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# iPhone Product Review

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# Agenda

Project Objective

Data Schema

Limitations

Product Analytics

Business Insights



# Project Objective

- Analyze customer review data across multiple iPhone Models to understand whether Apple considers customer preferences when making decisions
- Extract what Apple customers value most in the iPhone



# Data Schema

- iPhone 8, iPhone X, iPhone 11, iPhone 11 Pro Max review data from 2017 September to 2020 February
- Up to 3,000 review data per iPhone model, and 10,748 data in total
- Dataset includes: index number, review headings, review texts, rating, time, type

# Limitations

- All reviews were scrapped from Best Buy, but most people purchase iPhones from Apple official website or physical stores
- Imbalanced data: nearly 80% of reviews are positive  
(Apple removed product reviews late last year)

# Product Analytics

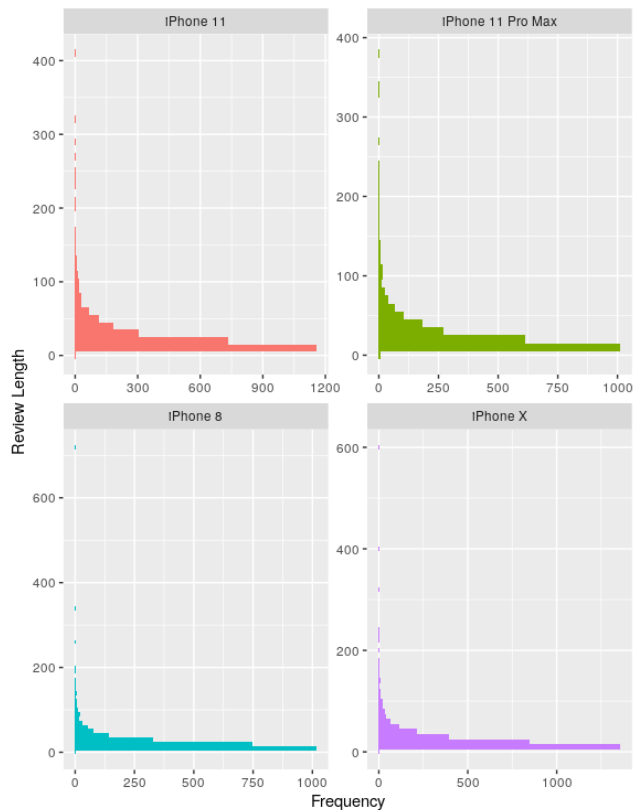


# Key features of each iPhone model

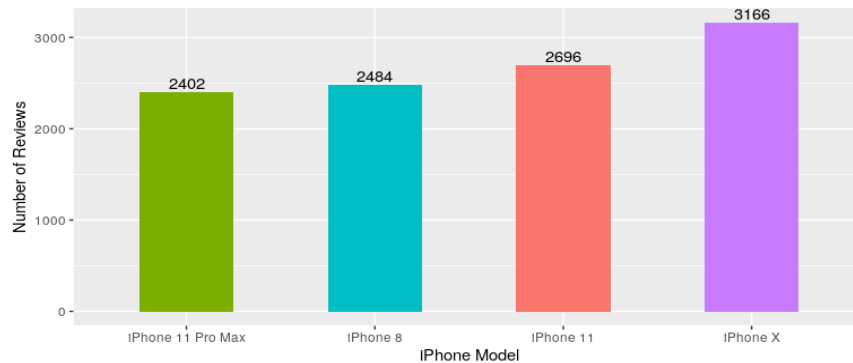
Model	iPhone 8	iPhone X	iPhone 11	iPhone 11 Pro Max
Display	4.7 Retina HD	5.8" Super Retina HD	6.1" Liquid Retina HD	6.5" Super Retina XDR
Screen	4.7" Widescreen LCD	5.8" All-screen OLED	6.1" All-screen LCD	6.5" All-screen OLED
Processor	A11 processor	A11 Bionic processor	A13 Bionic processor	A13 Bionic processor
Camera	Single 12MP Wide	Dual 12MP Wide	Dual 12MP Ultra Wide	Triple 12MP Ultra Wide
Battery	Same as iPhone 7	2 hrs longer than iPhone 7	2.5 hrs longer than iPhone 7	6.5 hrs longer than iPhone 7
Secure Authentication	Touch ID	Facial Recognition	Facial Recognition	Quicker Facial Recognition
Home Button	Home Button	No Home Button	No Home Button	No Home Button
Water Resistance	1m	1m	2m	4m
Color	3 colors	2 colors	6 colors	4 colors

# Data Exploration

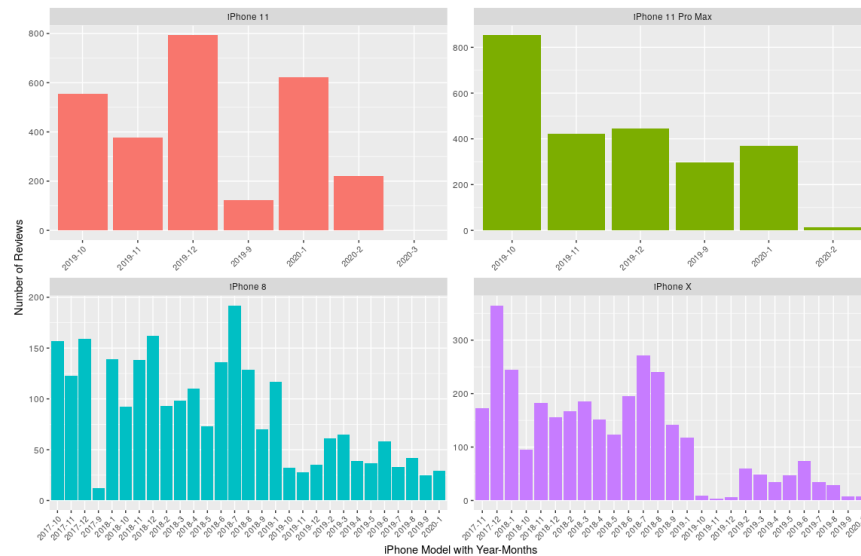
Review Lengths across iPhone Models



Number of Reviews across iPhone Models



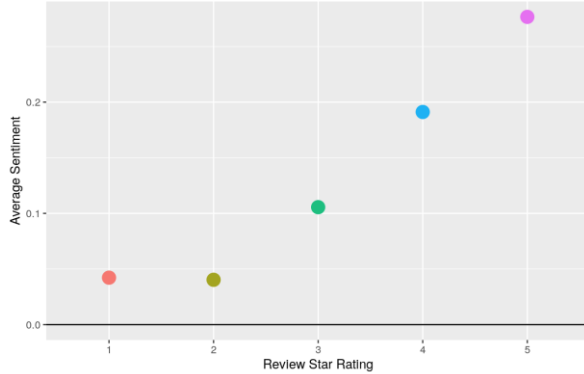
Number of Reviews across iPhone Models over Time



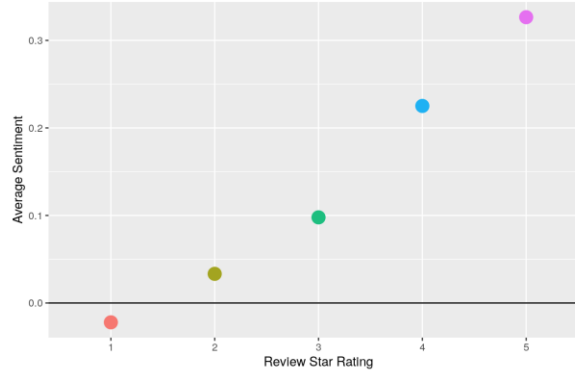


# Sentiment Analysis

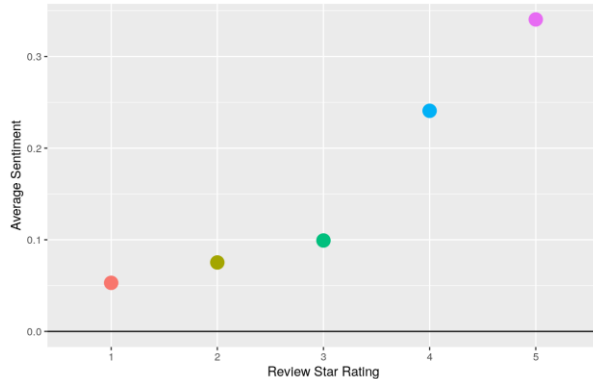
Average Sentiment by Review Rating  
2484 Best Buy reviews of the iPhone 8



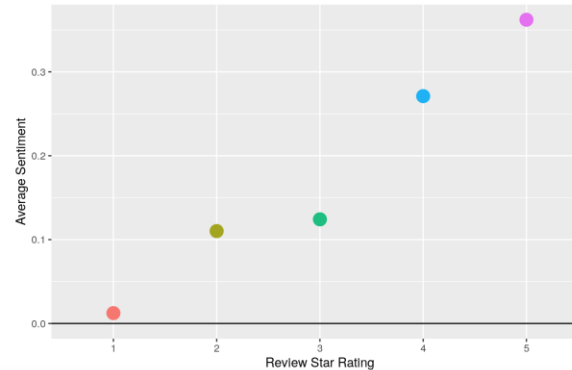
Average Sentiment by Review Rating  
3166 Best Buy reviews of the iPhone X



Average Sentiment by Review Rating  
2696 Best Buy reviews of the iPhone 11



Average Sentiment by Review Rating  
2402 Best Buy reviews of the iPhone 11 Pro Max

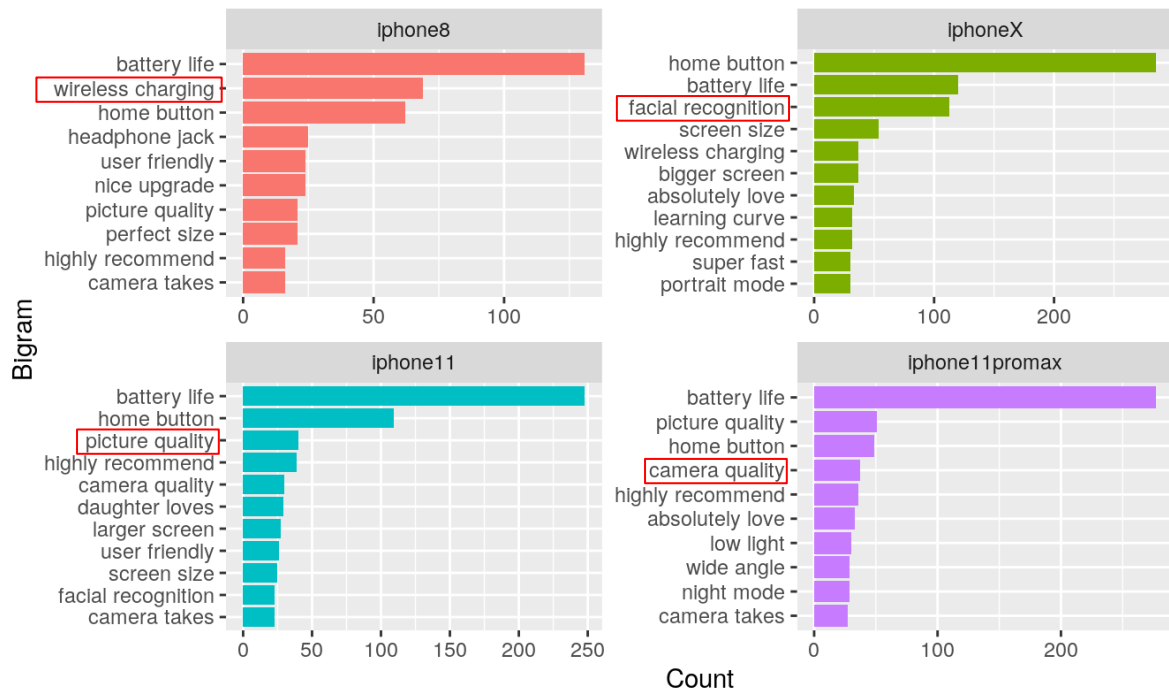


As review rating increases, the average sentiment also increases.

# Summarizing Text

## Top Title Bigrams in Different Phone Types

Stop-words removed



Note: The words "iPhone", "Apple", "Phone", "8", "X", "11", "Pro", "Max", "Color", "Midnight Green" have been removed.

## Top Common Bigrams

- Battery Life
- Home Button

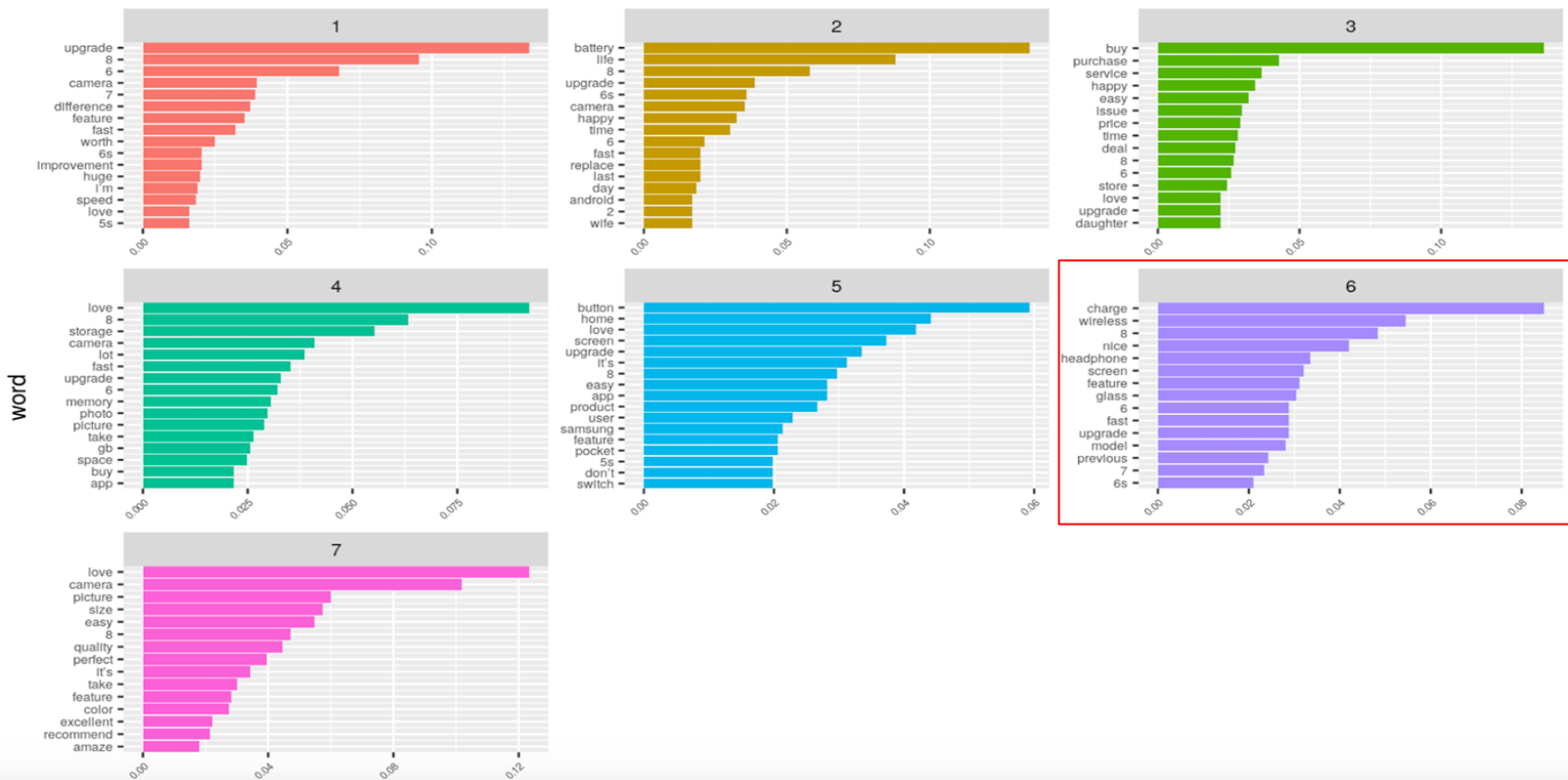
## Top Different Bigrams

- Wireless charging
- Facial recognition
- Picture quality
- Camera quality

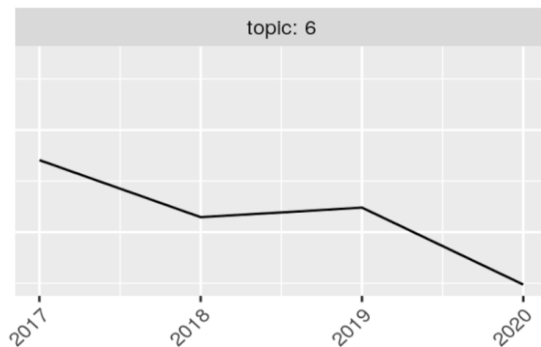
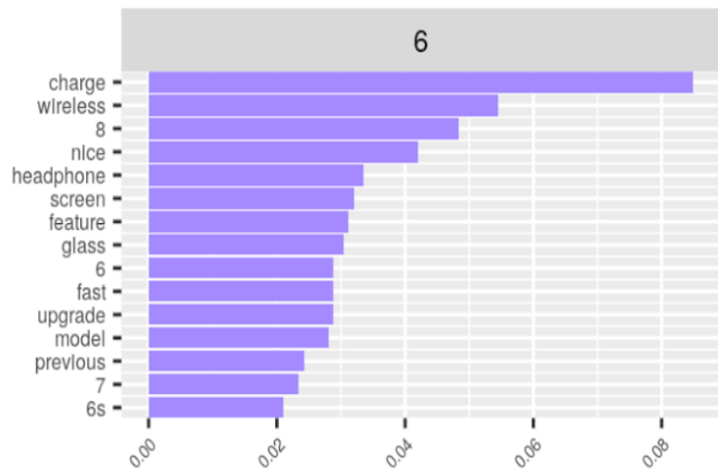
# iPhone 8 - Topic Model

## Top Words by Topic

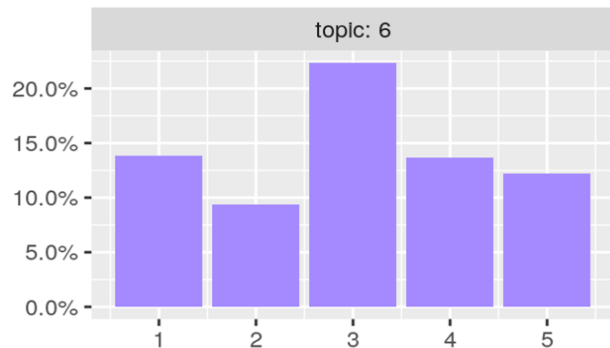
7 Topic LDA of 1,114 iPhone 8 Reviews



# iPhone 8 – Wireless Charging



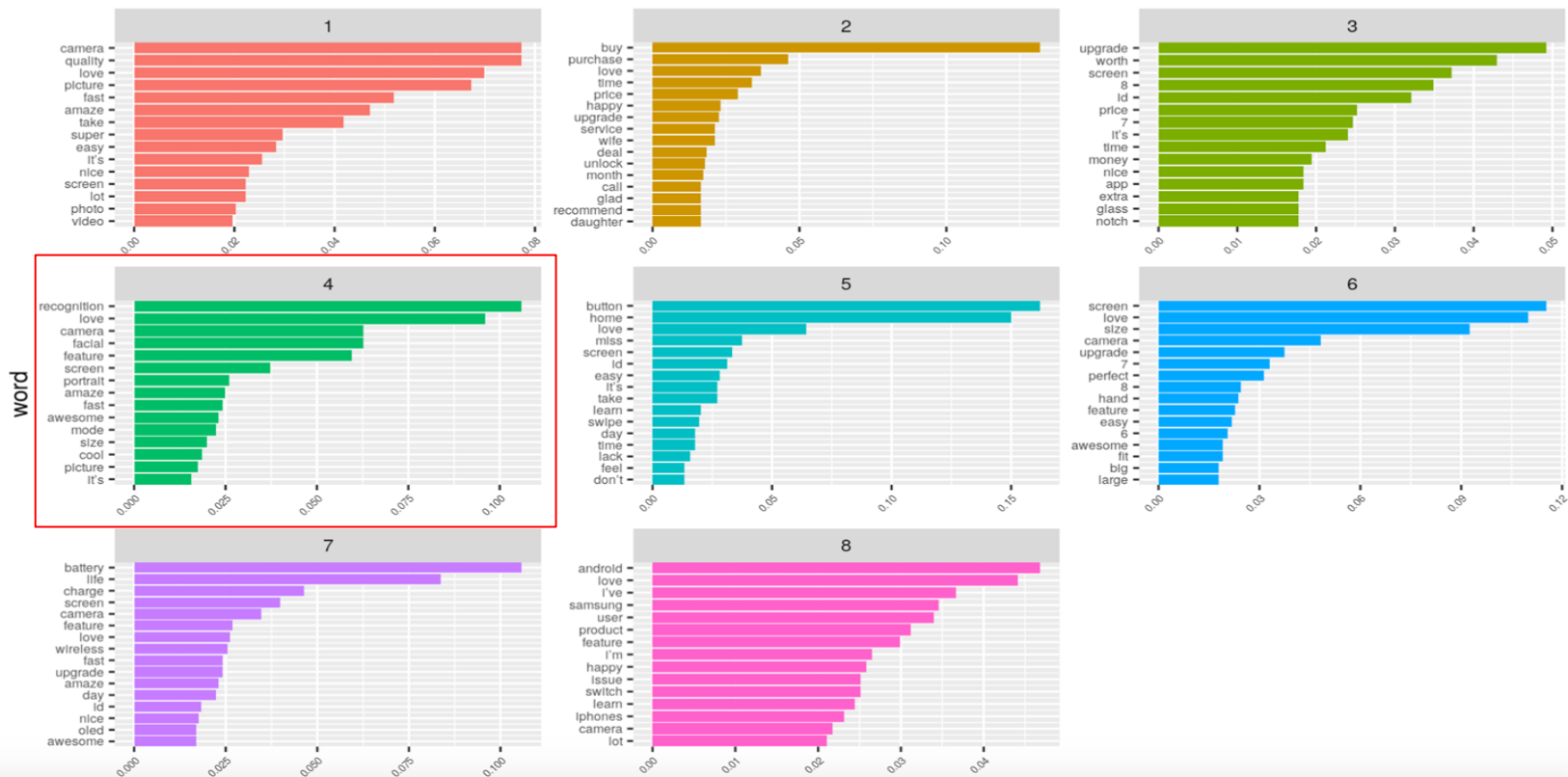
- Lost massive focus in 2017, slightly gained back some interest but dropped again in 2019.
- This new function is not flattering to most buyers.



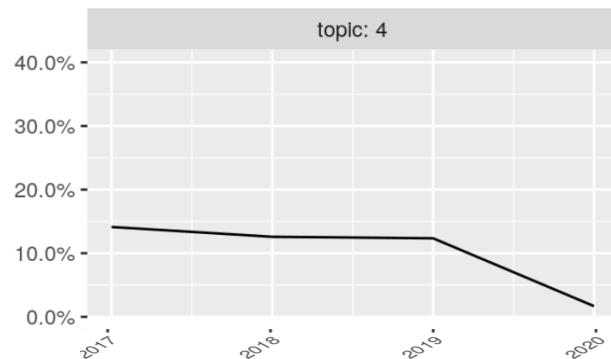
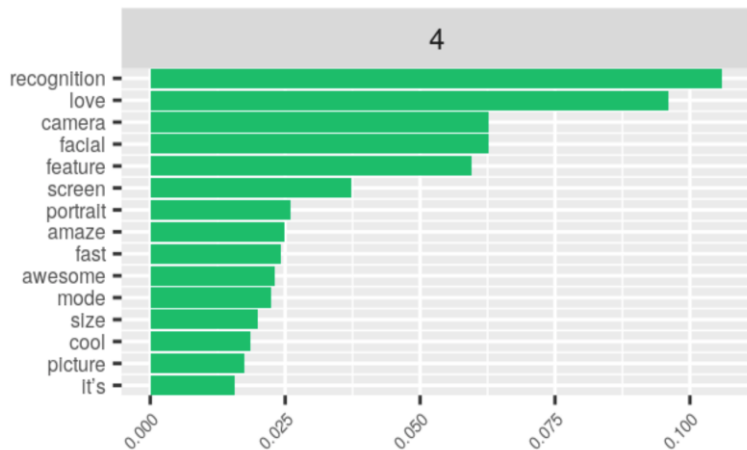
# iPhone X – Topic Model

Top Words by Topic

8 Topic LDA of 1,466 iPhone X Reviews



# iPhone X – Facial Recognition [😊]



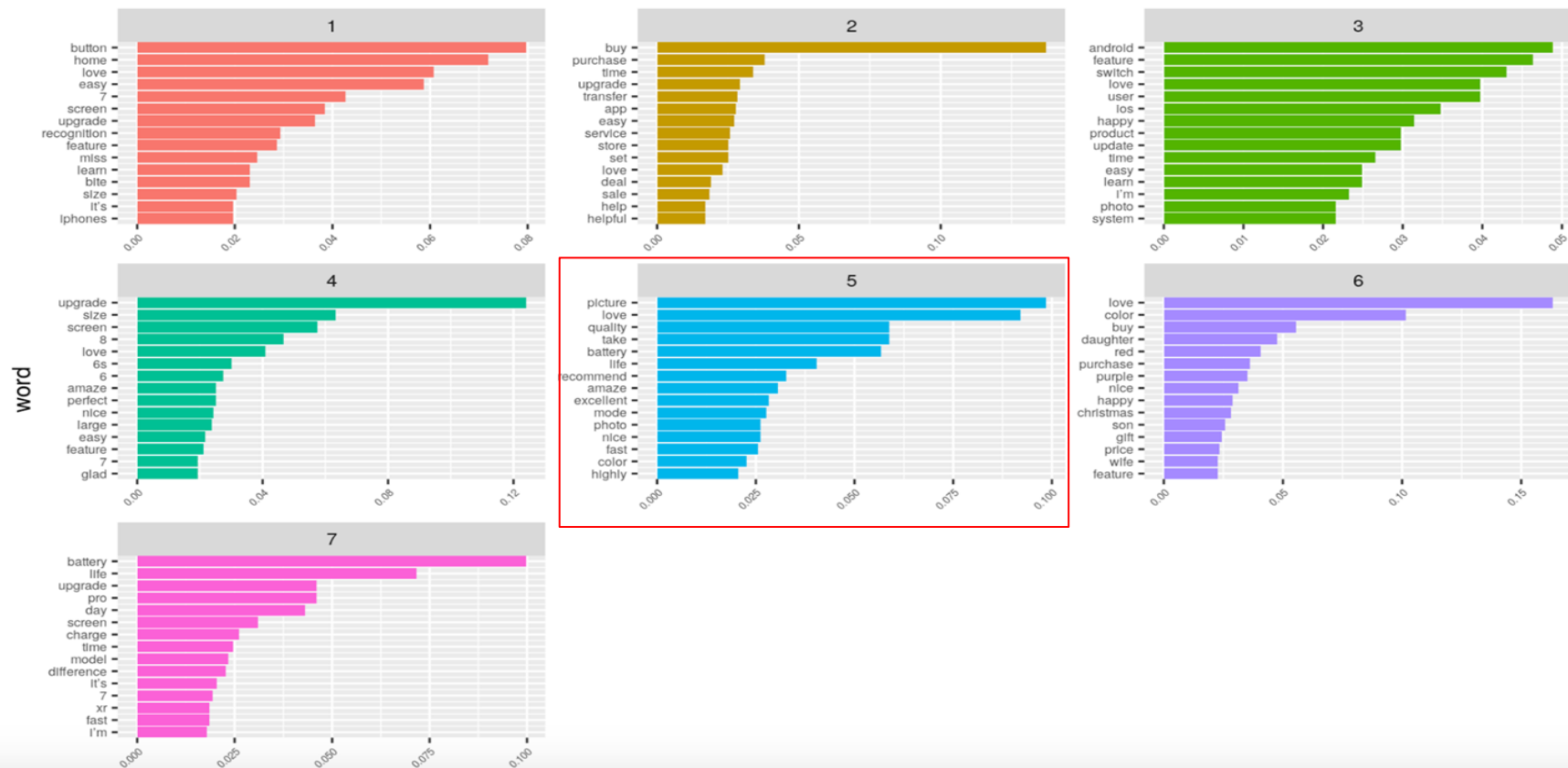
- Gradually lost focus throughout 2017 & 2018, then sharply dropped in 2019.
- This new function is highly favoured by most of users.



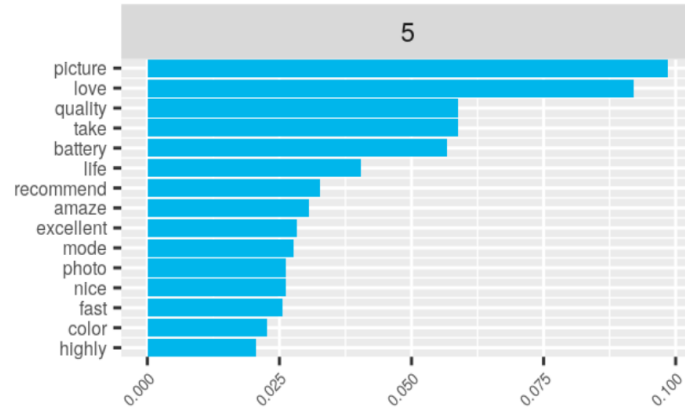
# iPhone 11 – Topic Model

## Top Words by Topic

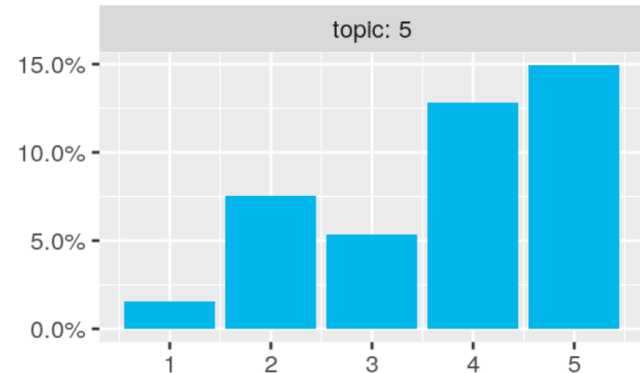
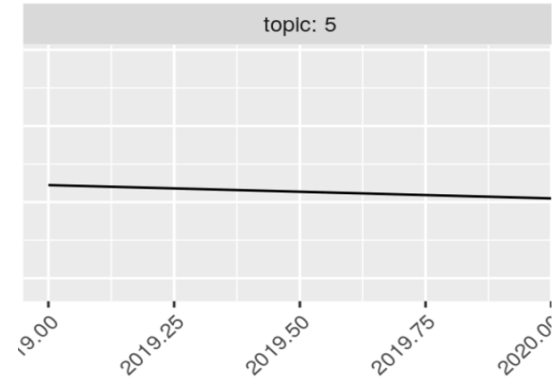
7 Topic LDA of 1,210 iPhone 11 Reviews



# iPhone 11 – Picture Quality



- Slightly lost focus throughout 2019.
- Most people are highly satisfied with the picture quality.







**night mode of iPhone 11**

**digital camera**

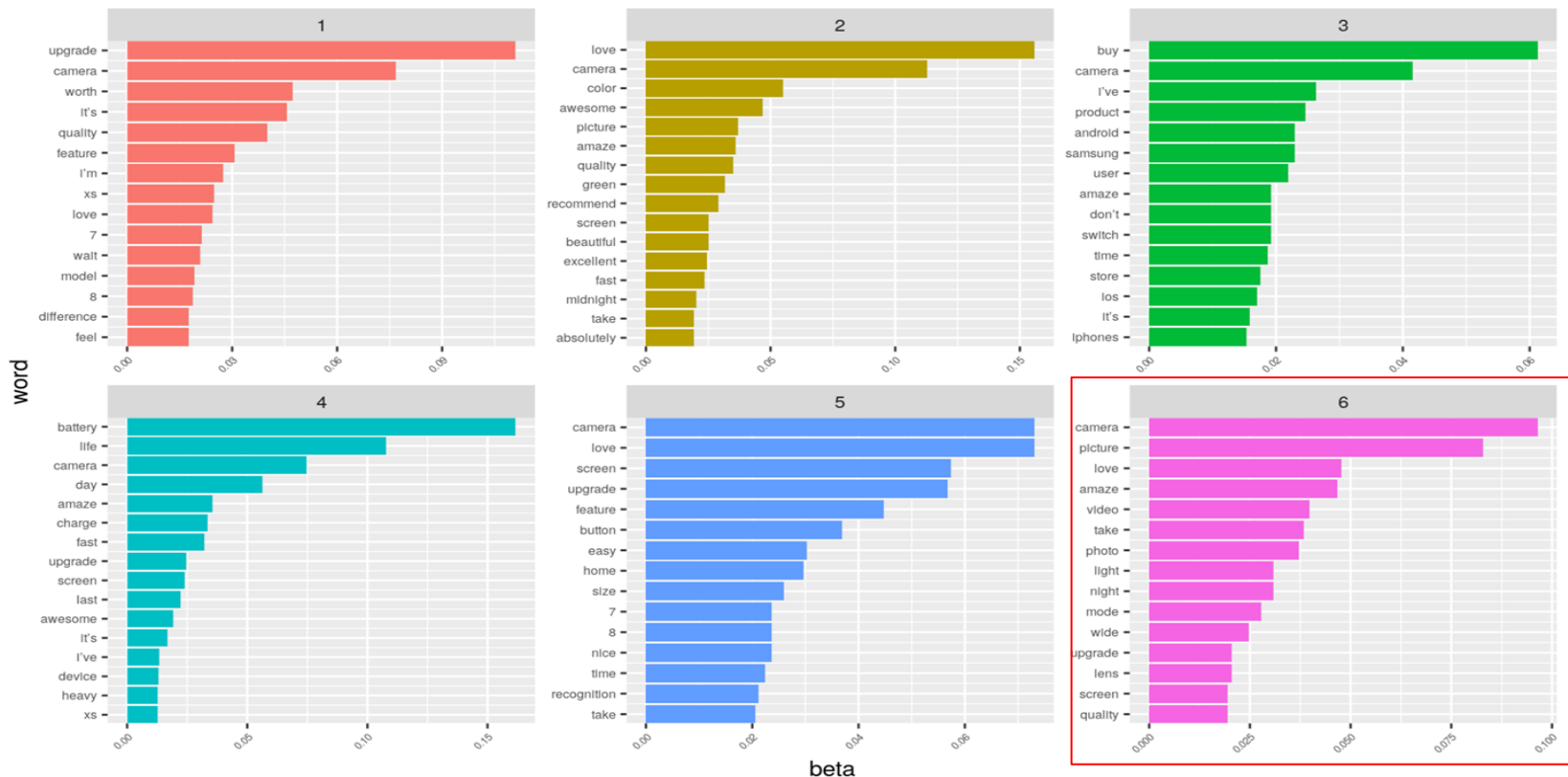


*(Photo courtesy of Amanda Zhao)*

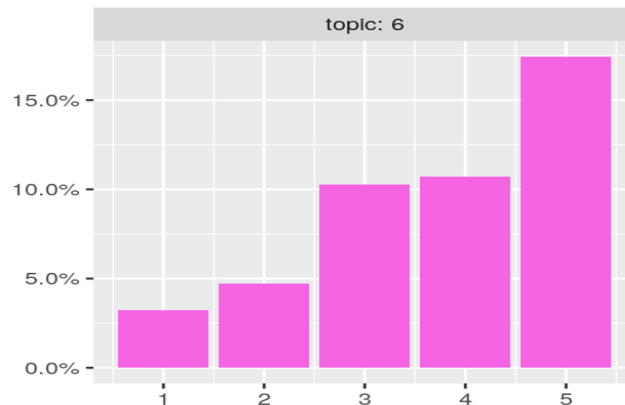
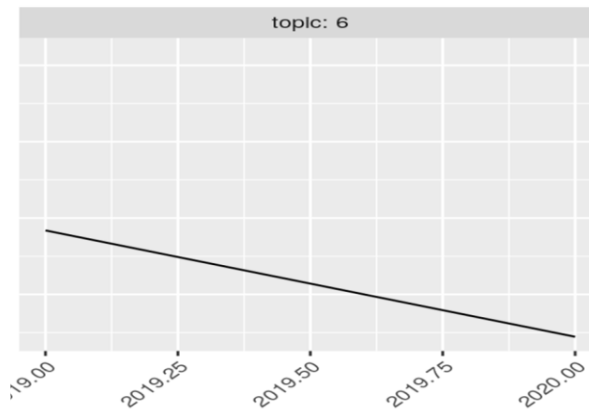
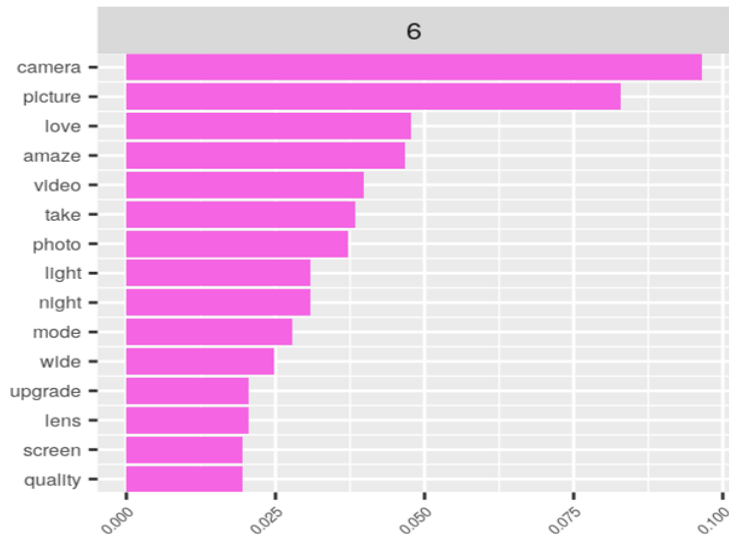
# iPhone 11 Pro Max – Topic Model

## Top Words by Topic

6 Topic LDA of 1,302 iPhone 11 Pro Max Reviews

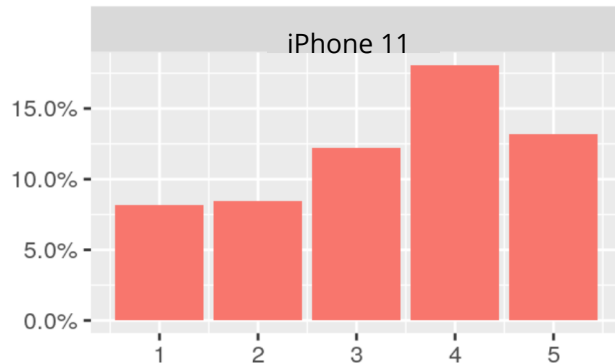
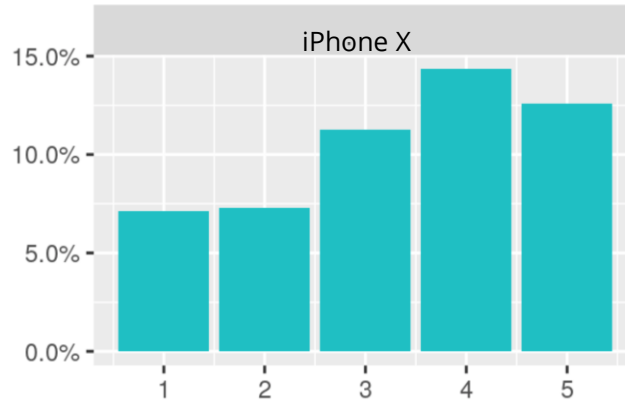
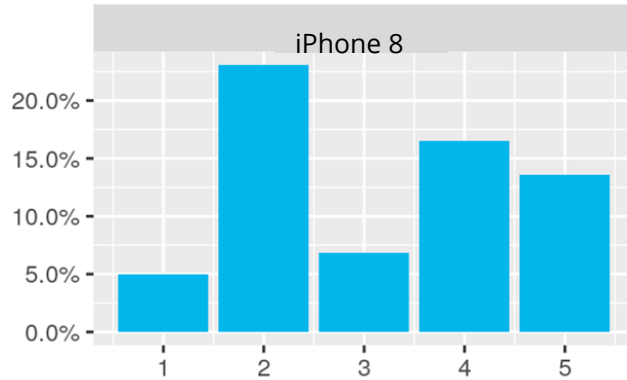


# iPhone 11 Pro Max – Camera Functionality



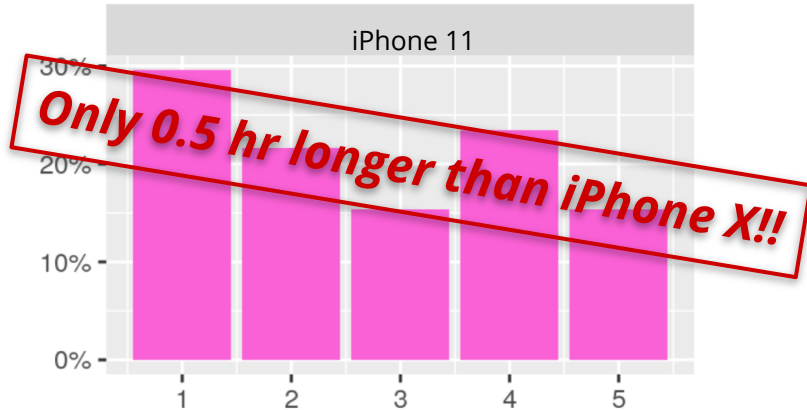
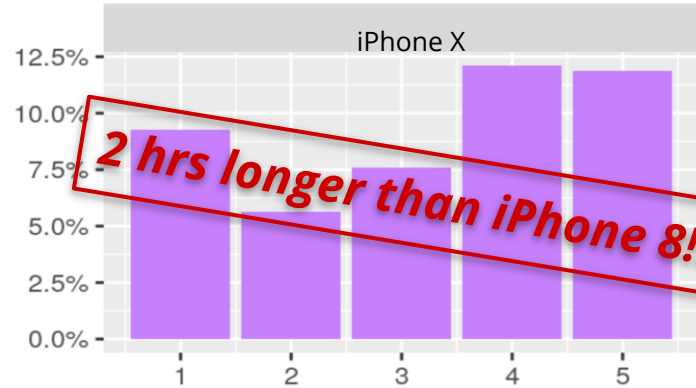
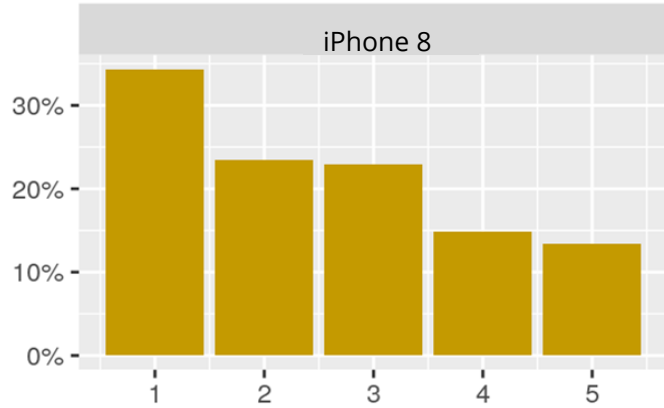
- Gradually lost focus throughout 2019.
- Camera functionality is significantly improved.

# Home Button



- Home Button is controversial for iPhone 8.
- Most people are satisfied with the no-home button designed iPhone X and iPhone 11.

# Battery Life



# Business Insights



# Insights

- **Apple takes customer opinions into account for overall strategy**
- **The majority of iPhone users value on battery life and camera**
- **iPhone customers like having many color choices**

# Recommendations

- Release iPhones with button and no-button products together
- Continue improving battery life and camera
- Wireless charging: No longer needs improvement
- More colors



**Thank you!!**