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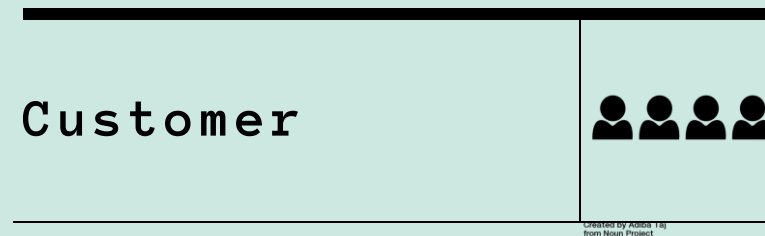Data & Donuts October 20,2023

Customer Reviews Data

Presented by
Meryl Brodsky, Librarian for Communication & the School of Information
Dr. Hanlin Li, Prof. School of Information

What are customer reviews data?

01

Customer

People who purchased this product or service write a review of what they purchased to help others with their purchase decision.

02

Review

Reviews may consist of star ratings, thumbs up or down, ratings on different dimensions, or text or videos.

03

Data

Data come from the content of the reviews. People use the data to get product or service information. Companies use it for feedback. Researchers use it to learn more about consumer behavior.

Poll #1 Have you ever used customer reviews to purchase a product or service?

More than 99.9% of consumers say they read reviews when shopping online at least sometimes.

Over half (57%) of shoppers read reviews while shopping in brick-and-mortar stores to assess potential purchases.

Power Reviews. (2021). Survey: The ever-growing power of reviews. https://www.powerreviews.com/insights/power-of-reviews-survey-2021/
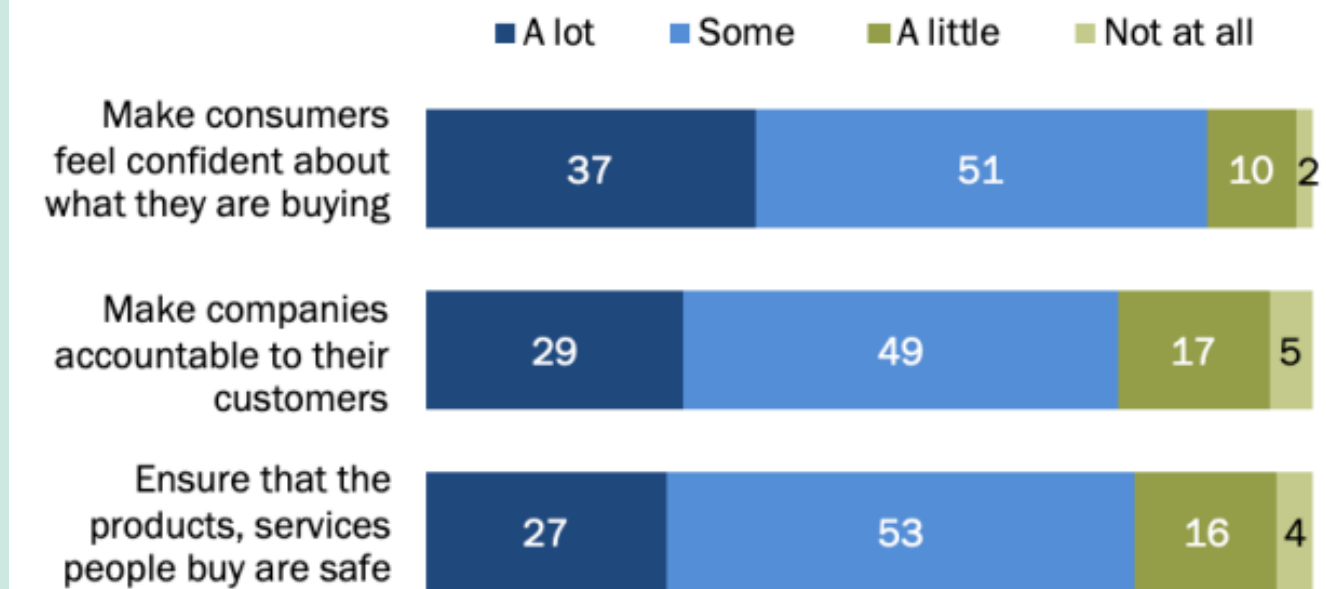
Poll #2 Do you regularly consider star ratings when you are purchasing a product or service?

Many Americans believe customer reviews and ratings improve consumer experiences

Many Americans believe customer reviews and ratings improve consumer experiences

% of U.S. adults who say customer reviews and ratings help _____ to …

■ A lot   ■ Some   ■ A little   ■ Not at all

Make consumers feel confident about what they are buying: 37 | 51 | 10 | 2

Make companies accountable to their customers: 29 | 49 | 17 | 5

Ensure that the products, services people buy are safe: 27 | 53 | 16 | 4

Note: Those who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Nov. 27-Dec. 10, 2018.

PEW RESEARCH CENTER

Poll #3 Have you ever been disappointed by a product or service that you purchased that had very good star ratings?

Star ratings problem #1

We don't know what a star is worth

Schneider, C. Weinmann, M. Mohr, P. N. C., vom Brocke, J. (2021: June). *Management Science*. 67(6) 3871-3898. https://doi.org/10.1287/mnsc.2020.3654
Khanna, H. (2017). The psychology of ratings systems. *The Hackernoon Newsletter*. https://hackernoon.com/the-psychology-of-rating-systems-3103e26fddd8
Image: Munroe, R. Star Ratings. https://imgs.xkcd.com/comics/star_ratings.png

Amazon

How Are Product Star Ratings Calculated?

Amazon calculates a product's star rating using machine-learned models instead of a simple average.

These models take into account factors such as how recent the rating or review is and verified purchase status. They use multiple criteria that establish the authenticity of the feedback. The system continues to learn and improve over time.

We do not consider customer ratings without an Amazon Verified Purchase status in a product's overall star rating until a customer adds more details in the form of text, image, or video.

Matsakis, L. (2018: May 25). What do Amazon's star ratings really mean?. *Wired*. https://www.wired.com/story/amazon-stars-ratings-calculated/
Image: Amazon. (2023). How are product star ratings calculated? https://www.amazon.com/gp/help/customer/display.html?nodeId=GQUXAMY73JFRVJHE

Customer Reviews Data

Star ratings problem #2

One dimensional rating system

"'Explaining why a chocolate cupcake tasted so divine makes us love the cupcake a little less," Moore noted in a statement, "while explaining why a movie was so horrible makes us hate the movie a little less.'"

Chen, Hong, Y., & Liu, Y. (2018). The value of multidimensional rating systems: Evidence from a natural experiment and randomized experiments. *Management Science*, *64*(10), 4629–4647. https://doi.org/10.1287/mnsc.2017.2852.
Moore, S. (2012). Some things are better left unsaid: How word of mouth influences the storyteller. *Journal of Consumer Research,* 38(6), 1140-1154. https://doi.org/10.1086/661891.
 Images: Cupcake with sugar hearts and nonpareils. https://commons.wikimedia.org/wiki/File:Cupcake_with_sugar_hearts_and_nonpareils.jpg. Star rating. https://commons.wikimedia.org/wiki/File:Star_rating_1_of_5.png.

Star ratings problem #3

People don't always rate based on their experiences with the product or service.
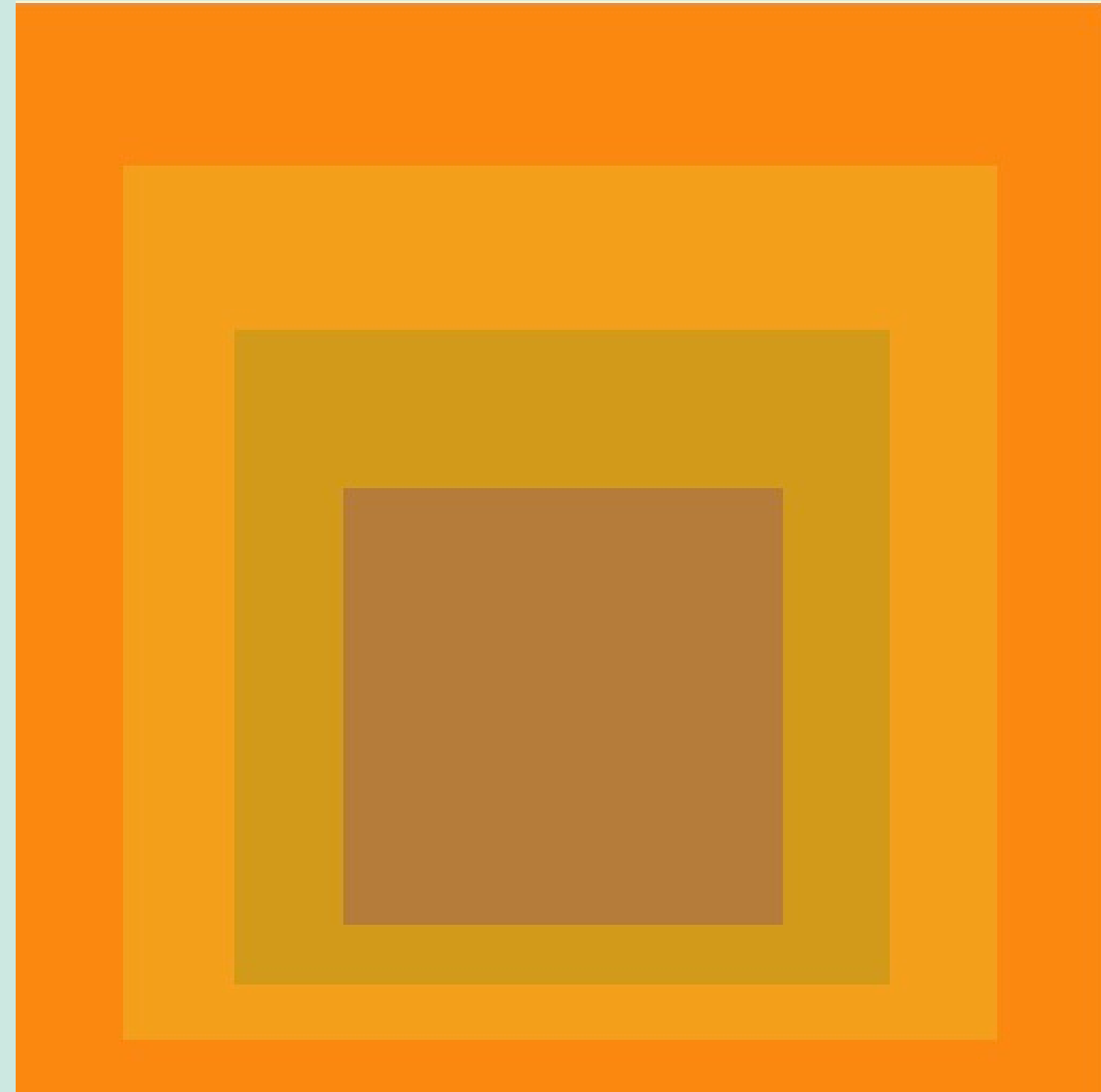
DeFeo, J.W. (2020: January 15). Amazon Review analysis. https://www.johnwdefeo.com/articles/amazon-review-analysis
Image: FriedeWie. (2019). Josef Albers Grafik Nach. https://commons.wikimedia.org/wiki/File:Grafik_nach_Josef_Albers1.jpg

Review Distortion #1

Guilt

$\longrightarrow$ Sometimes honesty has consequences.

Filippas, A. Horton, J.J., Golden, J. M. (2022: July-August). Reputation inflation. *Marketing Science,* 41(4) 733-745. https://doi.org/10.1287/mksc.2022.1350
Image: Open Grid Scheduler. (2020). Uber Lyft car. https://www.flickr.com/photos/opengridscheduler/50269906687

Customer Reviews Data

Review Distortion #2

Information Overload

→   195,000+ reviews is too much.

→   Maybe we don't need <u>all</u> these reviews?

Majumder, M. G., Gupta, S. D., and Paul, J. (2022). Perceived usefulness of online customer reviews: A review mining approach using machine learning & exploratory data analysis. *Journal of Business Research* 150, 147-164. https://doi.org/10.1016/j.jbusres.2022.06.012
Image: Amazon. (2023). The Pink Stuff. https://www.amazon.com/Pink-Stuff-Miracle-Purpose-Cleaner/

Customer Reviews Data

Helpful Reviews

Information that is considered most helpful in product reviews according to internet users in the United States as of September 2018

Category	Share of respondents
Product performance	60%
Purchaser satisfaction	55%
Product quality	54%
Quality over time	50%
Description accuracy	49%
Value	44%
A specific question	39%
Exceeded expectations	33%
Advice about use	21%
Reason for purchasing	15%
None of these	2%

Share of respondents
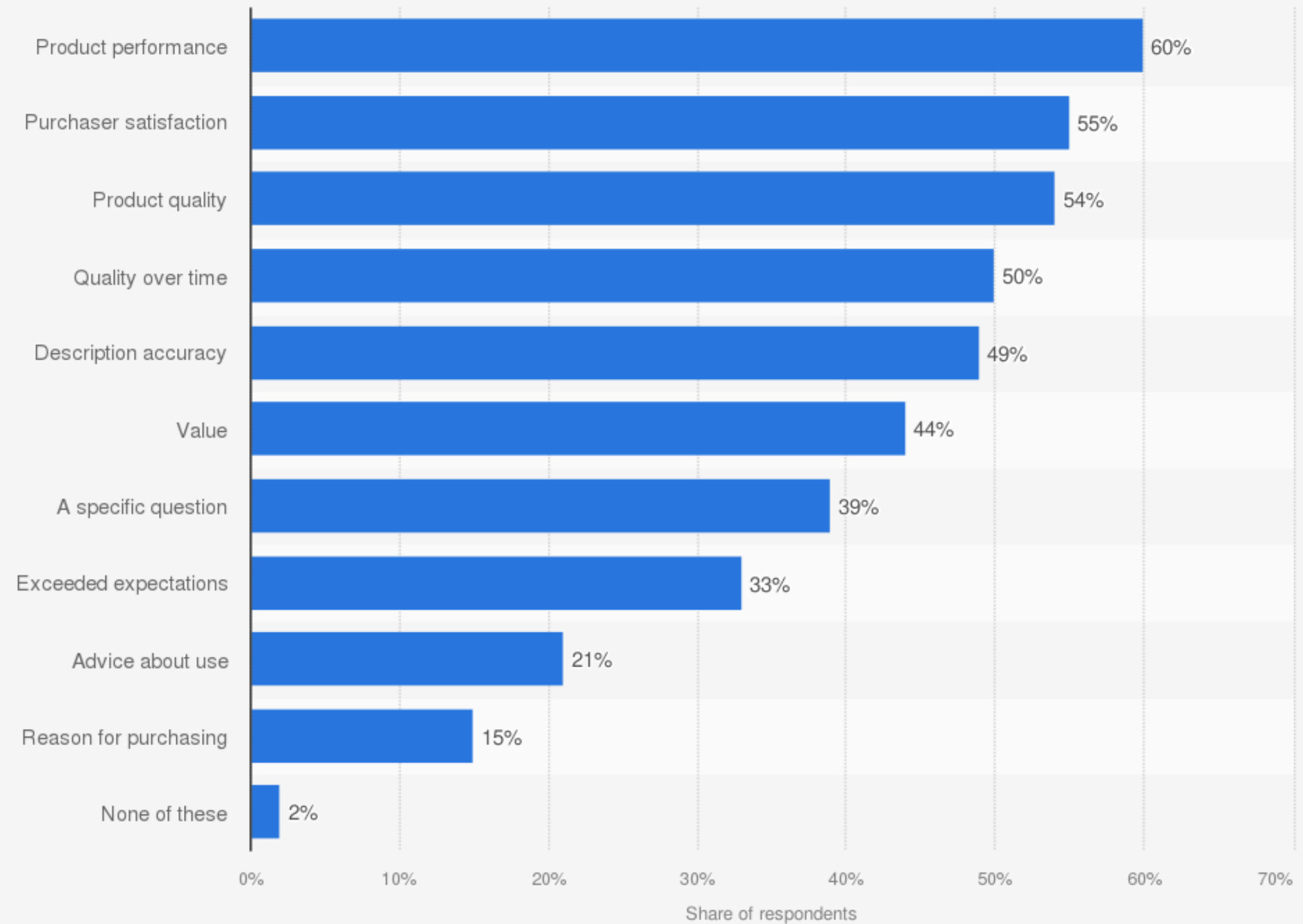
Sources
eMarketer; TurnTo; Ipsos
© Statista 2023

Additional Information:
United States; Ipsos; August 23 to September 3, 2018; 2,020 respondents; 18 years and older; internet users; Online surv

Image: eMarketer. (February 6, 2019). Information that is considered most helpful in product reviews according to internet users in the United States as of September 2018 [Graph]. In Statista. Retrieved October 17, 2023, from https://www-statista-com.ezproxy.lib.utexas.edu/statistics/713308/leading-us-online-review-information/ Weathers, D., Swain, S. D., Grover, V. (2015) Can online product reviews be more helpful? Examining characteristics of information content by product type, *Decision Support Systems* (79) 12-23.

Customer Reviews Data

Review Distortion #3

Gender Differences

- People interpret review information differently.

- Women pay more attention to negative reviews than positive reviews.

- Women consider all aspects of the review.

- Men tend to stick to facts.

Chen, T., Samaranayake, P., Cen, X., Qi, M., and Lan, Y.-C. (2022) The Impact of Online Reviews on Consumers' Purchasing Decisions: Evidence From an Eye-Tracking Study. *Frontiers in Psychology* 13:865702. https://doi: 10.3389/fpsyg.2022.865702
Image: Daring Differently: Gender Differences in Risk-Taking Behavior, *Neuroscience News* https://neurosciencenews.com/gender-risk-taking-23431/

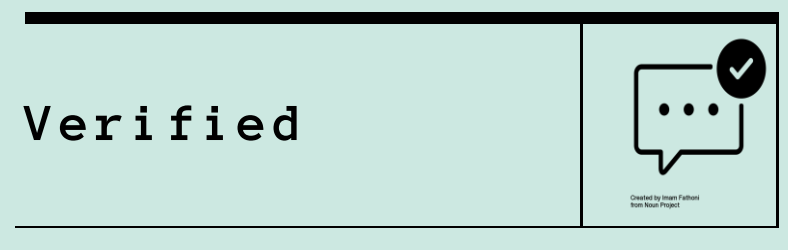Customer Reviews Data

Review Distortion #4

01

Sponsored

A company pays the reviewer for their review in the form of coupons, discounts, free samples or money.

02

Verified

These reviews are by customers who have been verified as making the purchase. These reviews are often invited by the company.

03

Organic

These are unsolicited reviews we see written by regular people, but there is no way to tell if they bought or used this product or service.

Kim, S. J., Maslowska, E., Tamaddoni, A. (2019, January). The paradox of dis(trust) in sponsorship disclosure: The characteristics and effects of sponsored online consumer reviews. *Decision Support Systems* 116: 114-124. https://doi.org/10.1016/j.dss.2018.10.014
Images: Sponsor by Iconika from https://thenounproject.com/browse/icons/term/sponsor/ Noun Project (CC BY 3.0)
Verified by Imam Fathoni from https://thenounproject.com/browse/icons/term/verified/ Noun Project (CC BY 3.0)
Organic by Kaylen Yul Lee from https://thenounproject.com/browse/icons/term/organic/ Noun Project (CC BY 3.0)

Customer Reviews Data

Review Distortion #5

Celebrity Endorsements
Or Influencers

$\longrightarrow$ *Nielsen reports that 71% of people trust advertising from influencers.(2021).*

THE BEST ON EARTH.
Air Jordan from Nike.
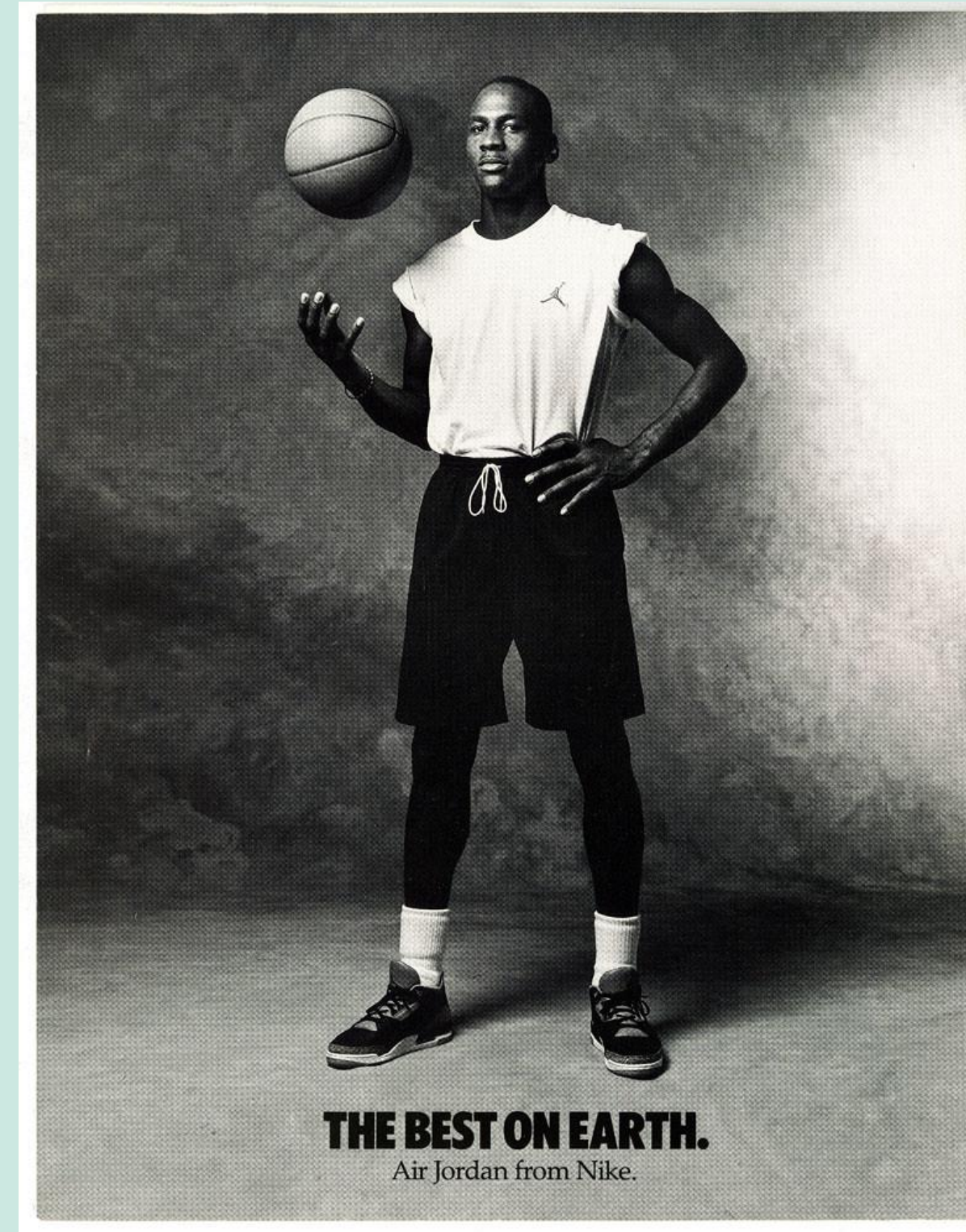
D'Ambrogio, S., Werksman, Platt, M. L. and Johnson, E. N. (2023: April). How celebrity status and gaze direction in ads drive visual attention to shape consumer decisions. *Psychology of Marketing.* 40: 4, 723-734. https://doi.org/10.1002/mar.21772
Images: (1985). Nike – Michael Jordan Advertisement. https://www.flickr.com/photos/nationalmuseumofamericanhistory/6303042315.
Adidas. (2023). Tiffany Abreu. https://news.adidas.com/people/adidas-creates-new-possibilities-for-women-in-sport-with-its-biggest-ever-commitment-to-innovation

Poll #4 Have you ever written a customer review?

More Likely to Vent Than to Recommend?
% of U.S. consumers who did the following after a very good/bad customer experience lately

■ After a very good experience   ■ After a very bad experience

	After a very good experience	After a very bad experience
Told friends about it	44.0%	46.7%
Sent feedback directly to the company	20.2%	26.7%
Wrote something on Facebook	14.8%	17.1%
Commented on/rated the company on a review website	10.7%	11.1%
Wrote something on Twitter	6.5%	8.0%
Didn't tell anyone about the experience	34.0%	27.0%

Based on a survey of 10,000 U.S. consumers asked about their recent interactions with more than 300 companies across 20 industries
@StatistaCharts   Source: Temkin Group Q3 2017 Consumer Benchmark Study

statista

Weise, E. (2017: March 20). That review you wrote on Amazon? Priceless *USATODAY*
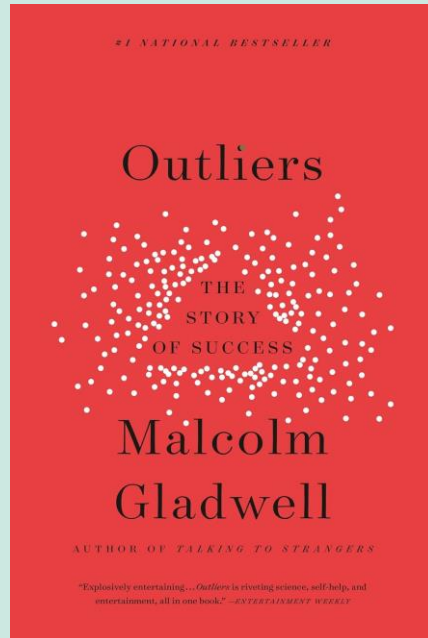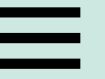https://www.usatoday.com/story/tech/news/2017/03/20/review-you-wrote-amazon-priceless/99332602/
Image: Richter, F. (2018: June 25). Customer experience: More Likely to Vent Than to Recommend? Statista. https://www-statista-com.ezproxy.lib.utexas.edu/chart/14405/sharing-of-customer-experiences/
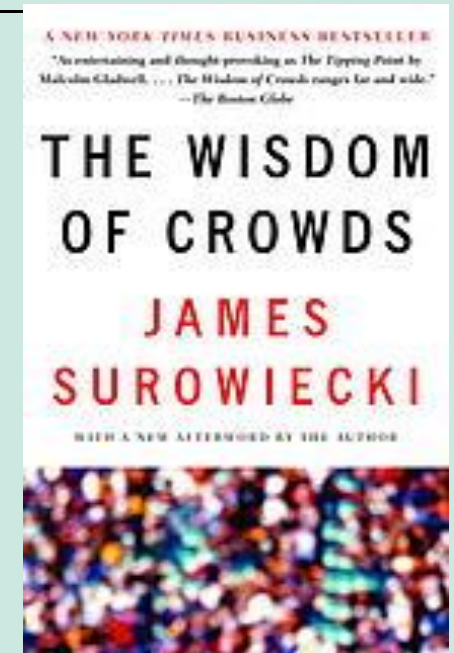
Who is an expert?

ex·pert

/ˈek ˌspərt/

noun

A person who has a comprehensive and authoritative knowledge of or skill in a particular area. ⌄ ⌃

Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few and how collective wisdom shapes business, economies, societies, and nations,* Doubleday.

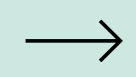Gladwell , M. (2008). *Outliers : The story of success,* Allen Lane.

Customer Reviews Data
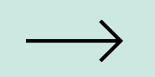
Hierarchy of Information

01

Experts

Experts in the field specialize in this particular area. Some charge for the reviews, but in the case of major investments, it could be worth it.

→
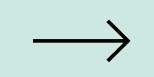
02

Test Experts

These are experts in testing, and they are unbiased, and create standards for testing, and repeat tests before publishing.
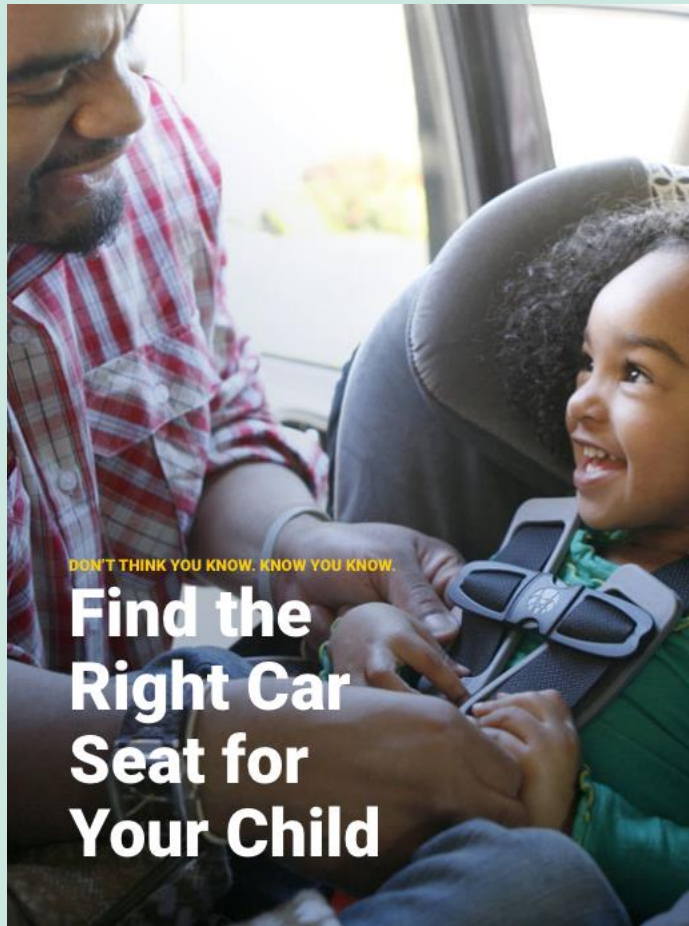
→

03

Regular People

These are the customer reviews we see most commonly on Amazon or Nextdoor. These are our peers.

→

Customer Reviews Data

Find the Right Car Seat for Your Child

- For purchases that are $$$

- For purchases that involve safety

- For purchases that involve children

Customer Reviews Data

Image: U.S. Department of Transportation. National Highway Traffic Safety Administration. (2023). Car seats and booster seats.
https://www.nhtsa.gov/equipment/car-seats-and-booster-seats

- For purchases that are $$
- For purchases that frequently change/update technology
- For purchases in which durability is an issue

Customer Reviews Data

Image: Consumer Reports. Rain Test. https://www.news4jax.com/money/2023/10/18/cellphone-durability-does-your-smartphone-pass-consumer-reports-tough-tests/

Customer Experience Matters – for some purchases →

- For purchases that are $
- For purchases you touch/feel
- For purchases in which there are many options

Image: FreeStocks.org. (2017). Beauty Photo Shoot. https://commons.wikimedia.org/wiki/File:Beauty_photoshoot_makeup_(Unsplash).jpg

Fake Review Indicators

- A group of reviews comes in at once or there is a sharp jump in the number of reviews in a short period of time

- A reviewer leaves one review on the site

- A lack of details in the review

- Emotional exaggeration

- Identical wording in multiple reviews

- Poor English (pronouns)

mb7391

Age
Gender
Member since Apr 2021

2 reviews
5.0 average review score

❌ Few details about the reviewer

❌ New reviewer with only a few one-sided reviews

These are the greatest headphones ever
★★★★★

These is the gratest headphones ever!!! Super high-quality sound. You can connect without worry to your Bluetooth (including Bose SimpleSync technology). The headphones deliver up to 20 hours of wireless play. you should definitely buy one

0 people found this helpful

❌ Exaggerated headline

❌ Short, poorly written review that mentions product details

❌ Few or no helpful votes, not a verified purchase

Kiara

Age: 28
Gender: Female
Member since Feb 2014

65 reviews
4.1 average review score

✅ Detailed reviewer profile

✅ Established reviewer with many two-sided and neutral reviews

Great value headphones with one caveat
★★★★☆

These phones sound really nice, for being under $20. They sound much better sound than you might have expected at this price point. Frequency response is good for the price. Clear treble and adequate bass response to let you "feel" the drums and bass guitar. Soprano and contralto vocals sound nice and clear, without that "muddy" sound. The only caveat: the cord is only 3 feet long, not really long enough for home use with a desktop computer. Overall, though, great pair at a fair price.

89 people found this helpful   **Verified Purchase**

✅ Balanced review

✅ Descriptive, well-written review with subjective details

✅ Many helpful votes, verified purchase

Prosperpio, D., Hollenbeck, B., and He, S. (2020: Nov.). How fake customer reviews do and don't work. *Harvard Business Review.*

U.S. Federal Trade Commission. (2023). How to evaluate online reviews. https://consumer.ftc.gov/articles/how-evaluate-online-reviews

Chevalier, S. (2023: Feb. 16). Amazon product categories with the largest share of fake product reviews worldwide as of December 2018. https://www.statista.com/statistics/997026/amazon-shopping-categories-largest-share-fake-product-reviews/

Moon, S., Kim, M., Iacobucci, D. (2021). *International Journal of Research in Marketing*, (38) 343-364. https://doi.org/10.1016/j.ijresmar.2020.08.001

Image: Review Trackers. (2022: Nov. 22). Tools for Fake Review Detection: How to Spot Fake Reviews. *Review Trackers Blog.*

How Companies use Customer Reviews

$\longrightarrow$
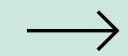
Advertising

Online reviews can be a form of advertising. Customers read these reviews to learn more about the purchase experience. Reviews do have an influence on their purchase decision, especially if they are positive.

$\longrightarrow$

Feedback

The feedback mechanism comes in the form of positive, but also negative reviews. The act of responding to feedback can build a trust relationship between the company and the customer.

.

$\longrightarrow$

Research

Companies use customer reviews to get feedback on product innovations for themselves or to learn about their competitors.

Arief, M., Mustikowati, R.I. and Chrismardani, Y. (2023), "Why customers buy an online product? The effects of advertising attractiveness, influencer marketing and online customer reviews", LBS Journal of Management & Research, Vol. 21 No. 1, pp. 81-99. https://doi.org/10.1108/LBSJMR-09-2022-0052
ITaeyong Kim, Seungsoo Hwang, Minkyung Kim, (2022). Text analysis of online customer reviews for products in the FCB quadrants: Procedure, outcomes, and implications, *Journal of Business Research*, 150, 676-689, https://doi.org/10.1016/j.jbusres.2022.05.077

Customer Reviews Data

Academic Research

$\longrightarrow$

Text Mining

Text mining uses natural language processing to transform unstructured text into a more structured form for analysis. It's used for determining review helpfulness, product rankings, and identifying popular product features.
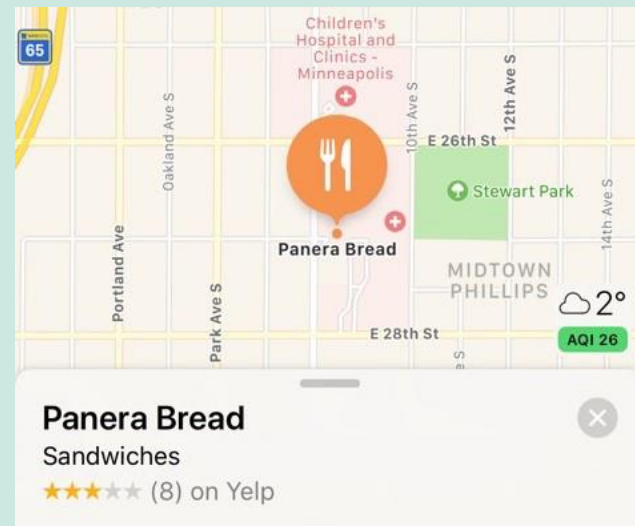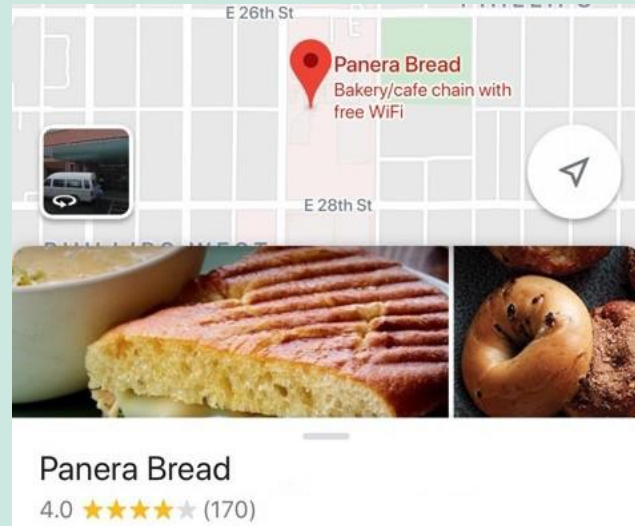
.

$\longrightarrow$

Sentiment Analysis

Sentiment analysis analyzes text and gives it a sentiment score. In its most basic form, it could determine if a text has a positive or negative sentiment. However, sentiment classes do not have to be binary and can be expanded to any number of different sentiments.

Davis, S. & Tabrizi, N. (2021). Customer Review Analysis: A Systematic Review. *2021 IEEE/ACIS 6th International Conference on Big Data, Cloud Computing, and Data Science (BCD)*, 91–97. https://doi.org/10.1109/BCD51206.2021.9581965
Image: The Good Housekeeping Institute from: https://postalmuseum.si.edu/exhibition/america%E2%80%99s-mailing-industry-industry-segments-magazine-publishers/good-housekeeping

3 Stars on Yelp, 4 Stars on Google Maps: A Cross-Platform Examination of Restaurant Ratings

Hanlin Li and Brent Hecht. 2020. 3 Stars on Yelp, 4 Stars on Google Maps: A Cross-Platform Examination of Restaurant Ratings. In Proceedings of the ACM on Human-Computer Interaction, CSCW4, Article 254 (December 2020). 25 pages. https://doi.org/10.1145/3432953

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Thank you

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