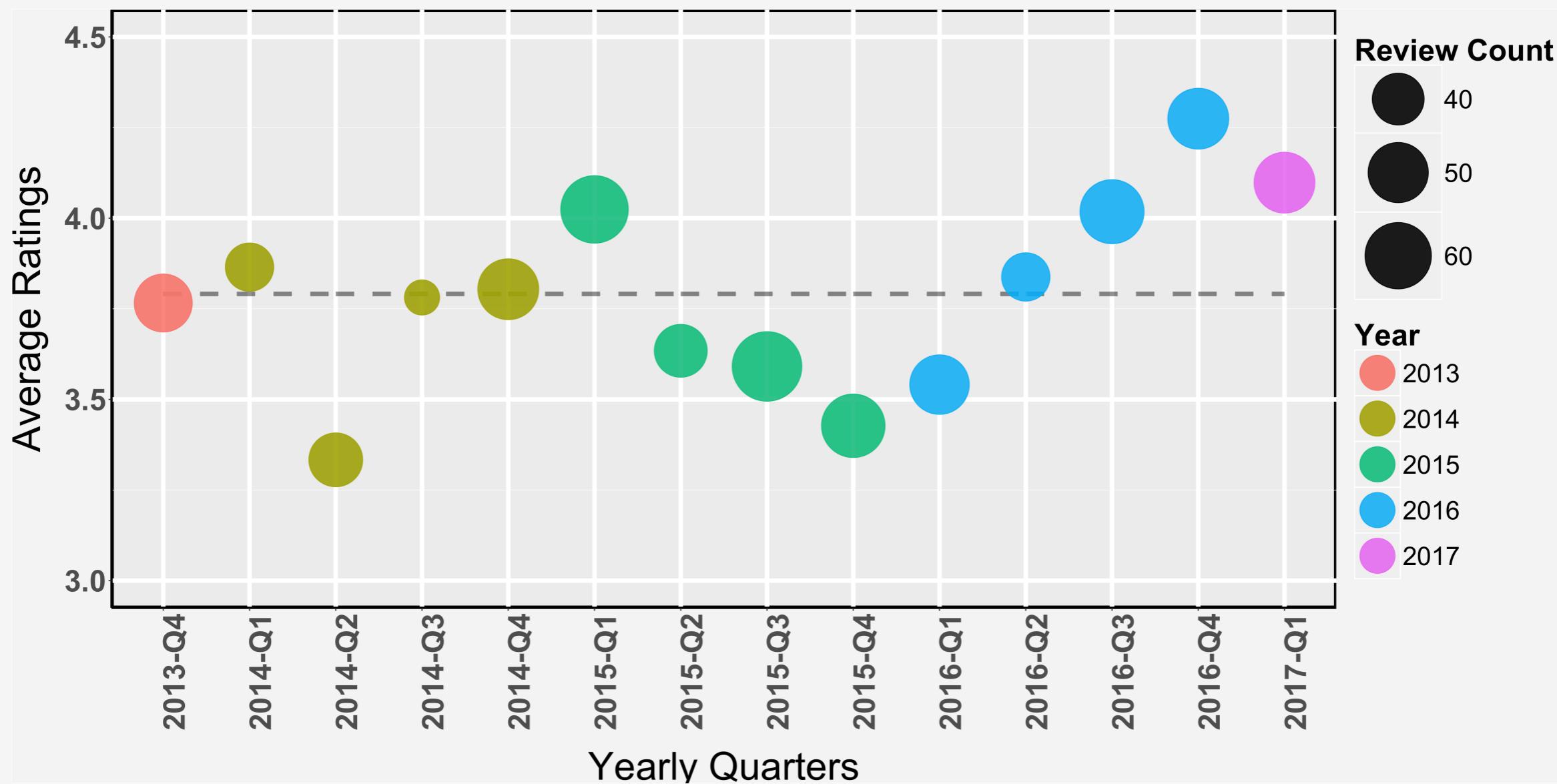


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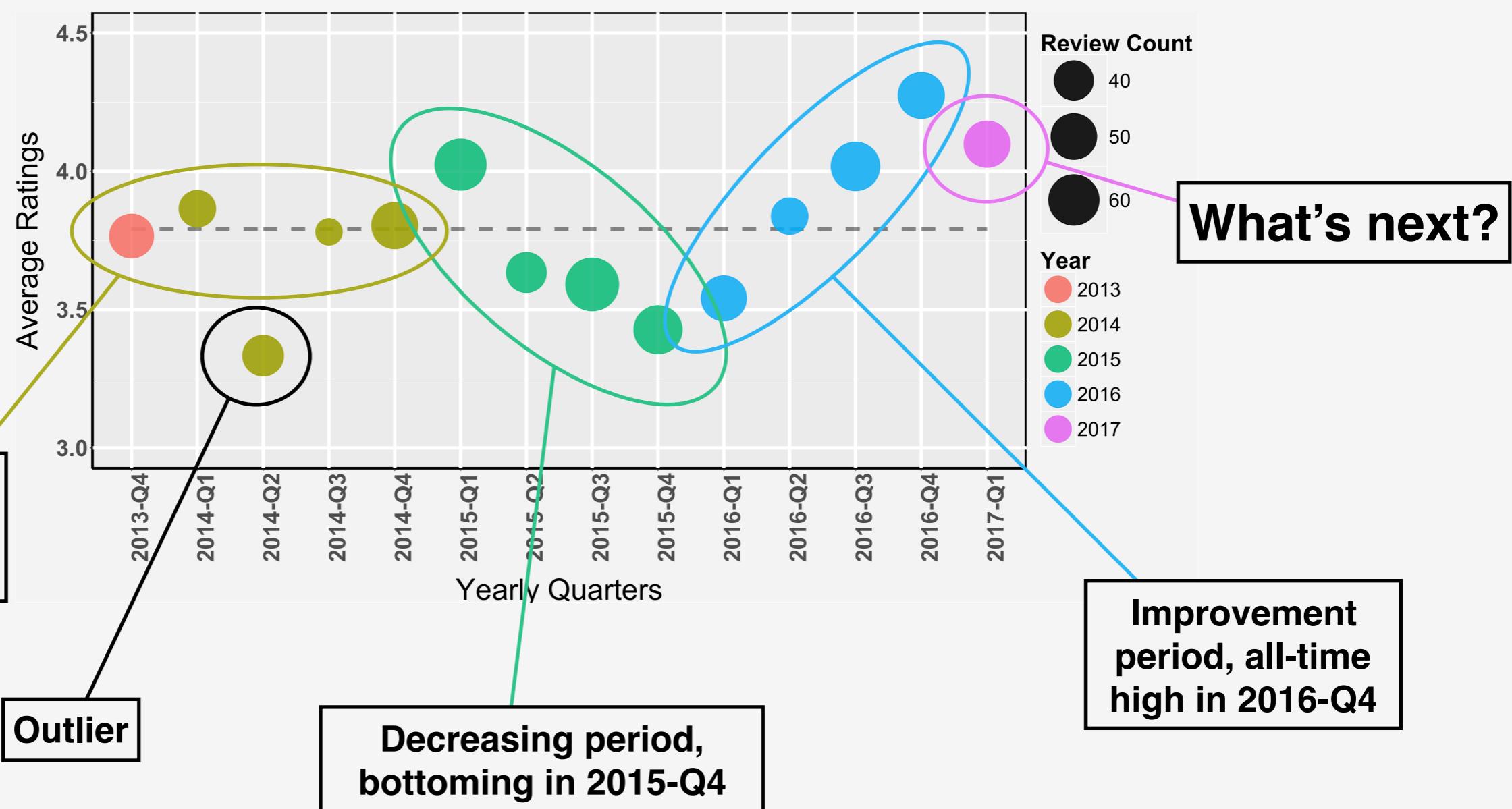
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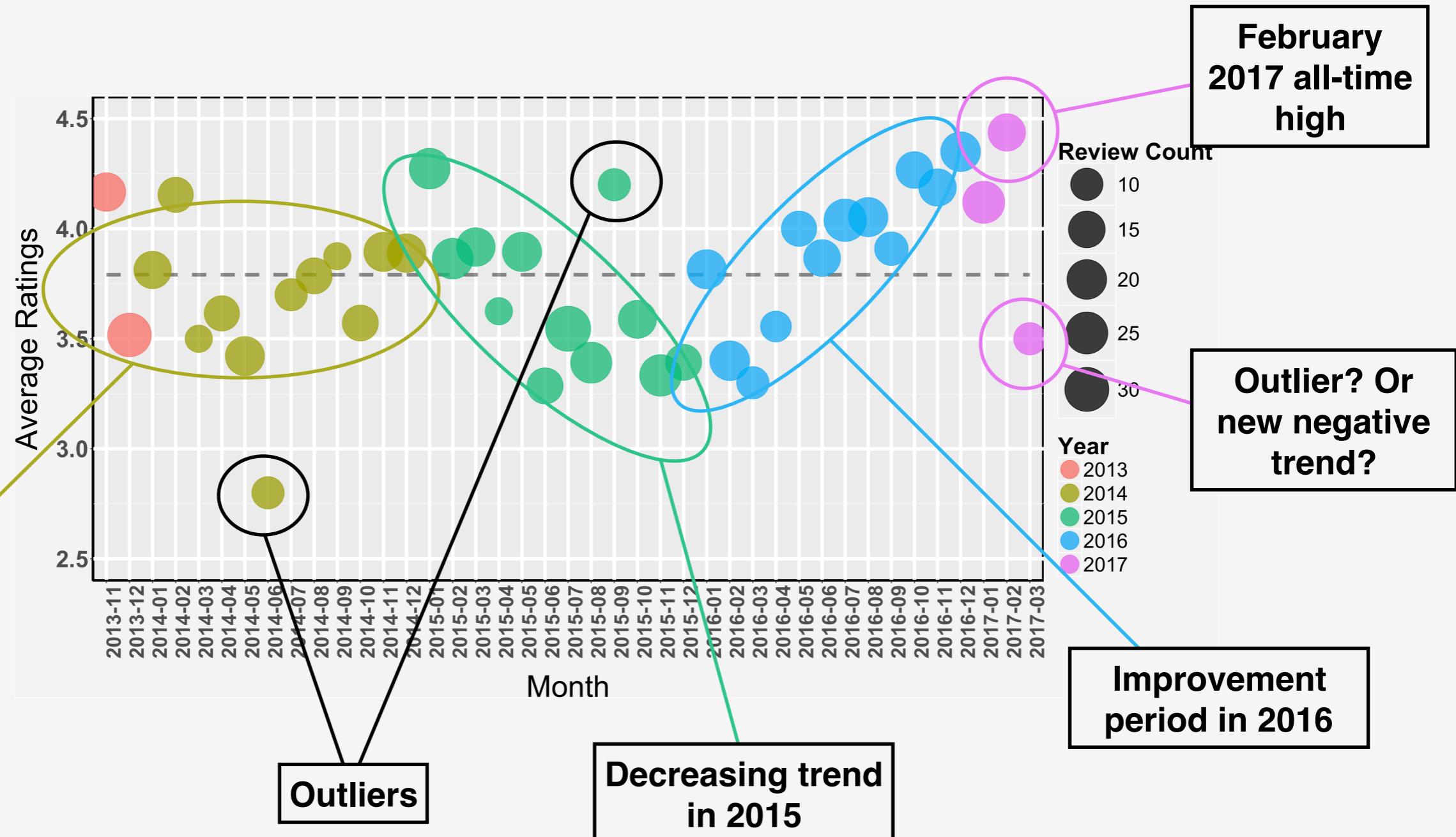
Quarterly Ratings Analysis



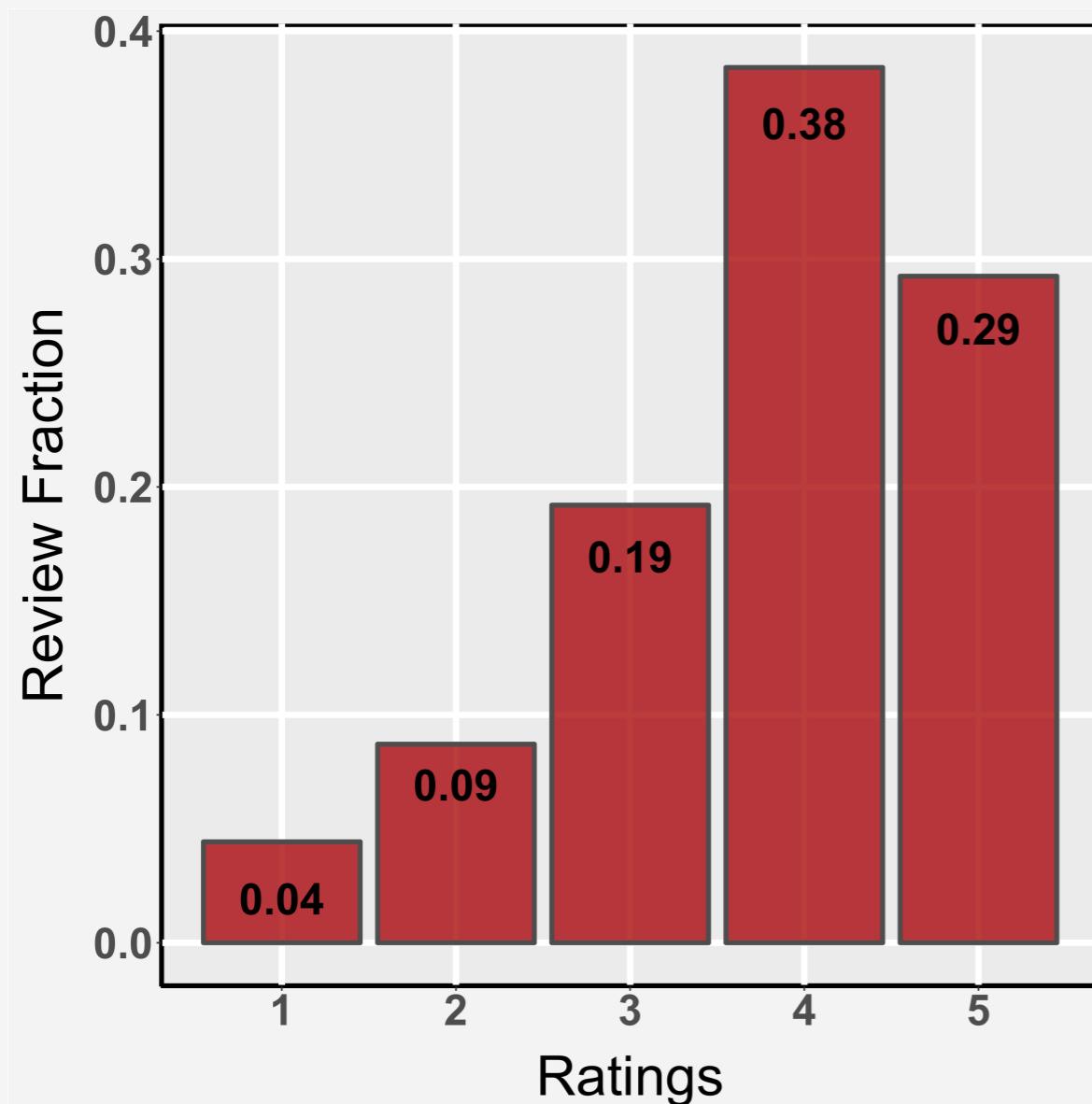
Quarterly Ratings Analysis



Monthly Ratings Analysis



Cumulative Ratings Histogram



**67% of reviews rated
4 or 5 stars**

**33% of reviews rated
3 stars or less**

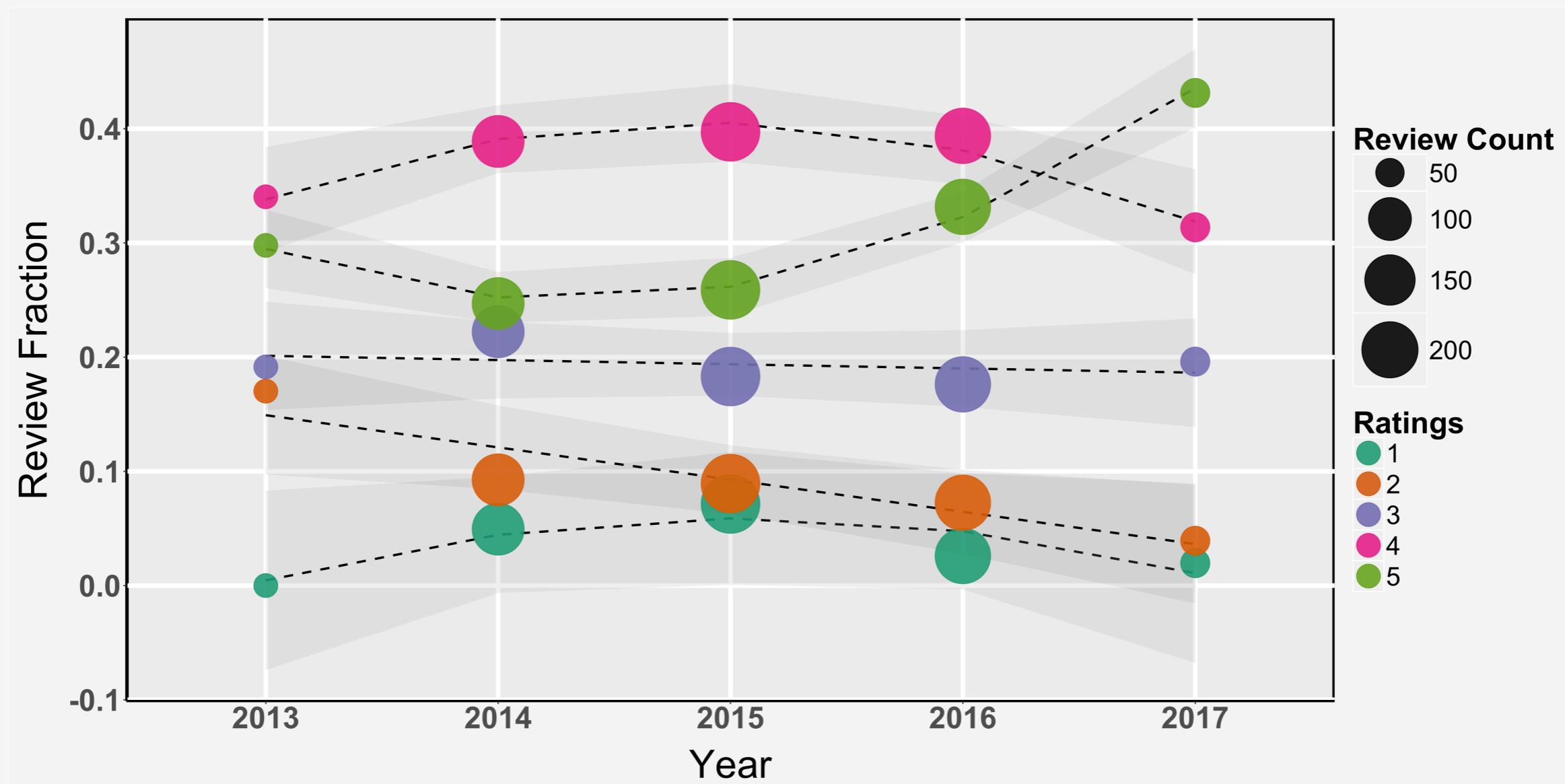
**How has this
changed over time?**

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Yearly Rating Fractions



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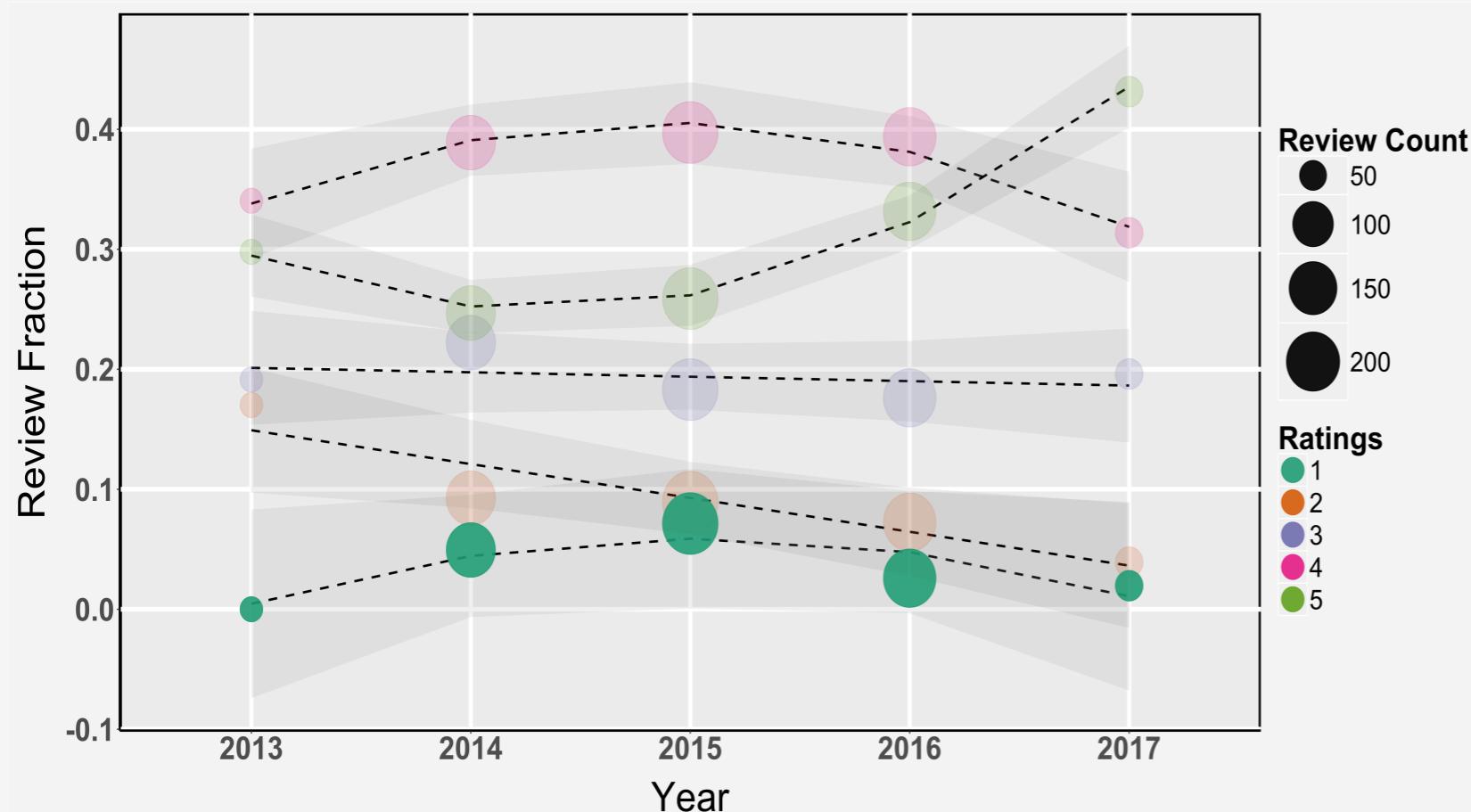
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Yearly Rating Fractions: 1 star



Peaked in 2015, declining since



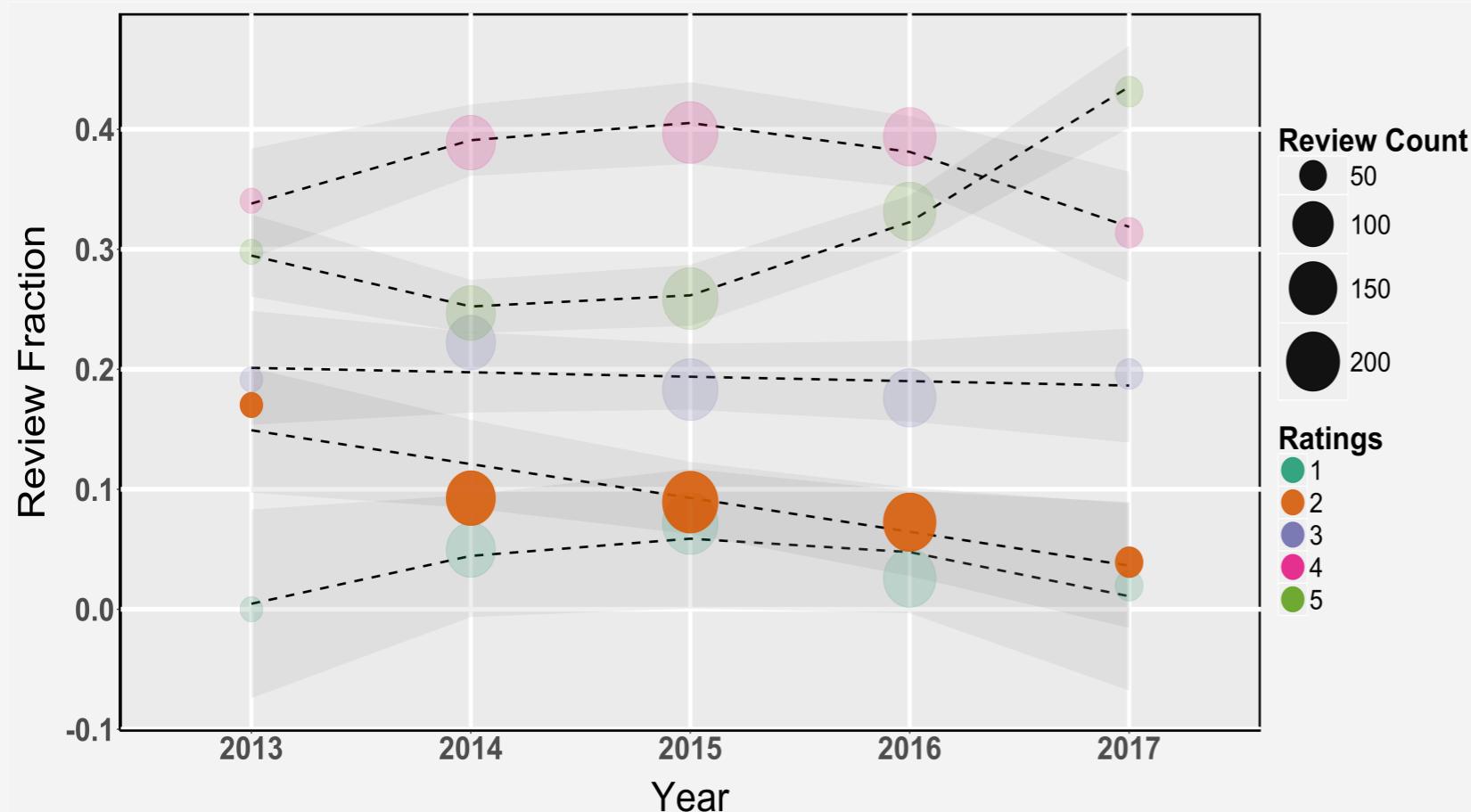
Yearly Rating Fractions: 2 stars



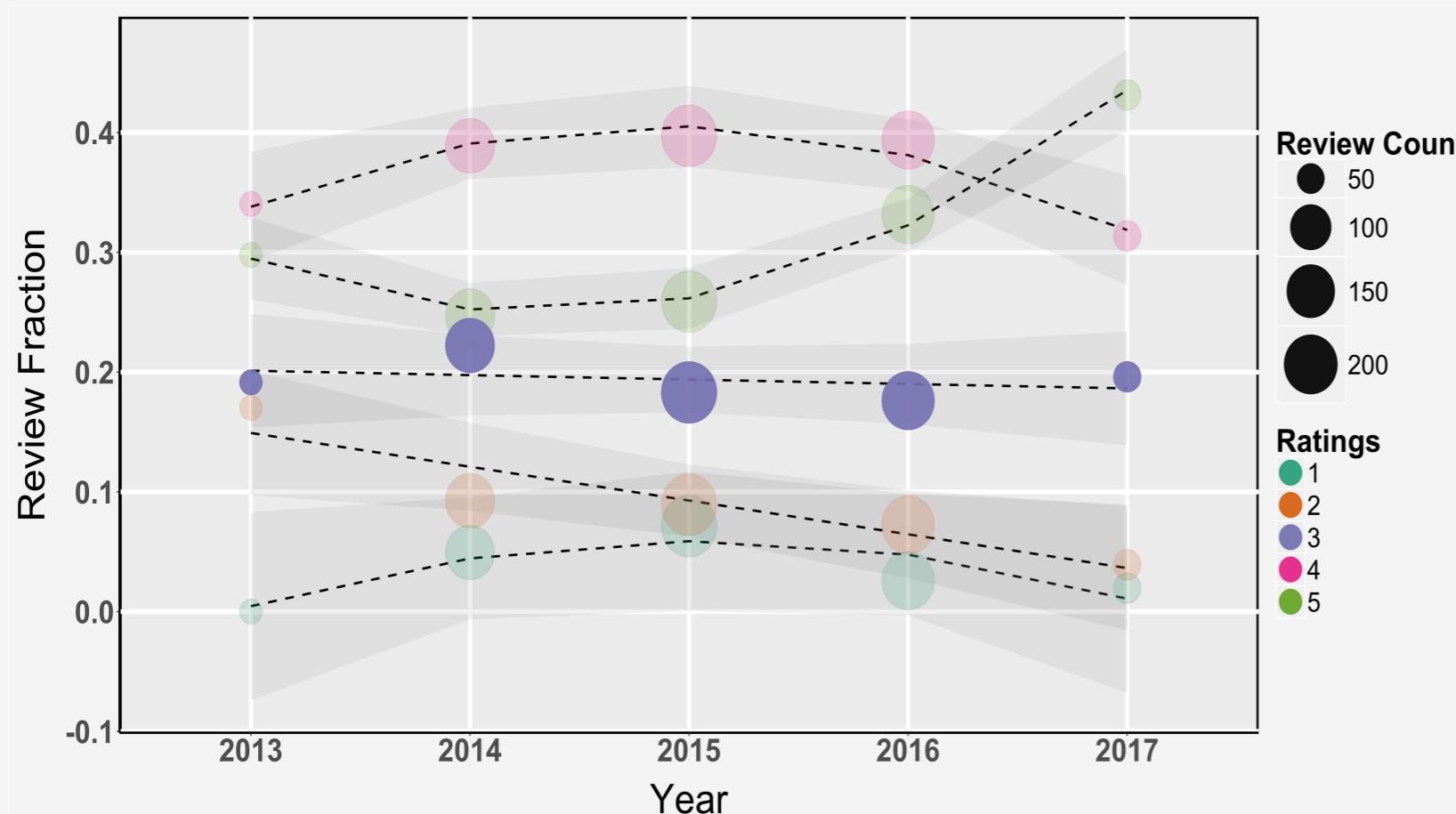
Peaked in 2015, declining since



Declining since 2013



Yearly Rating Fractions: 3 stars



Peaked in 2015, declining since

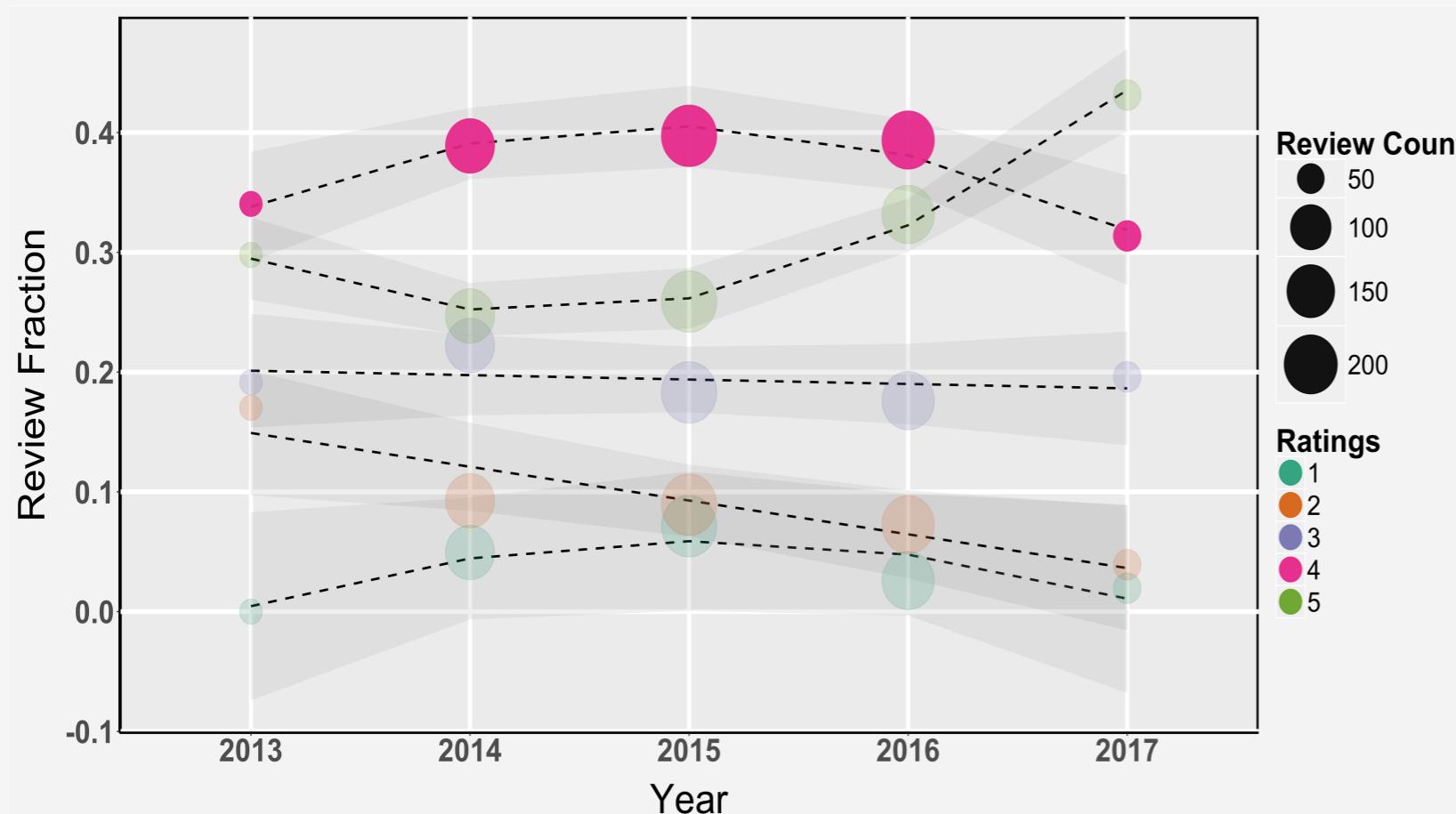


Declining since 2013



Steady around 20%

Yearly Rating Fractions: 4 stars



Peaked in 2015, declining since



Declining since 2013

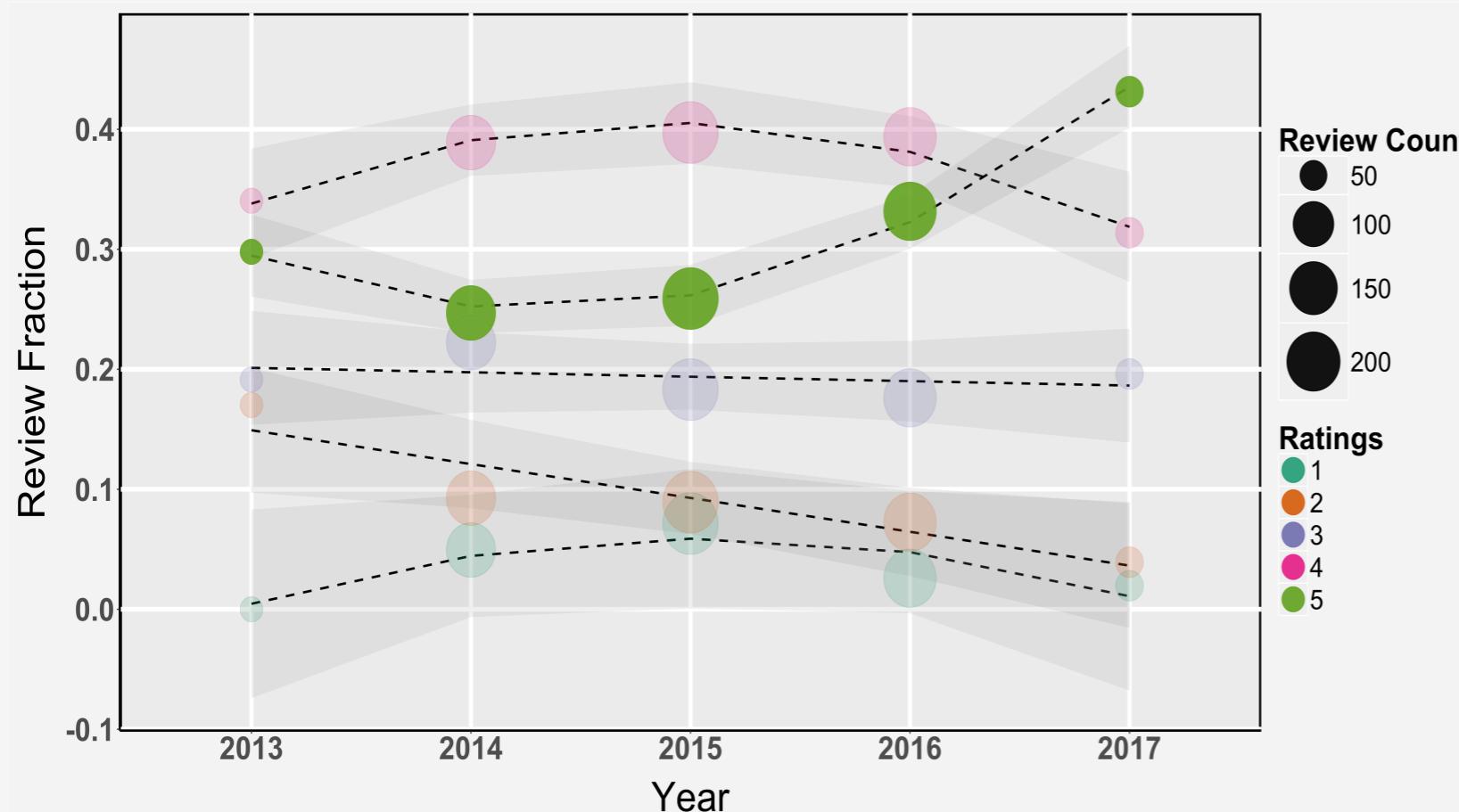


Steady around 20%



~ 40% in 2014-2016,
declined in 2017

Yearly Rating Fractions: 5 stars



Peaked in 2015, declining since



Declining since 2013



Steady around 20%



~ 40% in 2014-2016,
declined in 2017



Increasing since 2015.
Highest in 2017 at ~ 40%

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Customer Reviews

The screenshot shows a Yelp review page for Reds Midtown Tavern. At the top left is the restaurant's logo. The main content area displays two reviews. The first review is from 'Andy S.' (4 stars, 1/24/2017), who describes the atmosphere as 'Trendy' and the noise level as 'Average'. He mentions being nervous because it's intimate and the music is loud. The food was above expectations, with a salmon dish and fingerling potatoes. The second review is from 'Thomas H.' (4 stars, 1/31/2017), who enjoyed a winterlicious lunch with Tuna Tostadas and Steak Bibimbap. The page also includes a sidebar with business details like Ambience, Noise Level, and Music, as well as sections for 'From the business' and 'People also viewed'.

Review comments can
be used to explain
ratings trends

Focus on text analysis
of full set of reviews

Word Cloud Analysis

Mention of service and staff is qualified with words like **attentive**, **friendly**, and **nice**

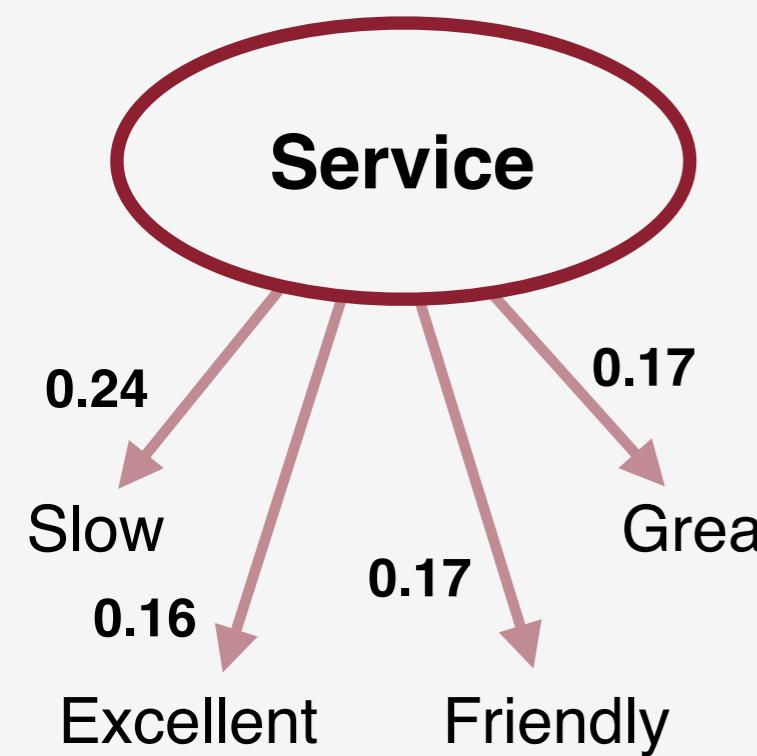
Loudness is a common complaint

Words like good, great, delicious, and excellent indicate **strong positive sentiment** overall

Food and **service** are the **most important aspects** of a customer's experience



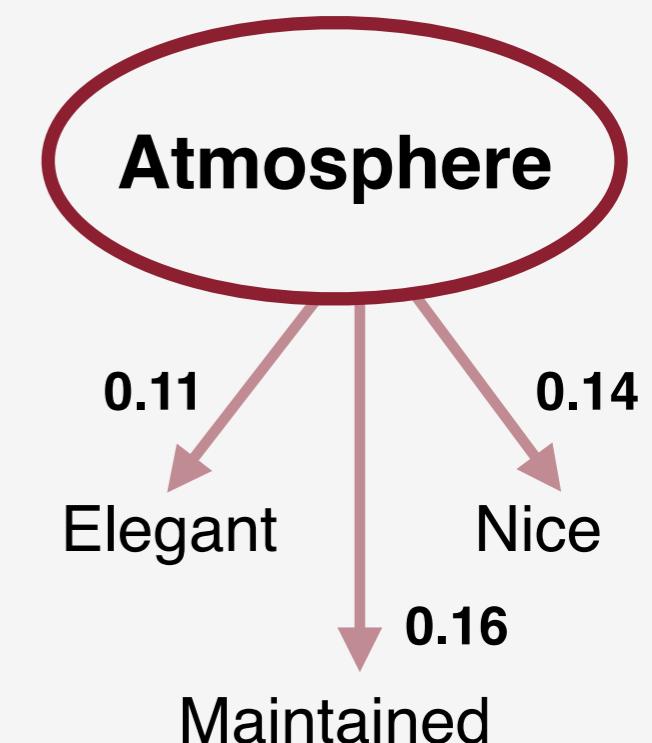
Word Association Analysis



Service is of **high quality**, but also **slow**



Food quality is fairly high, but could be improved



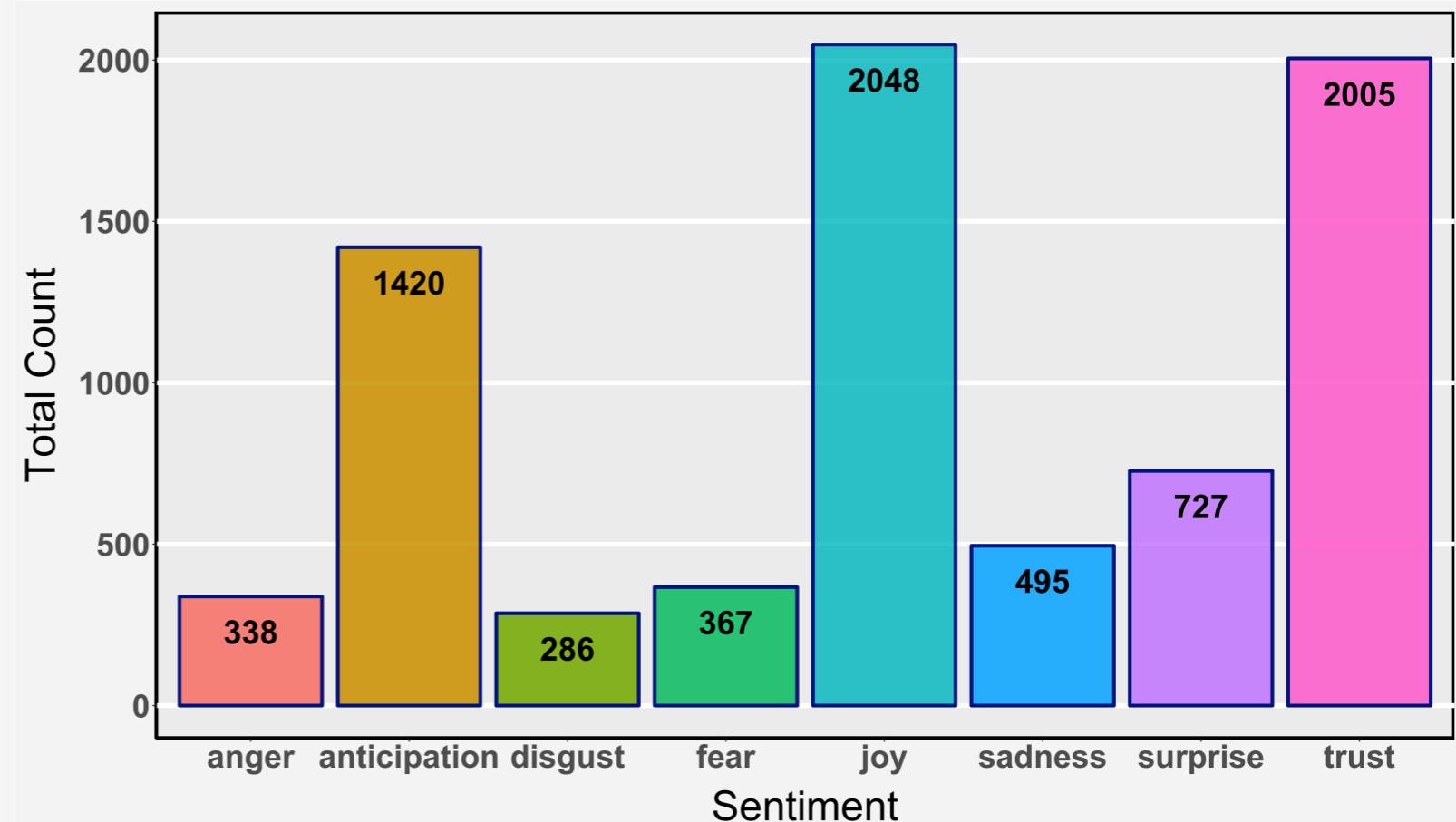
Atmosphere and decor are a **pleasant aspect** for guests

Sentiment Analysis

Most commonly expressed sentiment is joy

Trust indicates **strong brand value** and credibility

Anticipation might suggest guests expect **more value for money**



Positive/Negative Reviews

Food and service are pivotal aspects to a customer's experience



Positive Reviews

Positive reviews contain **stronger positive words** like great, excellent, amazing



Negative Reviews

Insights Summary

Ratings Analysis

- Overall customer experience at RMT is positive, with **67% of reviewers giving 4 or 5 stars**
- In 2017, 5 stars is the most common rating class
- Ratings have improved since 2016, but **March 2017** has resulted in a **large decline**

Text Analysis

- Food and service are the main aspects that determine the quality of ratings/reviews
- Service is reviewed favourably in terms of interactions, but also commonly described as slow
- Guests enjoy atmosphere at RMT but comment that music is too loud

Insights Summary

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Text Analysis

- **Food and service** are the **main aspects** that determine the quality of ratings/reviews
- **Service is reviewed favourably** in terms of interactions, but also commonly described as **slow**
- Guests **enjoy atmosphere** at RMT but comment that music is **too loud**

Next Steps

- Perform text analysis on **specific periods of interest** to mine for deeper insights
- Perform a **comparative analysis** on RMT's competitors like REDS Wine Tavern or Scaddabush
- Identify **customer segmentation** for RMT to tailor customer experience and marketing campaigns

References

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- <https://www.zomato.com/toronto>