Crowdsourcing and Information Visualization Evaluation

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Crowdsourcing

- A marketplace whereby anyone having Internet access could contribute to the completion of a task for free or in exchange for a monetary reward

- Can overcome several limitations of controlled laboratory experiments

Heer & Bostock (2010)

- Goal: assess the viability of crowdsourcing graphical perception experiments

- Replicated prior laboratory studies on spatial data encodings and luminance contrast

- Provided novel insights for optimizing display parameters

- Crowdsourcing reduces money and time costs

Use Of Crowdsourcing For Empirical Evaluations Of Visualizations
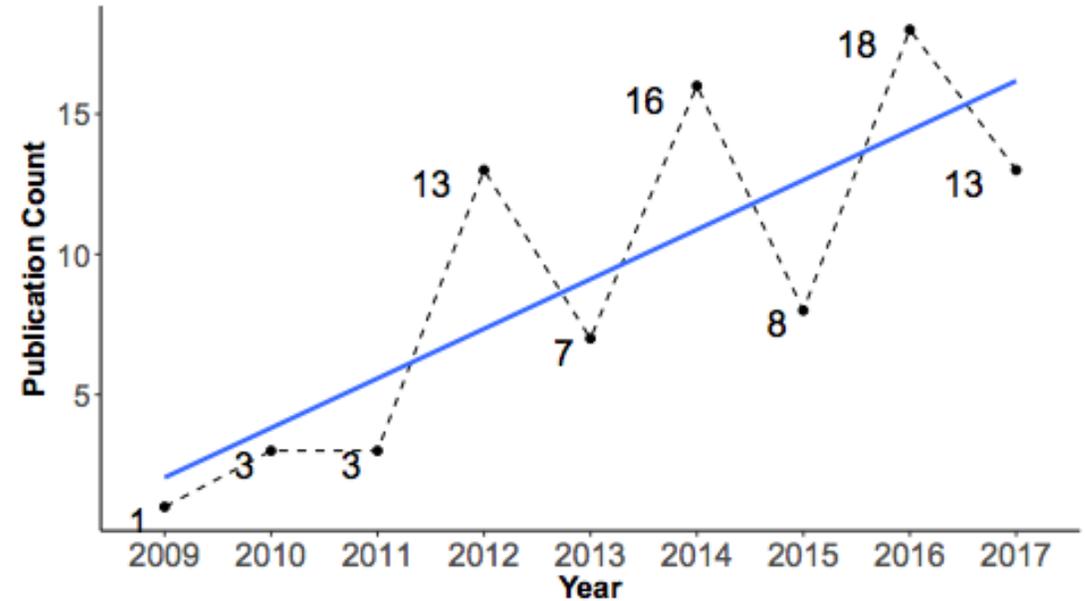## (Borgo et al., 2018)

Figure 1: *The number of papers employing crowdsourcing experiments has followed an upward annual trend. While we analyzed papers published between 2006 and 2017, the first paper with a crowdsourcing experiment for visualization was published in 2009.*

Critical Aspects of A Crowdsourcing Experiment for Visualization Research

Study design

Tasks

Participants

Study procedure

Quality assurance

Compensation

Measure and metrics

Borgo et al., 2018

Opportunities and Challenges

1 Find the right workforce

2 Consider other possible covariates

3 Adopt novel quality assurance technique

4 Share resources with the community

5 Leverage advances in technology

Borgo et al., 2018

References

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Borgo, R., Micallef, L., Bach, B., McGee, F., & Lee, B. (2018). Information visualization evaluation using crowdsourcing. *Computer Graphics Forum, 37,* 573-595.

Heer, J., & Bostock, M. (2010). Crowdsourcing graphical perception: using mechanical turk to assess visualization design. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 203-212).