Evaluating altmetrics acts through their creators — how to advance?

Steffen Lemke, Maryam Mehrazar, Isabella Peters, Athanasios Mazarakis

*metrics*

Altmetrics17 Workshop — The Dependencies of Altmetrics
Toronto, 26th September 2017
Altmetrics’ diversity, a double-edged sword
Altmetrics’ differing premises

Types of Platforms

Types of Actions

Intentions

Degrees of Involvement¹

Actors

*metrics Survey on Social Media Usage by Researchers

- Online survey, running for six weeks over March-May 2017
- 3,400 respondents, emphases on economists (60%) and social scientists (22%)
- 13-20 questions about professional usage of 90 social media services
- Participants from 84 countries

Countries of current (or last) affiliation of the survey’s participants
# Usage Frequency of Actions

<table>
<thead>
<tr>
<th>Action</th>
<th>Several times a day</th>
<th>About once a day</th>
<th>Several times a week</th>
<th>About once a week</th>
<th>About once a month</th>
<th>Less often</th>
<th>Never</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>post about academic research on Facebook</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>send a tweet about academic research</td>
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<tr>
<td>write a post about academic research on LinkedIn</td>
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<tr>
<td>write a post about academic research on Google+</td>
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<tr>
<td>review academic research on F1000Research</td>
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<tr>
<td>write a post about academic research on Reddit</td>
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<tr>
<td>write a post about academic research on StackOverflow</td>
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<tr>
<td>review academic research on Amazon</td>
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</tbody>
</table>
Usage of Actions: Differences in Frequency

- Welch test - comparison between early-stage researchers and professors: from 107 actions, 30 are used with significantly different frequencies

Early-stage researchers (n = 1,010):
- Downloading
- Bookmarking

Professors (n = 1,419):
- Writing
- Facebook
- Twitter
A possible implication, based on the previous slide:

- Counted occurrences of an action that is more frequently performed by professors than by early-stage researchers better reflect the respective article’s impact upon more experienced researchers.

A metric’s meaning is shaped by who performed the action leading to its occurrence.
Usage of Actions:
Correlations “Frequency - #recent publications”

- Actions that correlate positively and significantly with the number of traditional publications during the last 5 years:

<table>
<thead>
<tr>
<th>Action</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cite academic research on Wikipedia</td>
<td>0.12***</td>
</tr>
<tr>
<td>Comment on a post about academic research on Facebook</td>
<td>0.21***</td>
</tr>
<tr>
<td>Comment on a post about academic research on Google+</td>
<td>0.17**</td>
</tr>
<tr>
<td>Comment on a post about academic research on LinkedIn</td>
<td>0.14***</td>
</tr>
<tr>
<td>Comment on a post about academic research on wordpress</td>
<td>0.14**</td>
</tr>
<tr>
<td>Comment on a scientific video on Vimeo</td>
<td>0.23*</td>
</tr>
<tr>
<td>Comment on an article on PLoS</td>
<td>0.16**</td>
</tr>
<tr>
<td>Dislike a scientific video on Youtube</td>
<td>0.11***</td>
</tr>
<tr>
<td>Favor a tweet about academic research</td>
<td>0.17***</td>
</tr>
<tr>
<td>Like a post about academic research on Facebook</td>
<td>0.12**</td>
</tr>
<tr>
<td>Subscribe to a research(er’s) channel on Youtube</td>
<td>0.21*</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.01; *** p < 0.001

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<thead>
<tr>
<th>Action</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reply to a tweet about academic research</td>
<td>0.18**</td>
</tr>
<tr>
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<td>0.19**</td>
</tr>
<tr>
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</tr>
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<td>0.22**</td>
</tr>
<tr>
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<td>0.19**</td>
</tr>
<tr>
<td>Write a post about academic research on Google+</td>
<td>0.26**</td>
</tr>
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Questions to Discuss

• What do you think – is weighting altmetrics based on their originators a desirable approach at all?

• If so, what might be meaningful platform-related factors to base different “classes” of altmetrics upon?
  - Relative share of users with scientific background
  - Coverage of a certain discipline
  - Users’ average degree of scientific experience
  - Users’ average productivity by bibliometrical means
  - Geographical aspects
  - …
Thank you! Any questions?

- **Web:** metrics-project.net
- **Email:** s.lemke@zbw.eu, m.mehrazar@zbw.eu
- **Twitter:** @metrics_project
- **Facebook:** metricsproject
Usage of Actions: Facebook

- post about academic research
- like a post about academic research
- share a post about academic research
- comment on a post about academic research
Usage of Actions: Differences in Frequency (Welch test)

- Actions that are used significantly more frequently by...
  - **early-stage researchers:**
    - Download a publication from ResearchGate
    - Download a repository from GitHub
    - Download a sample from EBSCO
    - Download an article from Academia.edu
    - Download an article from arXiv
    - Download an article from EconStor
    - Download an article from JSTOR
    - Download an article from MPRA
    - Download an article from PLoS
    - Download an article from PubMed Central
    - Download an article from RePEc
    - Download an article from SSRN
    - Export/save a sample on EBSCO
    - Save a bookmark on Citavi
    - Save a bookmark on JSTOR
    - Save a bookmark on Mendeley
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  - **professors:**
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