

Tracking Publication Impact for Medical Device: Understanding How the Type of Article Affects Common Bibliometric Measures

Cody Lensing PhD*; Janice Hodge, MLIS*; Dany Gaillard PhD, Amanda Steele, PhD
Terumo BCT, Inc., Lakewood, Colorado, USA

*Equal contribution

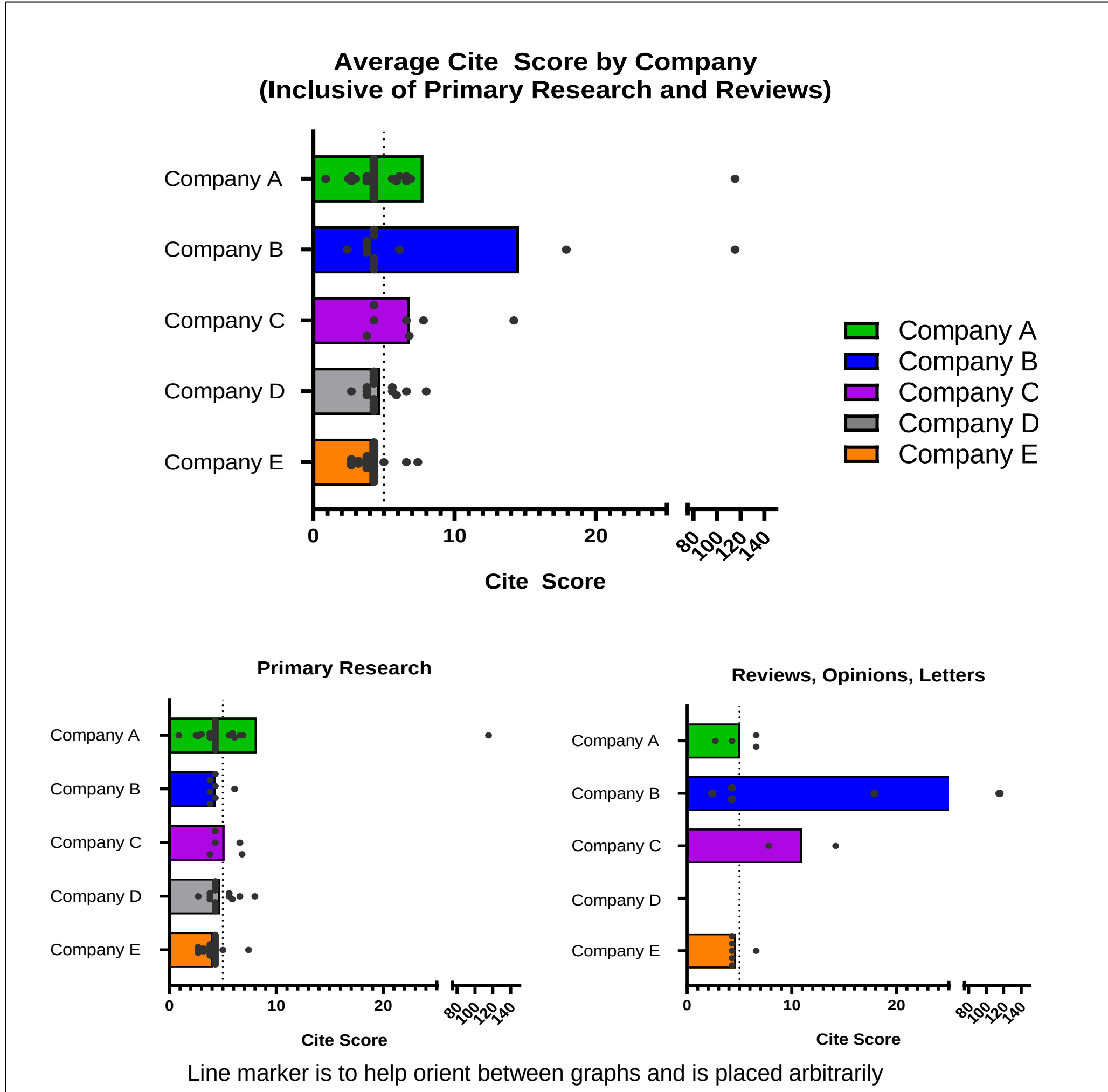
Background

- High impact publications can have an outsized influence on framing health information communicated to medical and patient communities.
- Impact of publications can be evaluated in many different ways including Altmetric scores, citation behavior and patterns, inclusion in clinical practice guidelines, and their influence on regulatory bodies and reimbursement structures.
- We compared standard bibliometric measures of impact for industry-related publications in the medical device space from five companies to understand whether any one company was dominating the public narrative.
- Bibliometric measures were chosen for this evaluation because they are readily available in public databases and provide an objective measure of behavior in the medical field where these companies work.

Methods

Articles from 5 medical device companies with a similar portfolio were identified using indexed author affiliations in PubMed and Embase over a 5-year period (2015-2020). Impact measures from Dimensions and Scopus were compared for primary research (i.e., research articles and brief reports) and other literature (i.e., reviews, letters, opinions) for each company.

Journal Level Characteristics and Impact Metrics

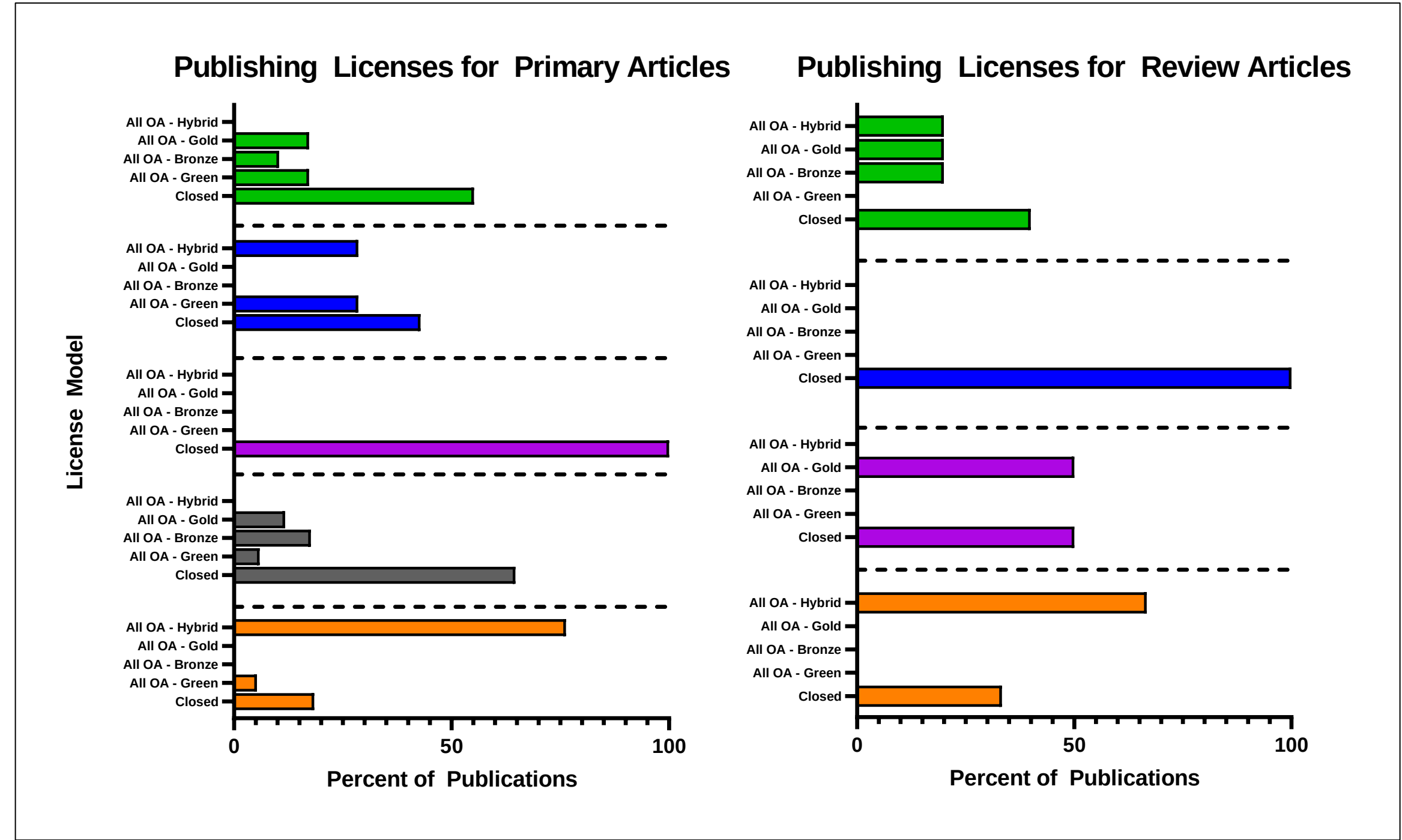
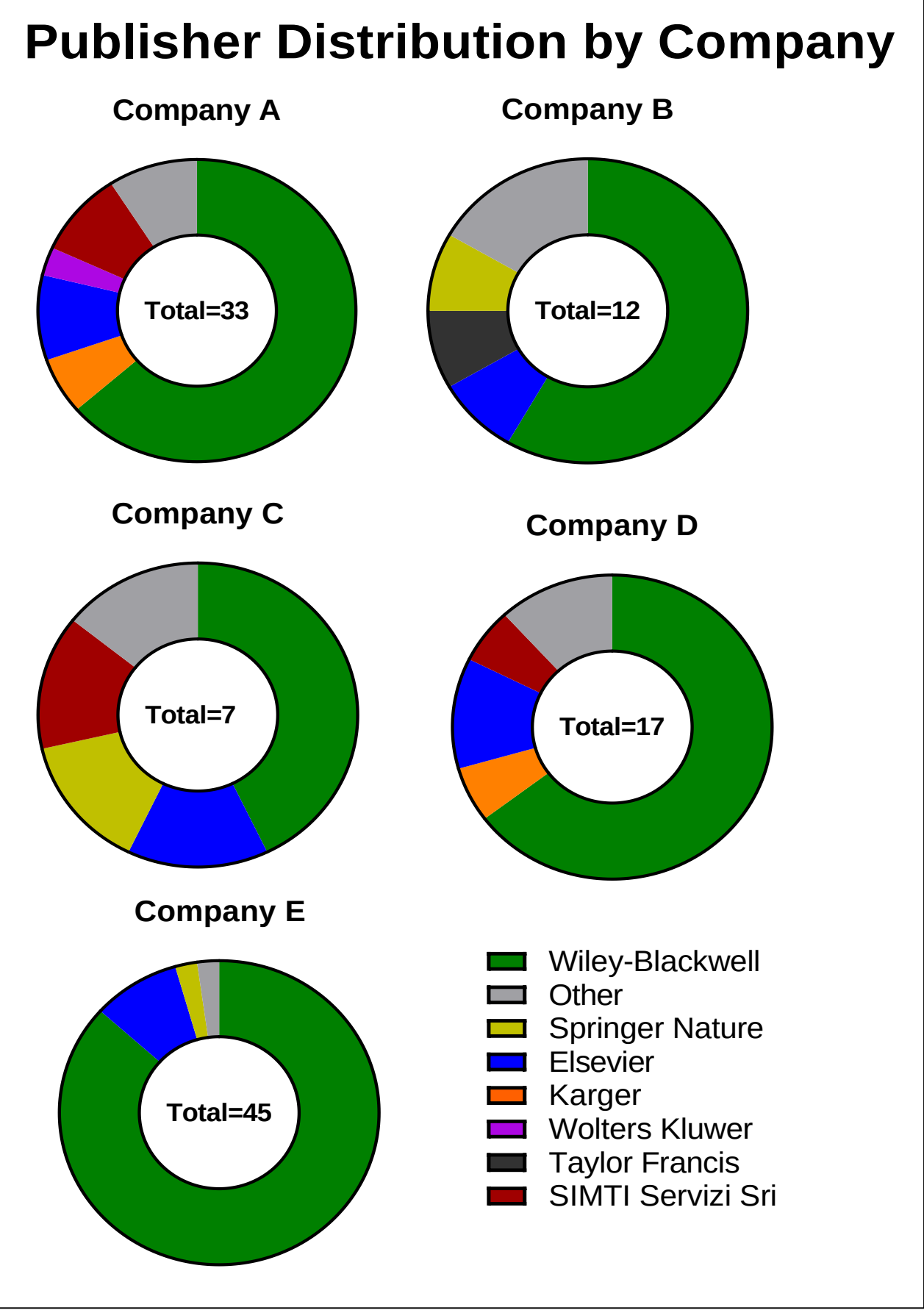


Definition: CiteScore is the number of citations to documents in a given journal title divided by the number of documents indexed in Scopus and published during the same years. Documents include articles, reviews, conference papers, book chapters, and primary research reports.

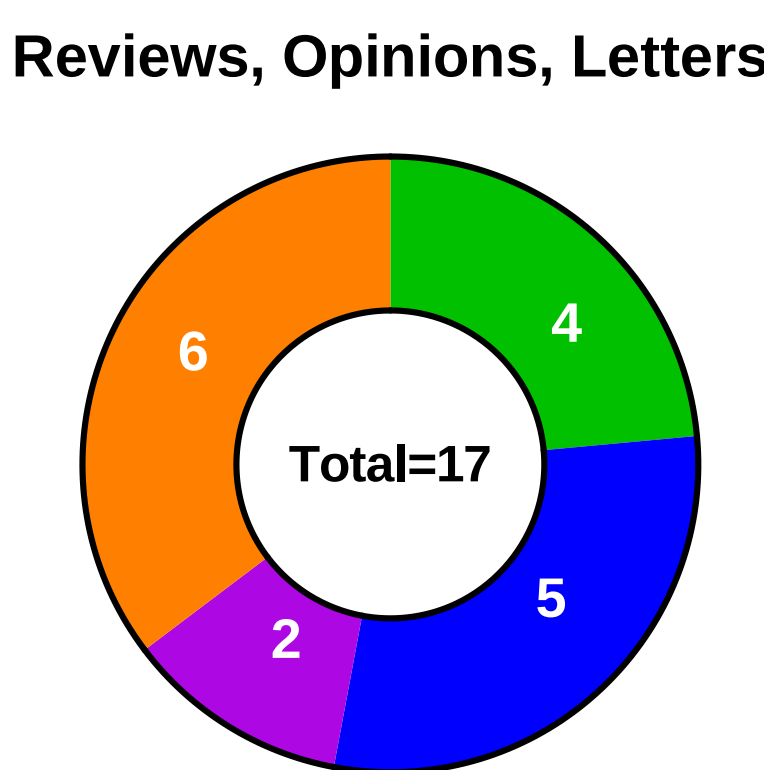
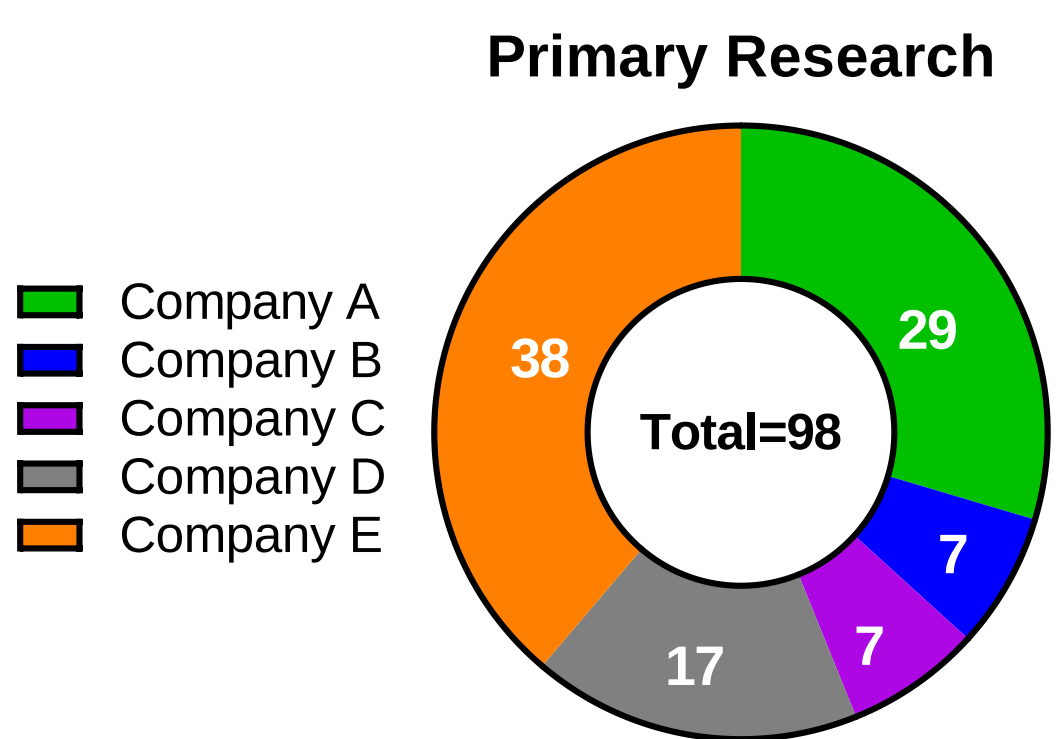
It is calculated using the formula:

$$CS(x) = \frac{\# \text{ of Citations to documents published in years } X, X - 1, \text{ and } X - 2}{\# \text{ of documents published in years } X, X - 1, \text{ and } X - 2,}$$

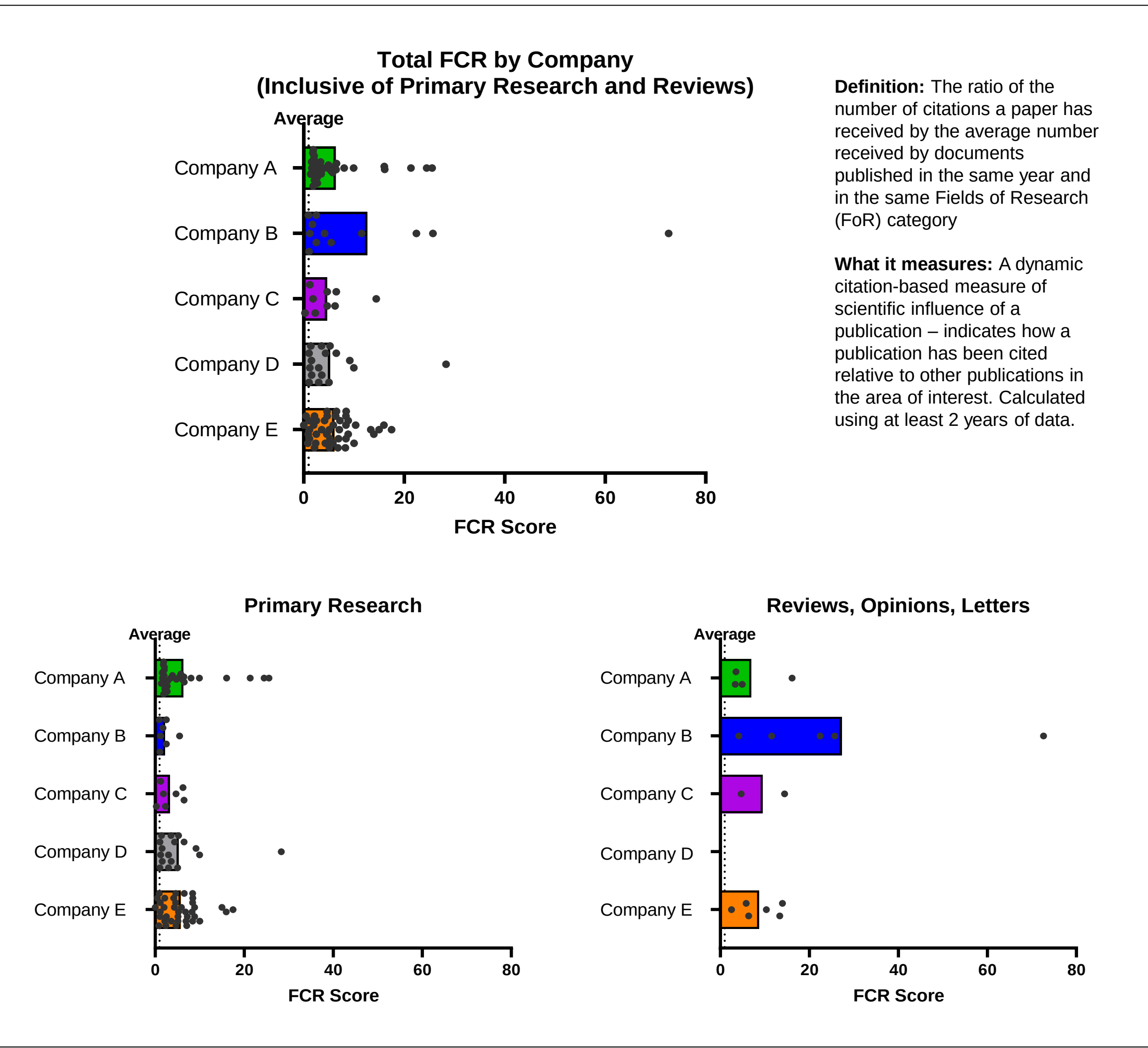
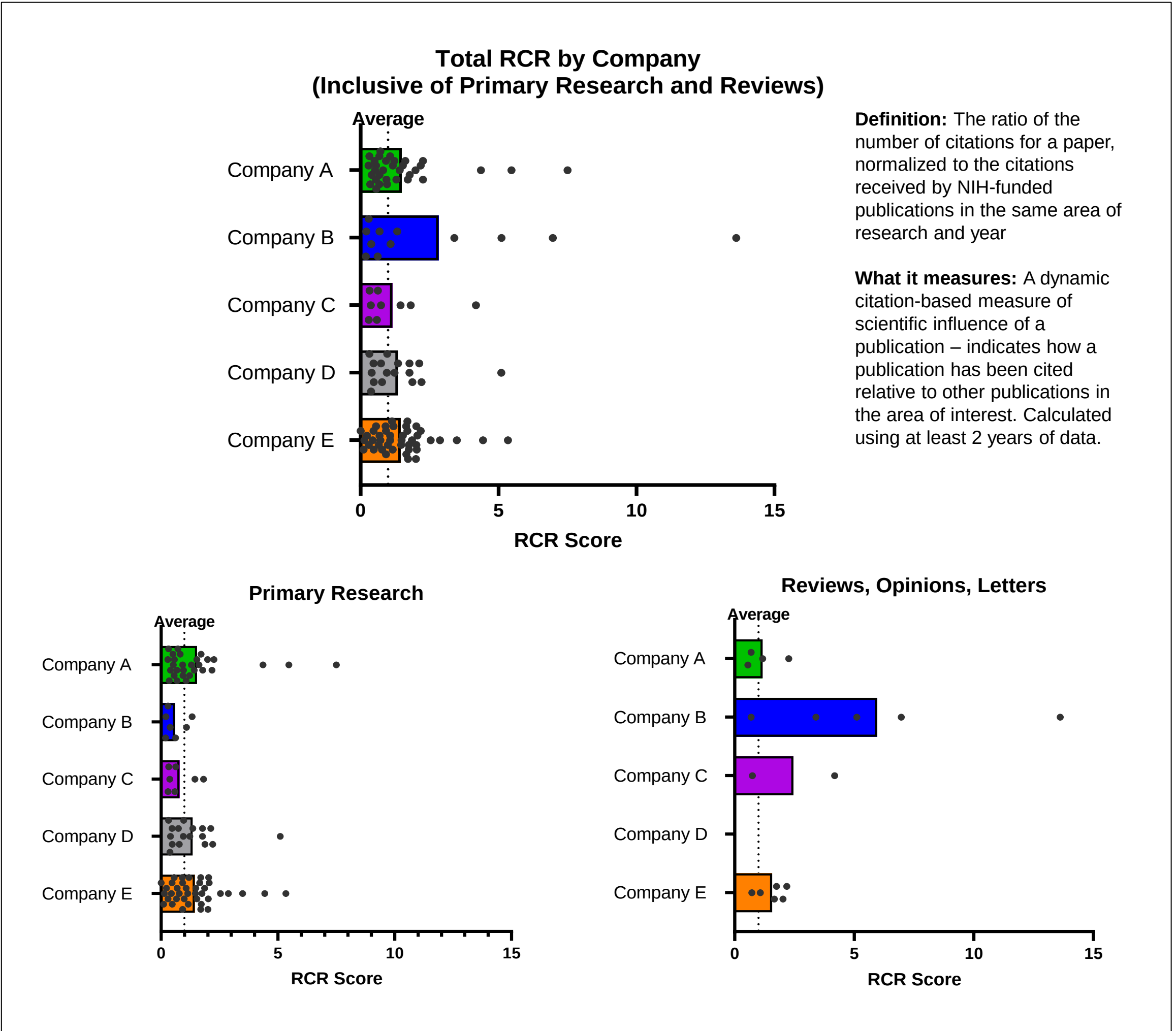
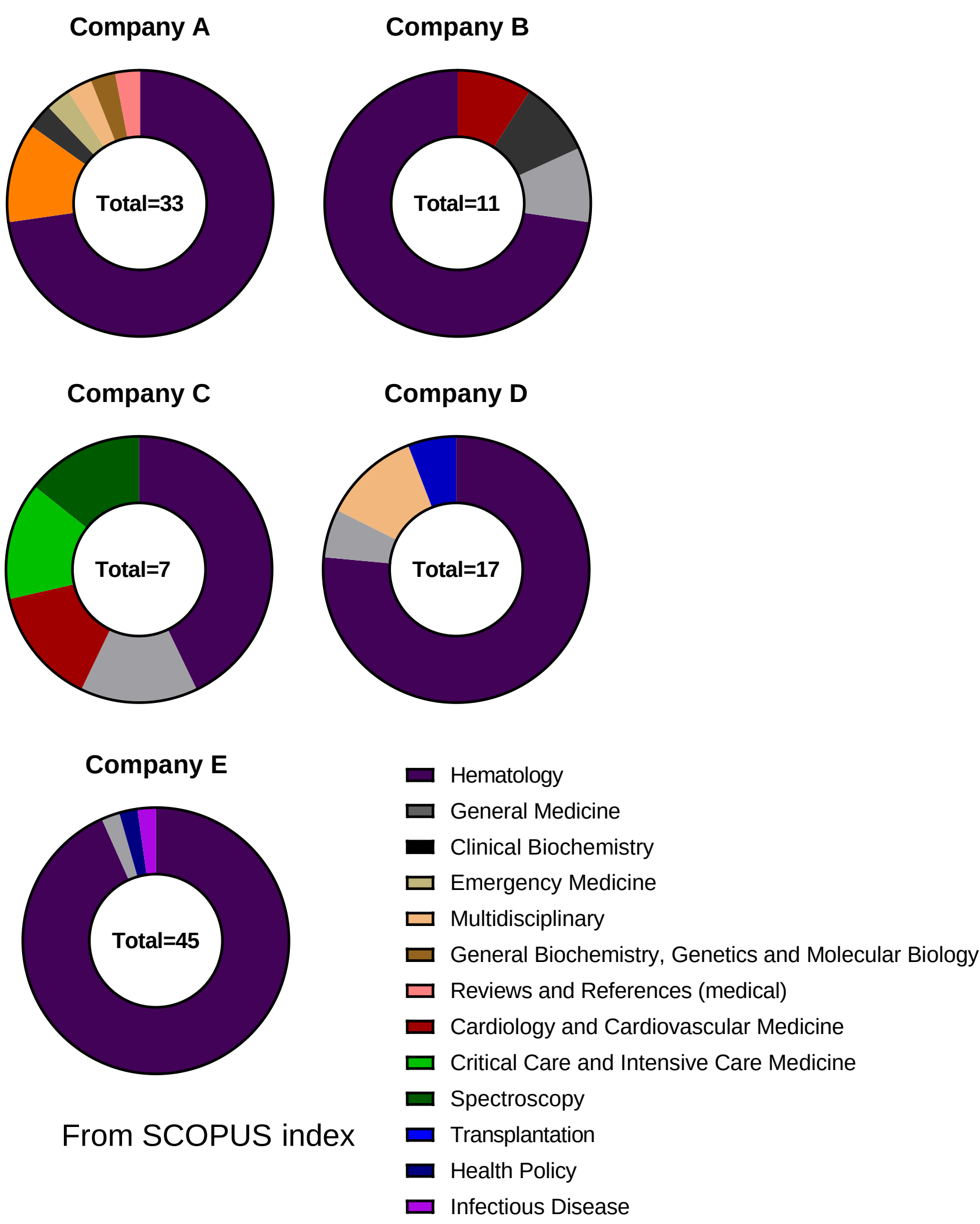
What it measures: CiteScore is a journal level measure of impact. A higher CiteScore indicates a more prestigious journal. The basis for using CiteScore as a measure of impact is that a high impact journal will be cited more often than lower impact journals.



Article Level Characteristics and Impact Metrics



Field Distribution by Company



Summary and Conclusions

- This study is limited by the small sample size of published work from each of the companies, the distribution of publication type from each company, and the potential differences in article quality related to the underlying study data.
- However, these findings suggest that companies publishing reviews and opinion pieces have a greater influence in shaping the field narrative than companies active in only primary research publications. Reviews and opinion pieces tend to be higher impact than primary research.
- These findings reinforce the need for companies to participate actively in the dialog in the field with thought leadership publications.
- Additional work is required to develop an integrated measure of impact for publications in the hematology space.