

Altmetrics for large, multidisciplinary research groups

Comparison of current tools



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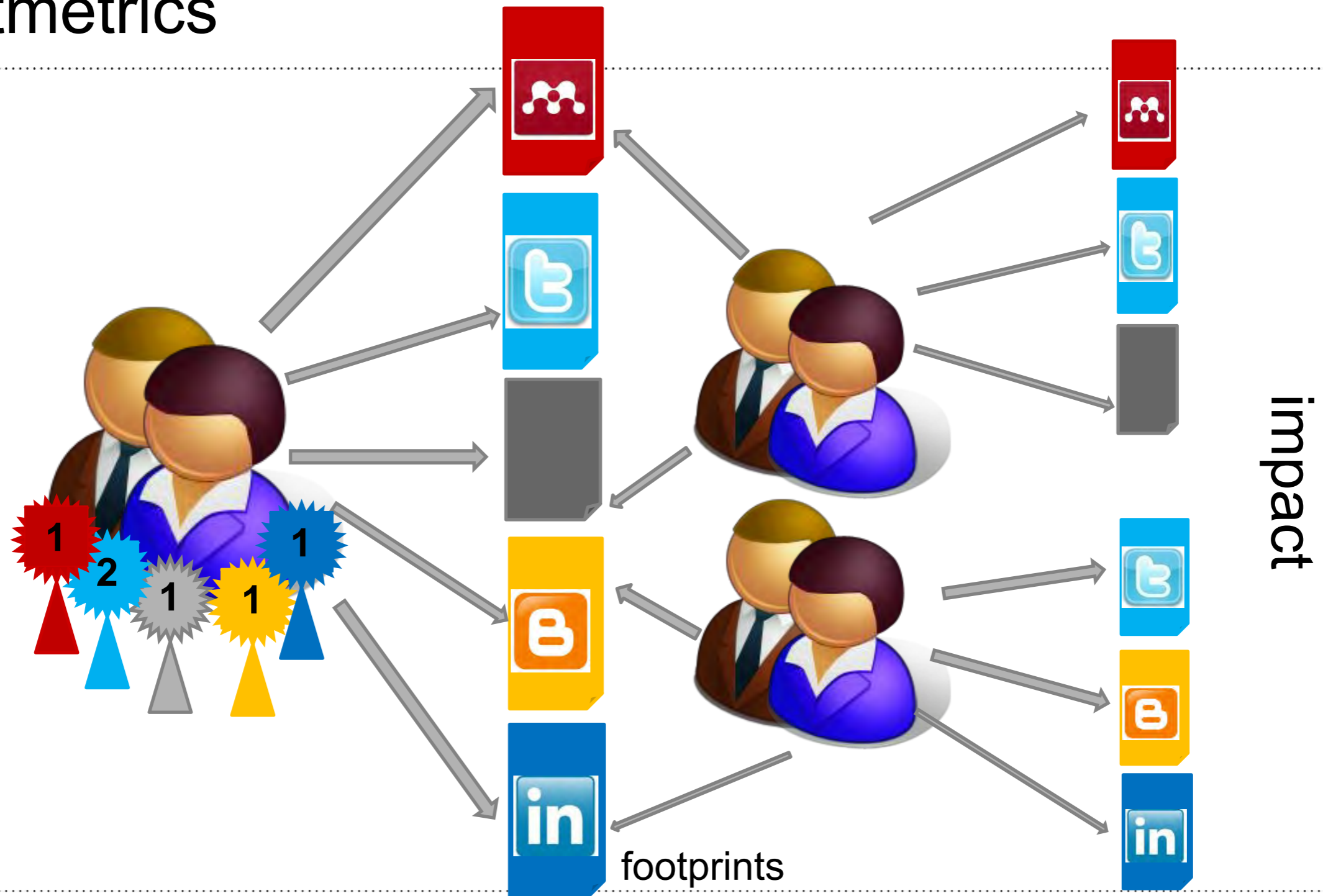
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Universität St.Gallen



Altmetrics



Motivation for study



1. Initiatives that demand for new approaches in research evaluation (e.g., DORA)
2. Leibniz Association's evaluation guidelines ask for appropriate public outreach and engagement in public discourse → how to measure?
3. Research showed significant disciplinary differences: coverage and impact (Haustein & Siebenlist, 2011; Haustein et al., 2013; Holmberg & Thelwall, 2013; Mohammadi & Thelwall, 2013)

Motivation for study



4. Appearance of several “Do-it-yourself” altmetric tools (e.g., ImpactStory)
5. Variance in data found by altmetric tools (Chamberlain, 2013; Konkiel, 2012; Peters et al., 2014; Zahedi, Fenner, & Costas, 2014)



Research Questions

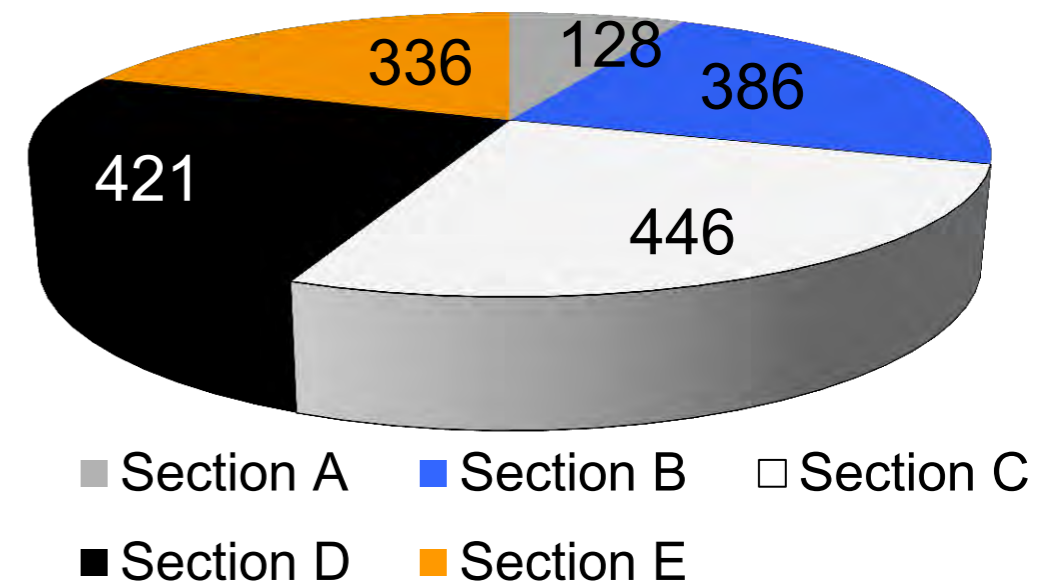
1. What challenges do we encounter when using altmetric tools?
2. What variance in altmetric data do we find?
 - Coverage: to what extent are papers found?
 - Impact: what values do metrics have?
3. Is the variance discipline-dependent?



Data

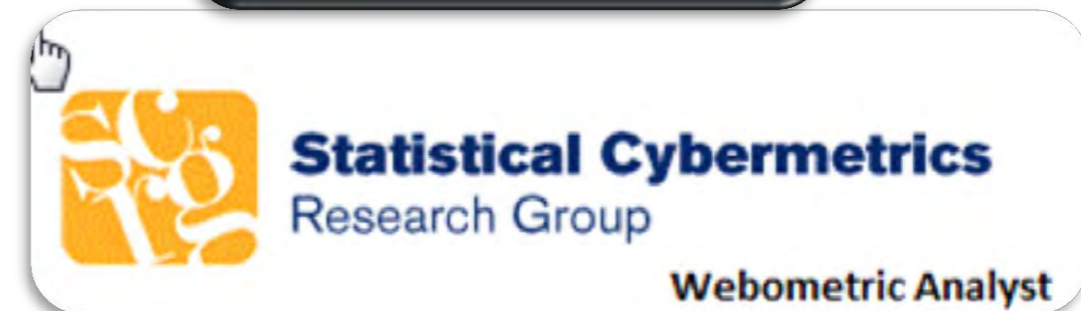
- Disciplines of the Leibniz Association
 - a. humanities and educational research
 - b. economics, social sciences, spatial research
 - c. life sciences
 - d. mathematics, natural sciences, engineering
 - e. environmental sciences
- 2-3 institutes of each discipline
- Articles in conferences/ journals and book chapters
- Publication years: 2011, 2012
- Details in Peters et al. (2014)

Articles of 12 institutes	2.834
Correct DOIs	1.717 (61%)



Methods

1. Data searched on August 8th, 2014
2. Only DOI-search
3. Tools used
 - Webometric Analyst
 - Mendeley search
 - Altmetric Explorer search
 - ImpactStory
 - Plum Analytics
 - Altmetric Explorer
4. Analysis of metrics that are found by at least two altmetric tools





Results: Research question I

What challenges do we encounter when using altmetric tools?

- Mostly identifier searches (i.e., DOI, PMID, etc.)
 - Webometric Analyst allows for textual searches
- Metrics from web interface are not available for download (e.g., Scopus citations on ImpactStory)
- Problems with delete-function in ImpactStory
- Download restrictions (e.g., 500 Mendeley requests per hour)
- Use of service must be paid (i.e., ImpactStory, Altmetric Explorer, Plum Analytics)
- Works only with Windows (i.e., Webometric Analyst)



Results: Research question II

What variance in altmetric data do we find?

- Metrics found in our data set
- Plum Analytics most detailed provider
 - Range of platforms
 - Level of detail in metrics (e.g., FB likes, shares, comments)
- Mendeley is the platform covered by all altmetric tools
- Please refer to paper for full table

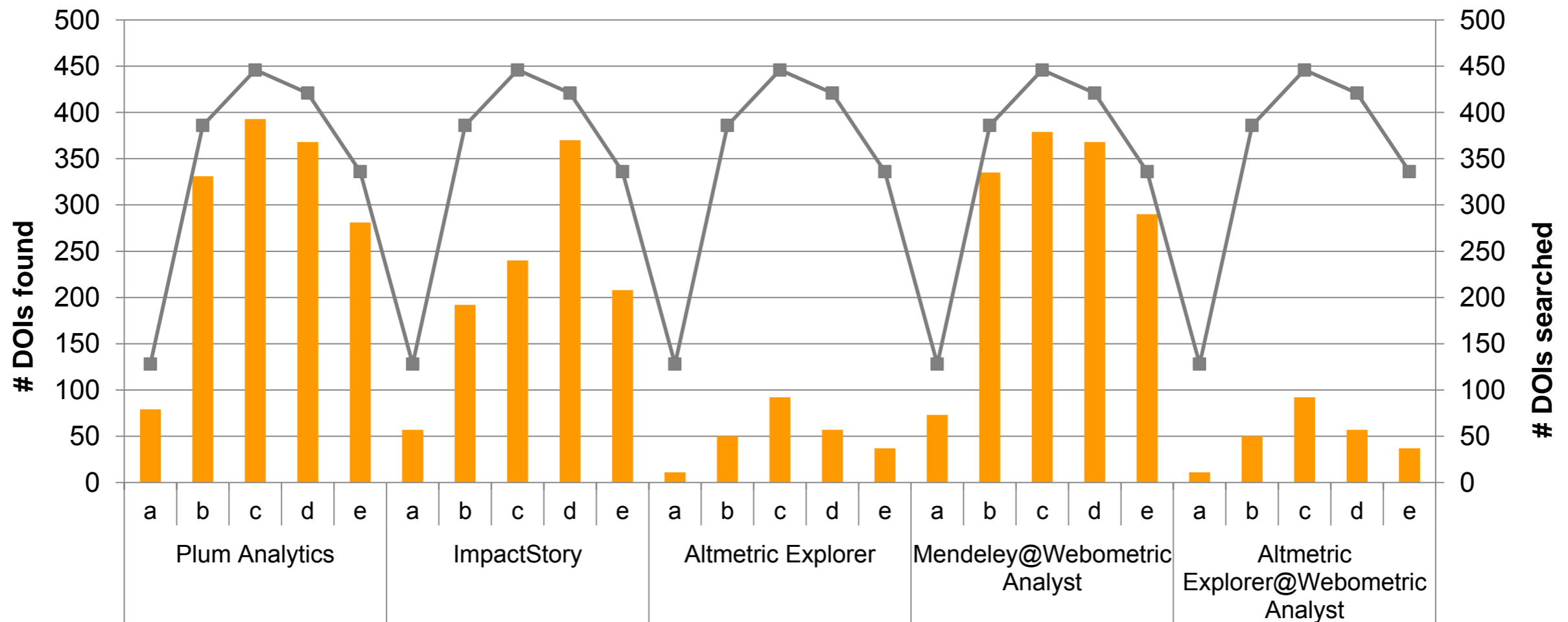
Data Source		Plum Analytics	ImpactStory	Altmetric Explorer	Mendeley@ Webometric Analyst	Altmetric Explorer@ Webometric Analyst
EBSCO	Clicks	x				
	Abstract Views	x				
	HTML Views	x				
	PDF Views	x				
	Data Views	x				
SSRN	Abstract Views	x				
	Downloads	x				
	Citations	x				
Scopus	Citations	x				
PLOS	HTML Views	x	x			
	PDF Views	x	x			
Mendeley	Groups	x				
	Readers	x	x	x	x	x
PubMed Central	HTML Views	x				
	PDF Views	x				
	Citations	x	x			
CrossRef	Citations	x				
Peer review Sites (e.g., F1000)	Reviews			x		x
CiteULike	Readers			x		x
Delicious	Bookmarks	x	x			
Reddit	Scores	x		x		x
	Comments	x				
Facebook	Likes	x				
	Comments	x				
	Shares (wall posts)	x	x	x		x
Twitter	Tweets	x	x	x		x
Google+	"+1s"/Shares		x	x		x
Wikipedia	Links	x				
	Mentions		x			



Results: Research questions II+III

What variance in altmetric data do we find?

- **Coverage of DOIs found via altmetric tools: Mendeley (n=1,717)**

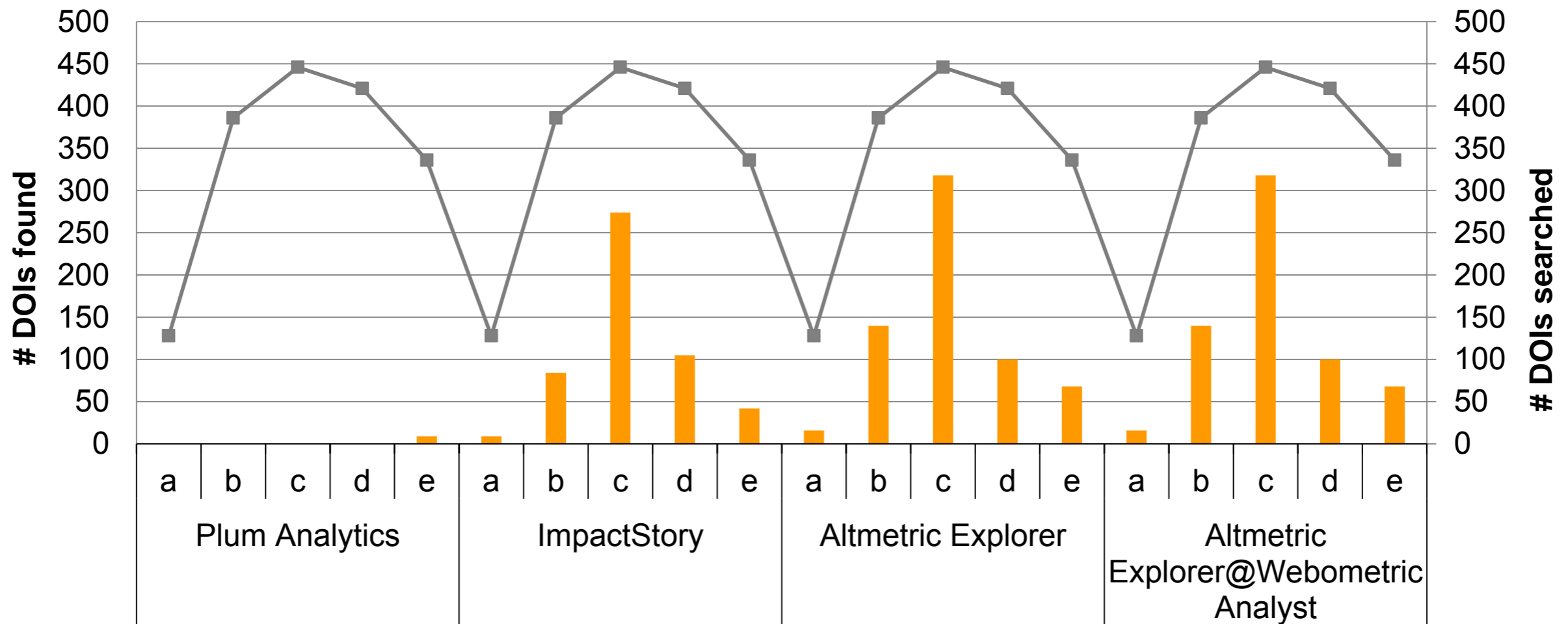




Results: Research questions II+III

What variance in altmetric data do we find?

- **Coverage of DOIs found via altmetric tools: Twitter (n=1,717)**

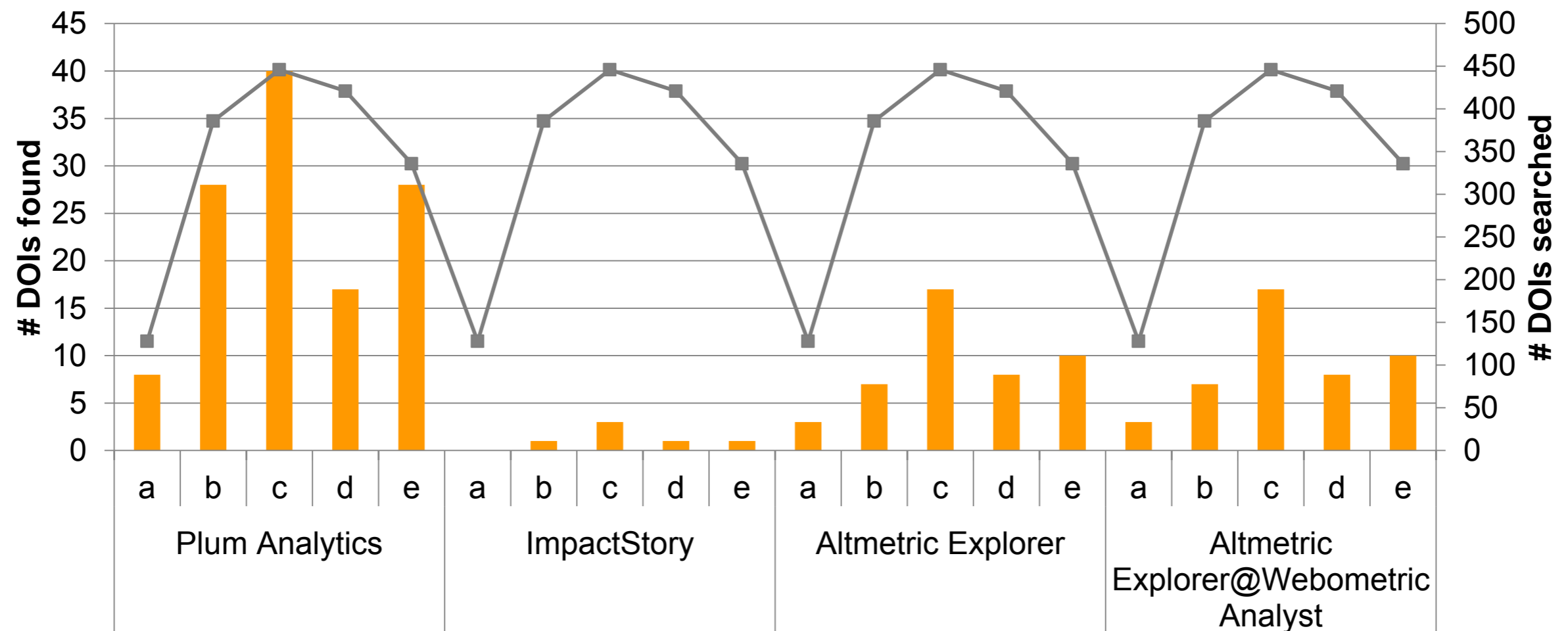




Results: Research questions II+III

What variance in altmetric data do we find?

- **Coverage of DOIs found via altmetric tools: Facebook (n=1,717)**

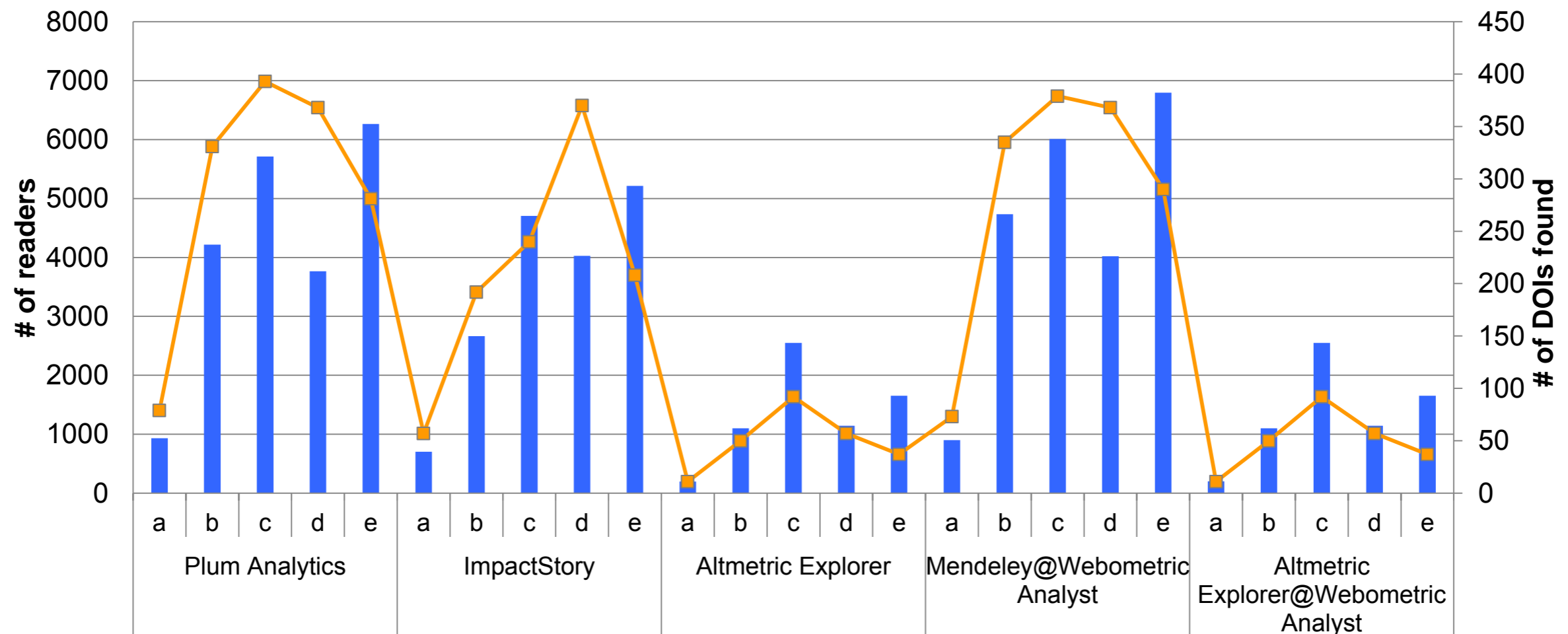




Results: Research questions II+III

What variance in altmetric data do we find?

- **Impact** of DOIs found via altmetric tools: **Mendeley**

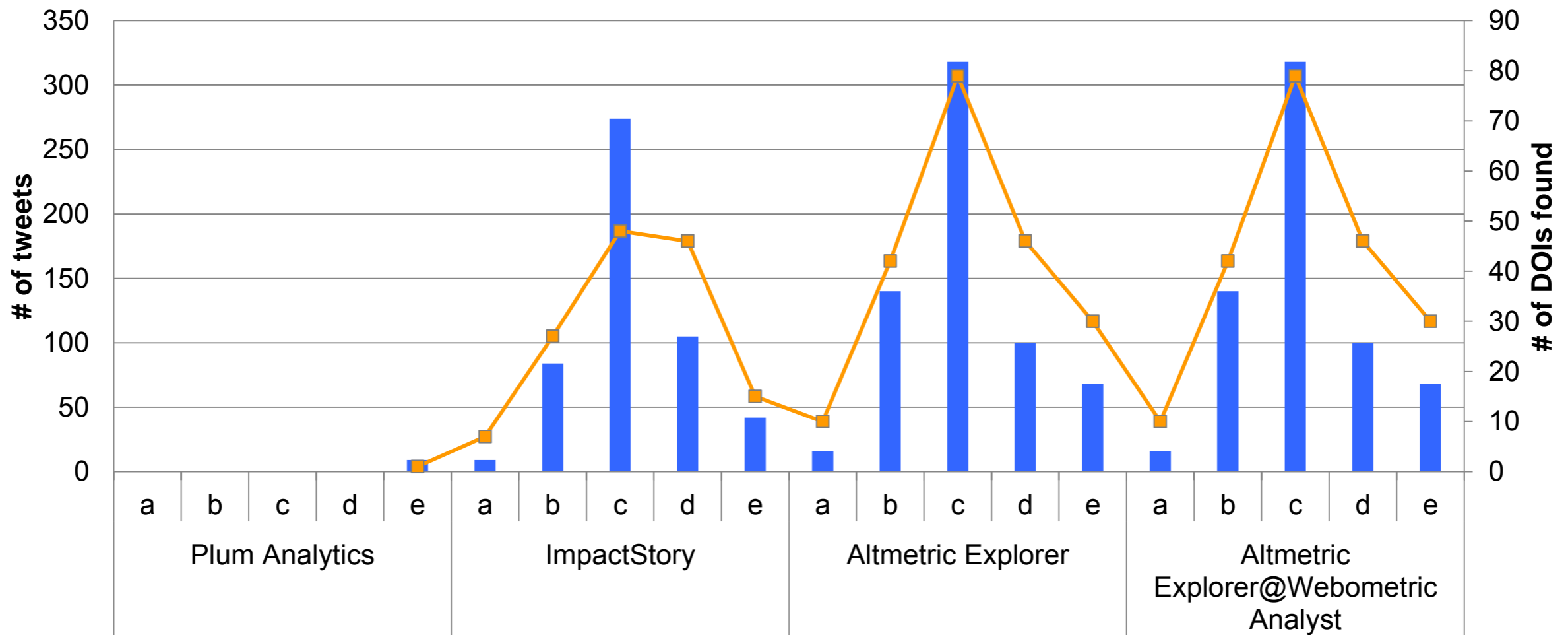




Results: Research questions II+III

What variance in altmetric data do we find?

- **Impact** of DOIs found via altmetric tools: **Twitter**

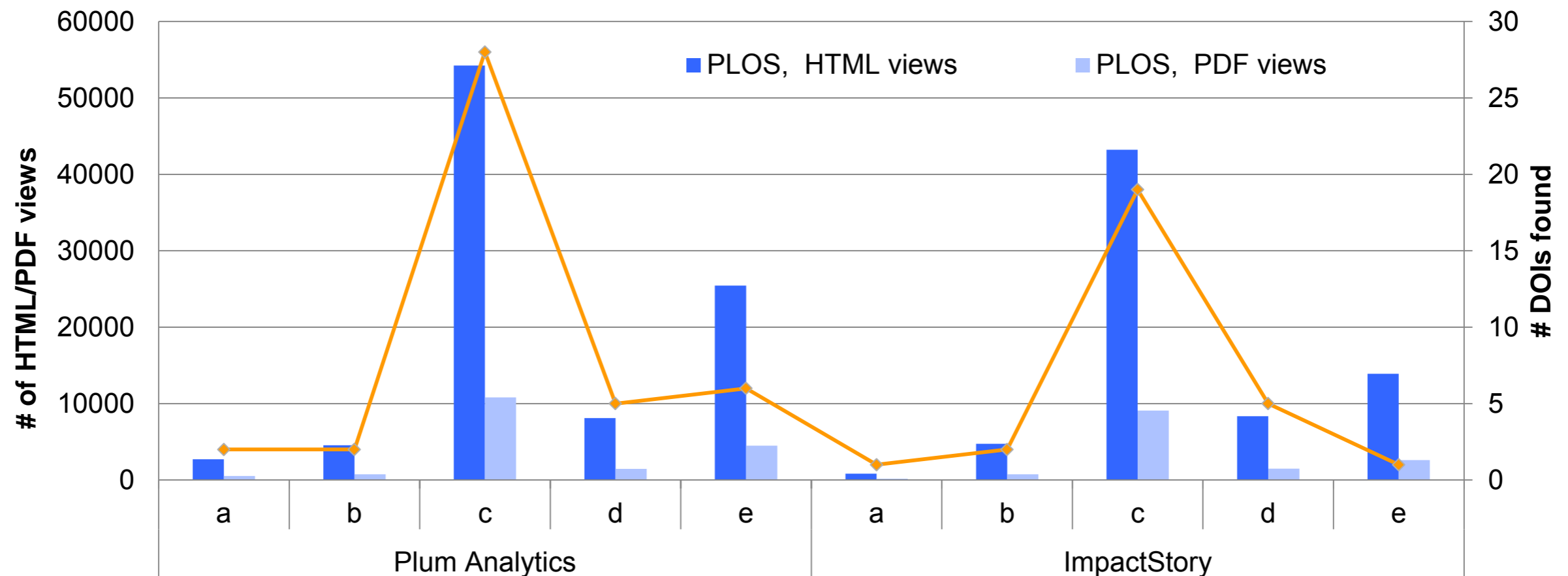




Results: Research questions II+III

What variance in altmetric data do we find?

- **Impact** of DOIs found via altmetric tools: **PLOS Views: HTML, PDF**

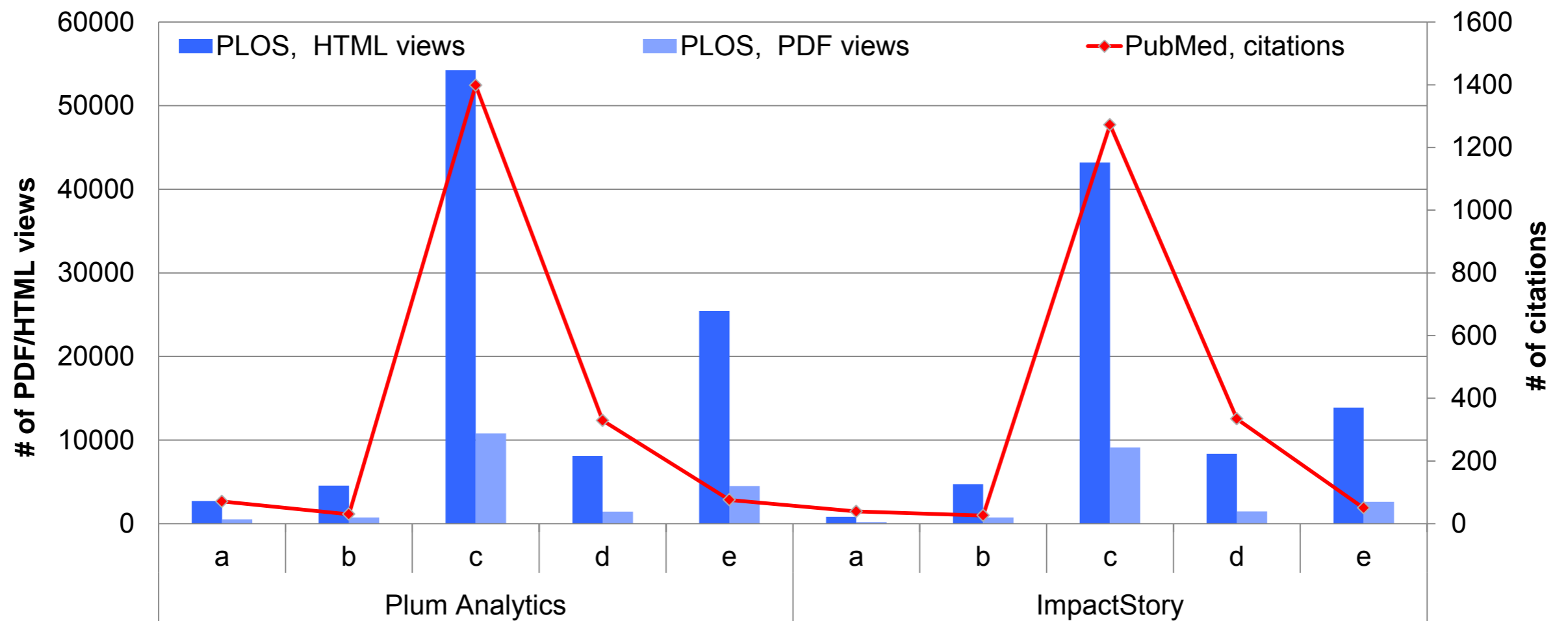




Results: Research questions II+III

What variance in altmetric data do we find?

- Impact of DOIs found via altmetric tools: **PLOS Views HTML, PDF, PubMed citations**





Lessons Learned

- Coverage and impact vary across altmetric data providers
- No one-stop solution available
 - Tools have discipline- and platform-specific strengths and weaknesses
 - Altmetric Explorer: worst for Mendeley readership information, but best in retrieving Twitter tweets
 - Plum Analytics: best for Mendeley and Facebook, and most detailed metrics
 - Choose tool according to research question
- Life Sciences and Environmental Sciences are covered best across social media platforms and show highest impact values
- Mendeley is the platform which covers a substantial amount of papers (coverage) and shows reasonable user activity (impact)

→ Variance in impact values: which tool to trust?

Thank you!

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Reasons

- Need to know how data providers collect altmetric information
- Mendeley: clusters user libraries
- Altmetric Explorer: tracks articles through RSS feeds (e.g., from blogs)
- Data providers use different...
 - identifiers (e.g., DOI, arXiv-id, PubMed-id, Mendeley UUID) and URLs for articles
 - APIs (Firehose, REST, Streaming, etc.) or other services (e.g., Topsy)
 - Metrics (e.g., all FB posts vs. just public FB posts)
- No real-time update between data providers and social media platform
- Access restrictions on social media platform (e.g., 30 days for Twitter)

- Via Zahedi, Fenner, & Costas (2014), Chamberlain (2013)