

# Reading Reflection 12

## Option 2

The main point of the paper is to evaluate the viability of using crowdsourcing, specifically Amazon's Mechanical Turk (MTurk), for conducting graphical perception experiments traditionally done in laboratories. The authors aimed to demonstrate that crowdsourcing could be a cost-effective, scalable alternative that produces reliable data for assessing visualization design. The paper argues that while crowdsourcing introduces variables that are harder to control, it compensates with the benefits of low cost, scalability, and access to a diverse pool of participants.

The paper successfully conveys that crowdsourcing can serve as a powerful tool for visualization research, complementing traditional methods and expanding the possibilities for experimental design and participant engagement.

The Cleveland study of graphical perception investigates how well people perceive different types of graphical representations of data. Our Project is on visualizing “Spotify’s Top 50 Songs of 2023”. We are applying some of these principles in our project in the following ways:

1. While ranking the top 50 songs, we use a vertical bar chart where each song is represented by a bar. The length of each bar would represent the popularity metric of each song.
2. While displaying songs in groups such as genres and artists, we use different colors for each such group. Using different colors for these categories can help viewers quickly distinguish between them.
3. We try to avoid the use of pie charts and radar charts as much as possible. We use the radar chart for only one such visualization where users don’t have to know the quantitative value for each group.
4. Furthermore, our final product which is the dashboard will be interactive. Using tooltips users will have access to more information like song previews, artist details. This adds depth to the visualization without cluttering the initial view.

In the study discussed on page 207 the authors chose to omit certain responses from their analysis. Those were subjects that set the grid line alpha value to zero or higher than 0.4 in an experiment designed to assess the perceptibility of gridlines against varying background luminance.

Omitting responses in general studies is considered reasonable because it helps to ensure that the data analyzed are representative and reliable. Researchers typically exclude outliers or erroneous data to prevent skewed results that could misrepresent the true trends or effects being studied. This approach is crucial for maintaining the statistical integrity of the results.

In the context of crowdsourced studies, omitting certain responses becomes even more critical due to the variability in participant engagement and understanding. Crowdsourcing platforms like Mechanical Turk can attract a diverse pool of participants whose attention to detail and commitment to task completion can vary significantly. This variability can introduce a range of data quality issues, making it essential to filter out responses that are clearly incorrect, incomplete, or non-compliant with the task instructions.

The decision to omit certain responses should also consider the volume of data collected. In crowdsourced studies, where large volumes of data can be gathered cost-effectively, researchers have the flexibility to apply strict data inclusion criteria without losing statistical power. This large data volume allows for the exclusion of outlier responses that might distort the overall analysis.

One notable aspect of the paper is their discussion on the performance and cost of using Mechanical Turk (MTurk) for their experiments. It emphasizes how qualification tasks and verifiable questions ensure high-quality data from a diverse participant pool, addressing potential issues of participant engagement and data integrity in crowdsourced settings. Additionally, the authors highlight the economic benefits of MTurk, noting that it substantially reduces the costs compared to traditional lab-based studies while providing rapid access to a large number of responses.