



TWEET OR PUBLISH?

AN ANALYSIS OF PUBLISHING & TWEETING BEHAVIOR

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WHY INVESTIGATE SCHOLARLY ACTIVITY IN SOCIAL MEDIA ?

- New technology allows for reassessment and reevaluation of academia (Baldwin, 1998)
- Social media use provides insight into customs and traditions (Greenhow, 2009)
- Social media use unveiling once invisible backstage activity (Priem, 2014)



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HAVE WE MOVED “BEYOND BIBLIOMETRICS”?

- We’ve moved beyond simply measuring citations (Cronin & Sugimoto, 2014).
- New tools and data allow for new kinds of metrics measuring wide array of indicators (Cronin, 2014)
- Electronic publishing magnifies a scholar’s awareness of own performance (Wouters, 2014)
- Evaluation of bibliometric indicators by novices allows for wide use of various ad hoc indicators (Gingras, 2014)



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WHY CONSIDER “ALTMETRICS” OR “INFLUMETRICS” OR SIMPLY “SOCIAL MEDIA METRICS”?

- “Altmetrics” is the measure of scholarly communication and dissemination within social media contexts (Priem & Hemminger, 2010; Priem, Taraborelli, Groth & Neylon, 2010)
- Perhaps a better term is Influmetrics (Rousseau & Ye, 2013) or simply “social media metrics”?
- Social media indicators may measure immediate assessment of academic impact and social impact (Thelwall, Haustein, Larivière & Sugimoto, 2013)
- “Products,” not “publications” (Piwowar, 2013)



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DO SCHOLARS USE TWITTER?

- 92% of Semantic Web scholars had Twitter account and rated it as favorite for spreading scientific information (Letierce, Passant, Decker, & Breslin, 2010)
- Total of 367 scholars reported increasing acceptance for blogs and microblogs for consumption and dissemination of scientific information (Gruzd, Goertzen, & Mai, 2012)
- Scholars' tweets tend to share information about (a) professional discussions, (b) network with others, (c) offer help / request help, (d) call attention to other social media involvement, and (e) personal discussions, and (f) impression management (Veletsianos, 2012)



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DO SCHOLARS USE TWITTER? (CONT.)

- 43% scholars at 2012 STI Conference using Twitter; it was used privately and professionally, to distribute professional information, and to improve visibility (Haustein et al., 2013)
- 80% DH scholars ranked Twitter as relevant for consumption and 73% for dissemination of DH information (Bowman et al., 2013)
- Differences by discipline found regarding the way scholars used Twitter (Holmberg & Thelwall, 2014)



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RESEARCH QUESTIONS

1. What differences exist between the tweeting behavior of scholars in the natural and social sciences?
2. What kind of relationships exists between tweeting and publication behavior?
3. How does Twitter affordance use differ across disciplines?



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WHAT DATA IS IN THIS SAMPLE?

- 16,862 Associate, Assistant, and Full professors from webpages at 62 AAU-member universities
- The faculty belonged to either Physics, Biology, Chemistry, Computer Science, Philosophy, English, Sociology, or Anthropology departments.
- 60 of the 62 universities rank in the top 125 according to 2014 CWTS Leiden Ranking
- Survey sent January and February 2014 with a response rate of 8.5% (1,910 responses)
- Of these responders, 32% (615) reported having at least one Twitter account
- 289,934 tweets of 585,879 from 445 accounts (391 scholars) were collected.



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HOW WAS THE DATA COLLECTED?

- Twitter API, Local WoS Database, Manual cleaning of authors
- Twitter:
 - tweets, # of tweets, followers, friends, retweets, created date
 - affordances: @mention, #hashtag, URLs, media, symbols, retweets
- WoS
 - publications, citation averages



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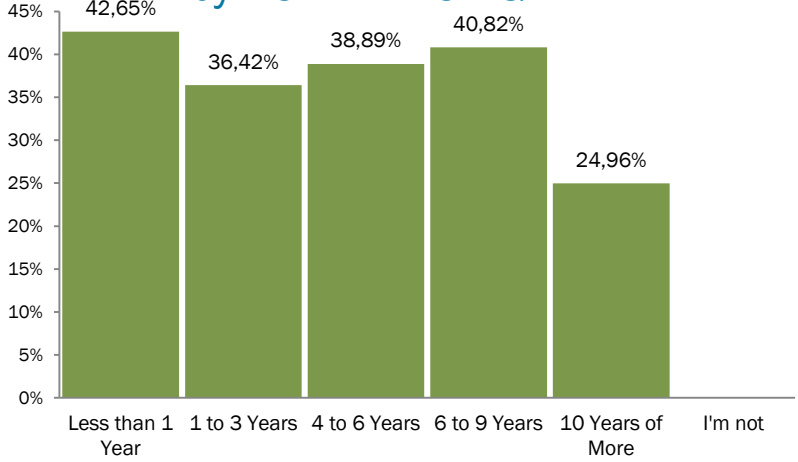
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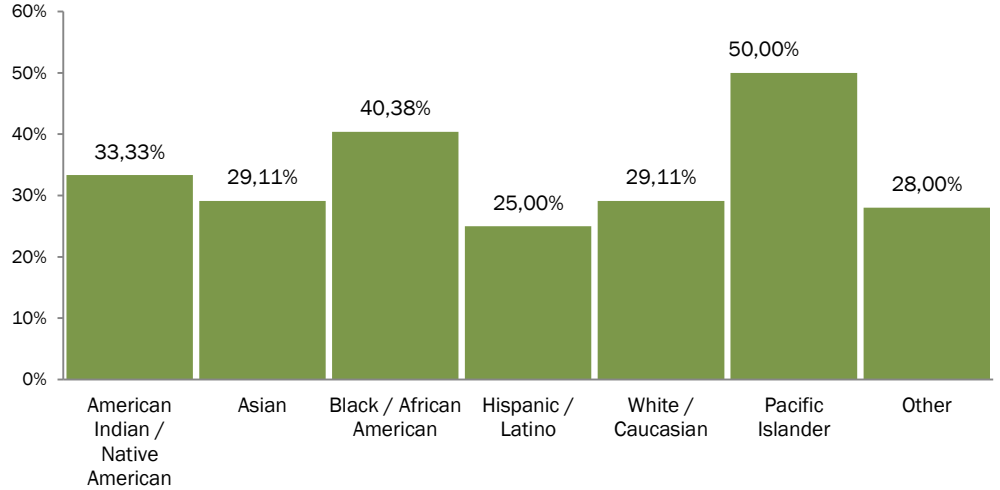
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ALL 1,910 SURVEY RESPONDENTS :: HAVE TWITTER ACCOUNTS?

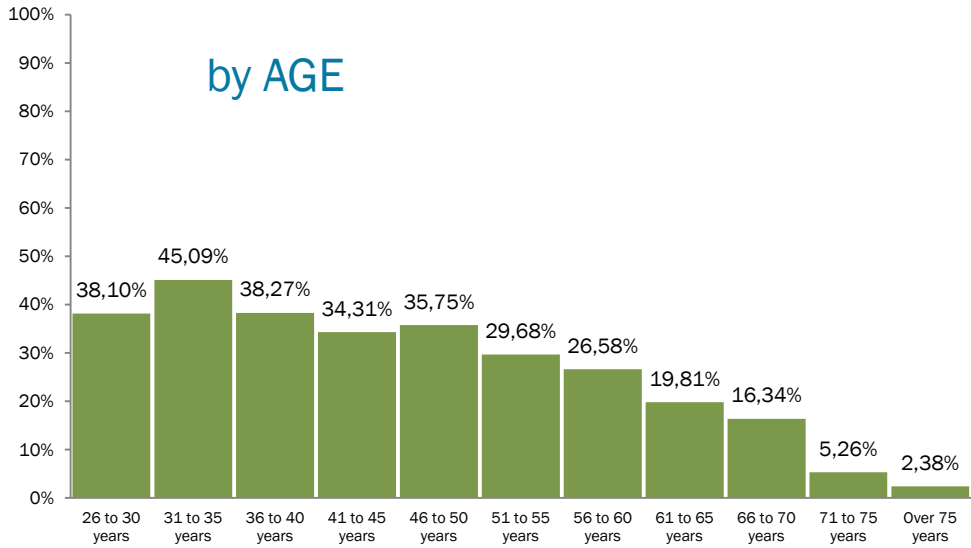
by ACADEMIC AGE



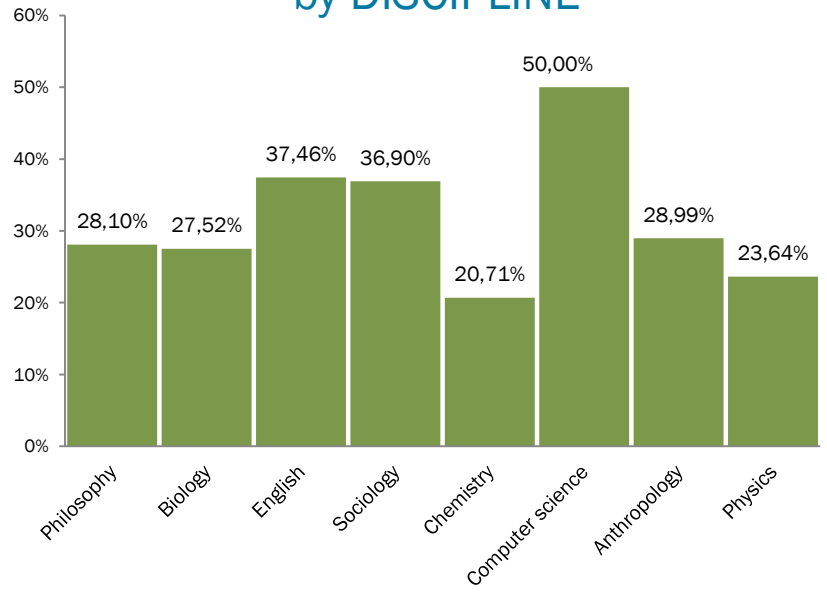
by ETHNICITY



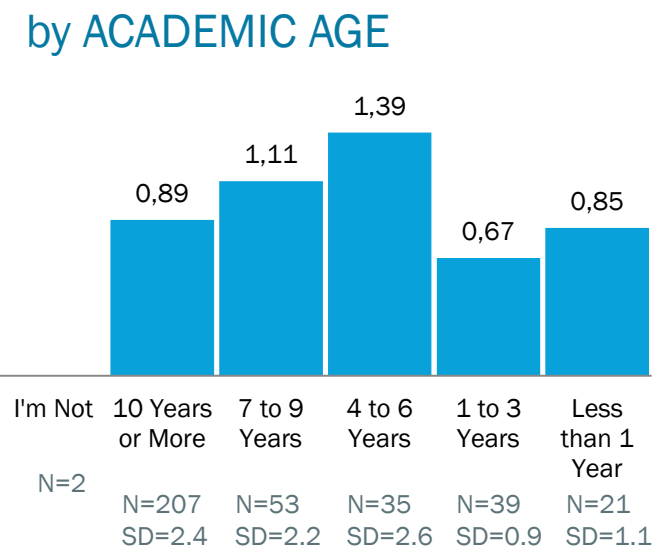
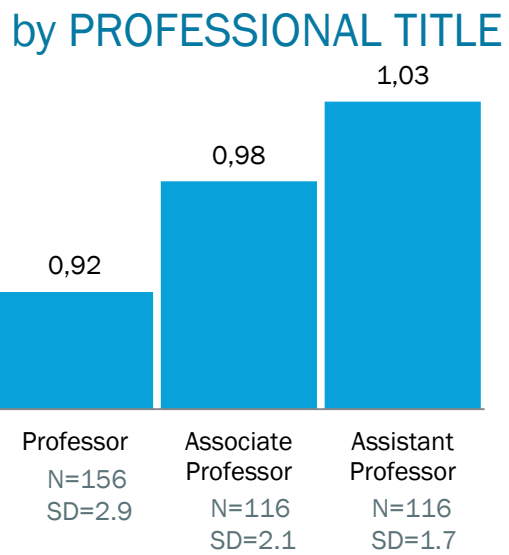
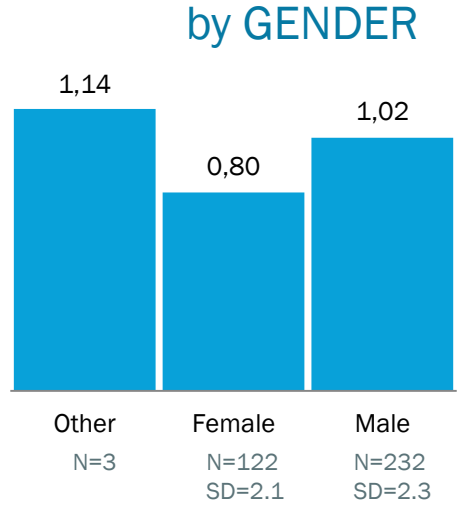
by AGE



by DISCIPLINE



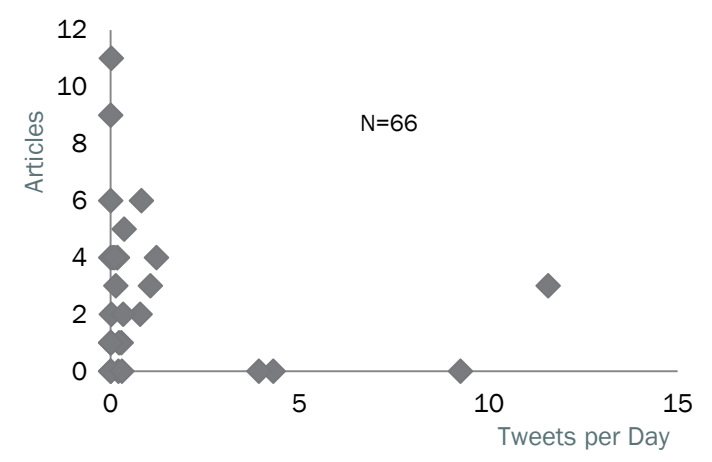
ONLY 391 SCHOLARS WITH TWITTER ACCOUNTS :: MEAN OF TWEETS PER DAY



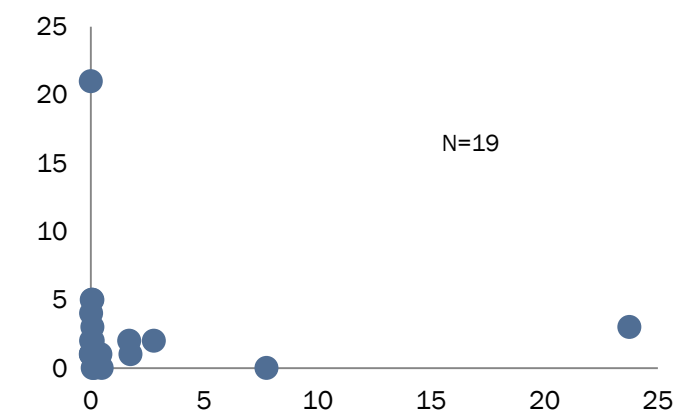
BY DISCIPLINE :: RELATIONSHIP OF MEAN TWEETS PER DAY TO # OF ARTICLES



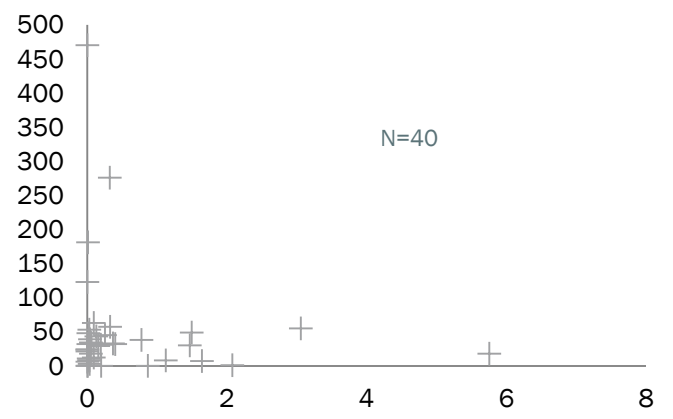
Anthropology



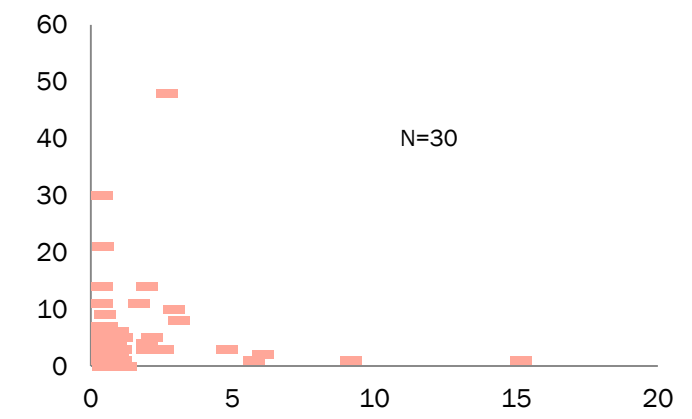
Philosophy



Physics



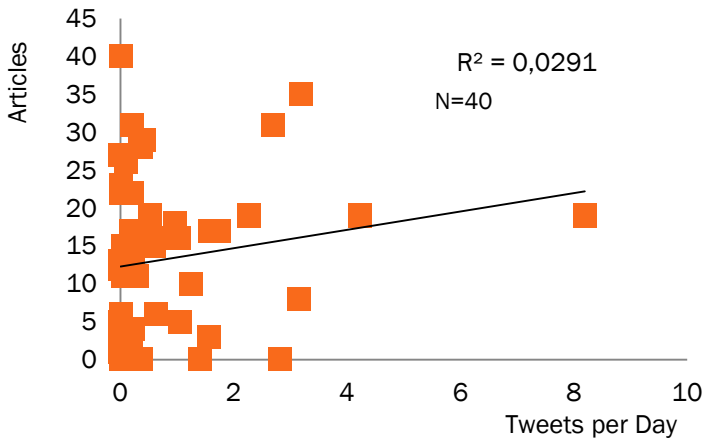
Sociology



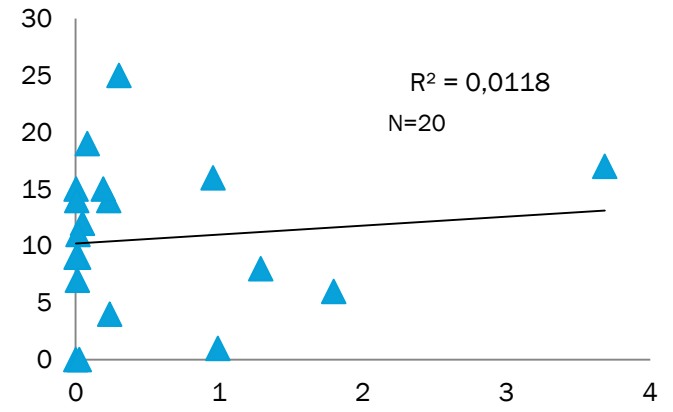
BY DISCIPLINE :: RELATIONSHIP OF MEAN TWEETS PER DAY TO ARTICLES (CONT.)



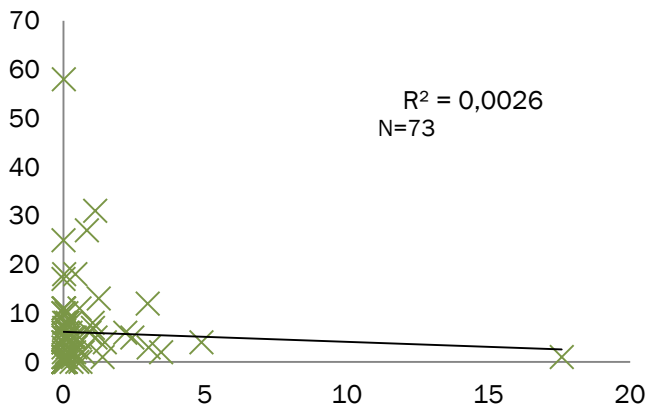
Biology



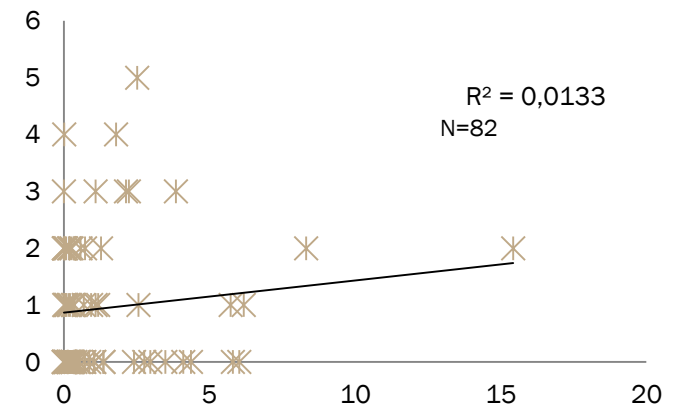
Chemistry



Computer Science



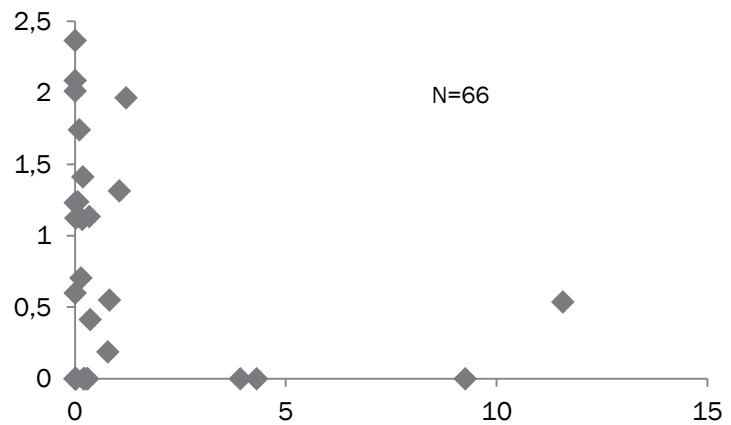
English



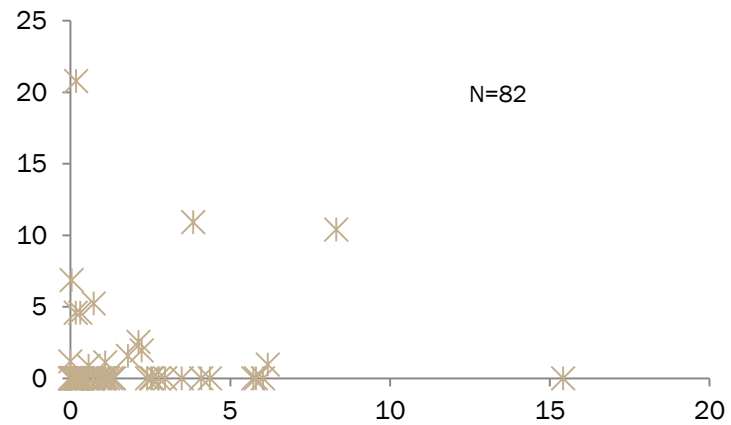
SCHOLARLY IMPACT? :: MEAN TWEETS PER DAY BY MEAN OF IAC AVERAGE



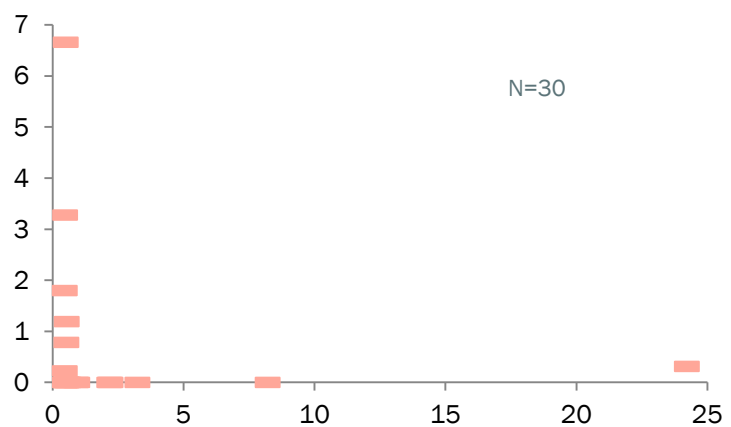
Anthropology



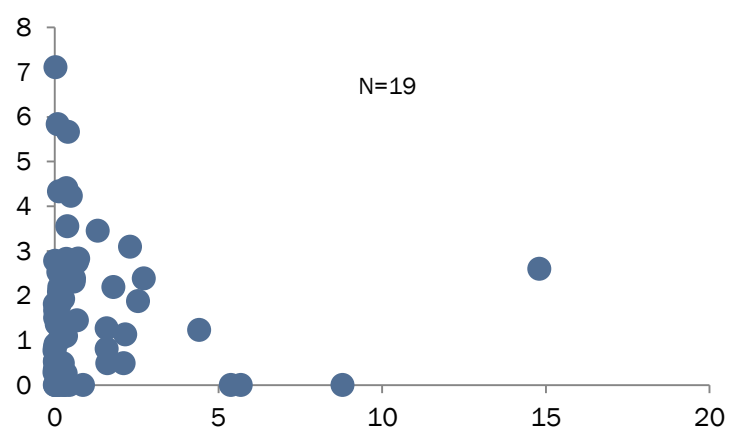
English



Philosophy



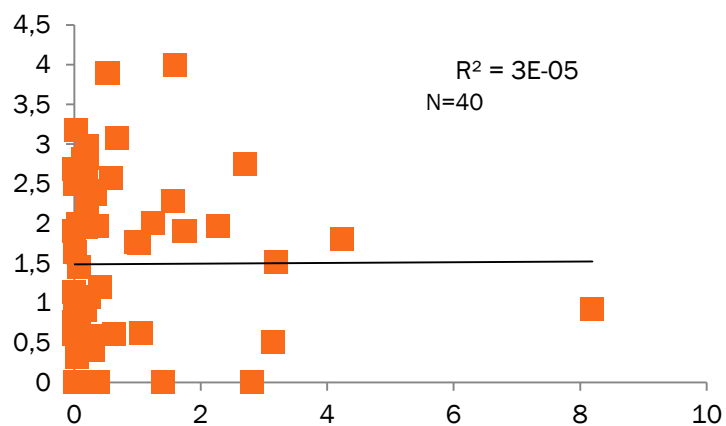
Sociology



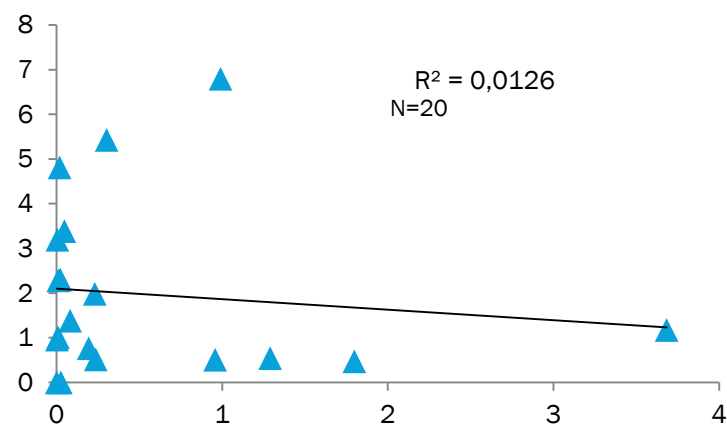
SCHOLARLY IMPACT? :: MEAN TWEETS PER DAY BY SUM OF IAC AVERAGE



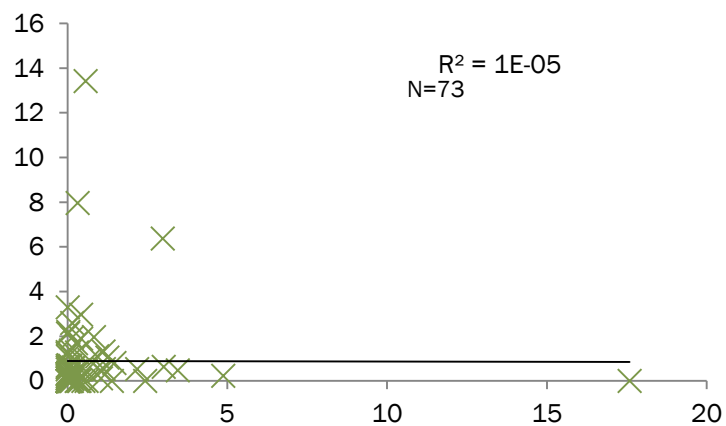
Biology



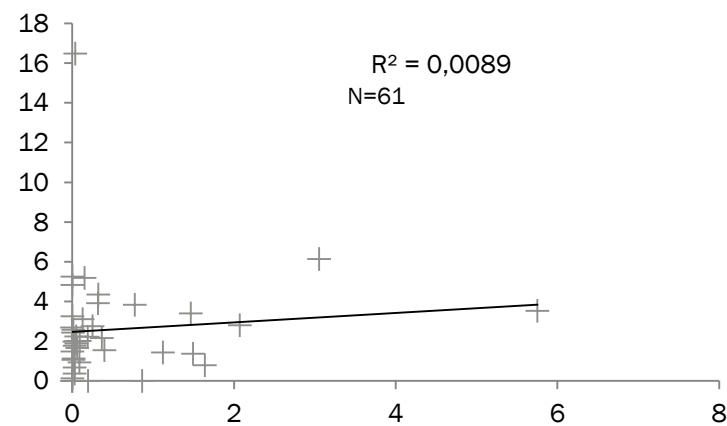
Chemistry



Computer Science



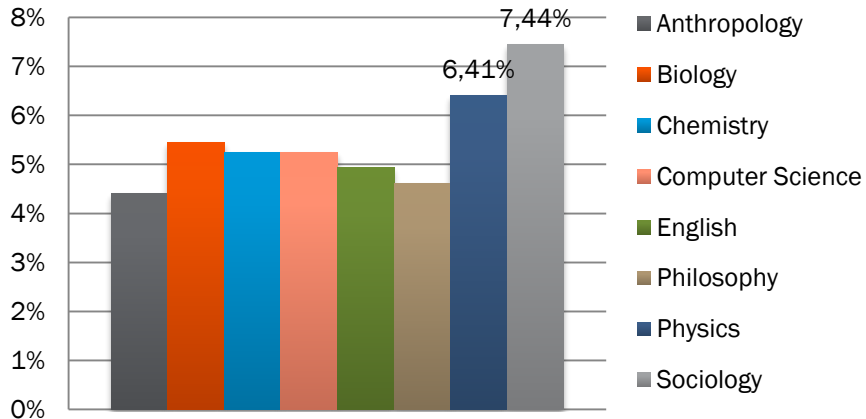
Physics



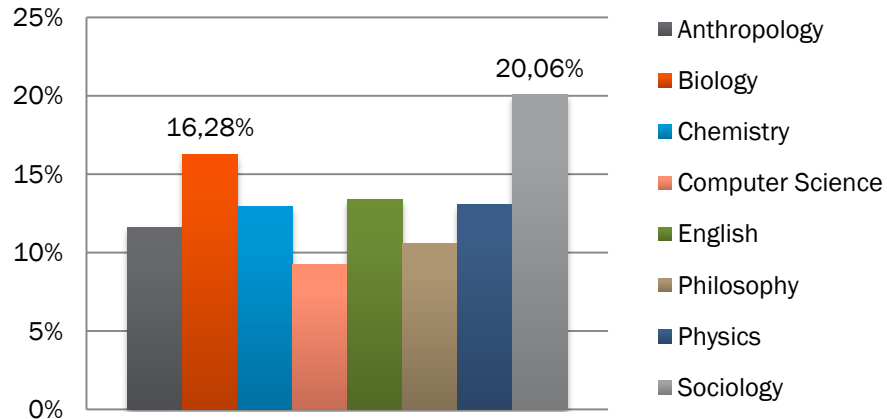
MEAN PERCENTAGE OF TWEETS WITH AFFORDANCE PER PERSON BY DEPARTMENT AND MEAN OF REWTEETS BY COLLECTED TWEETS



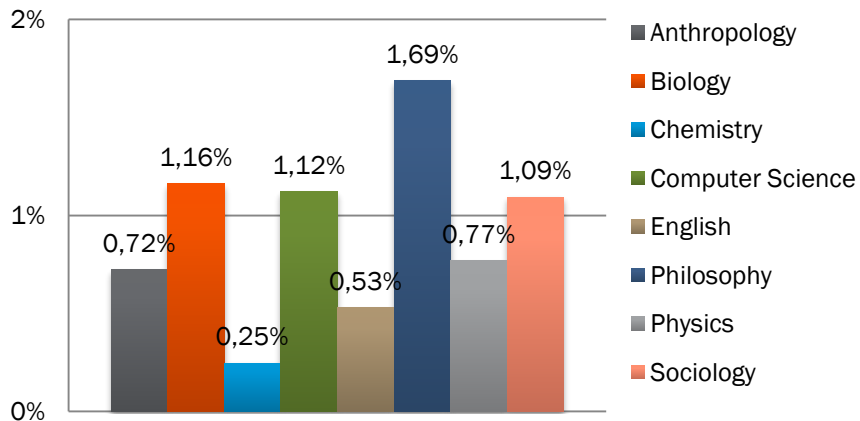
HASHTAGS



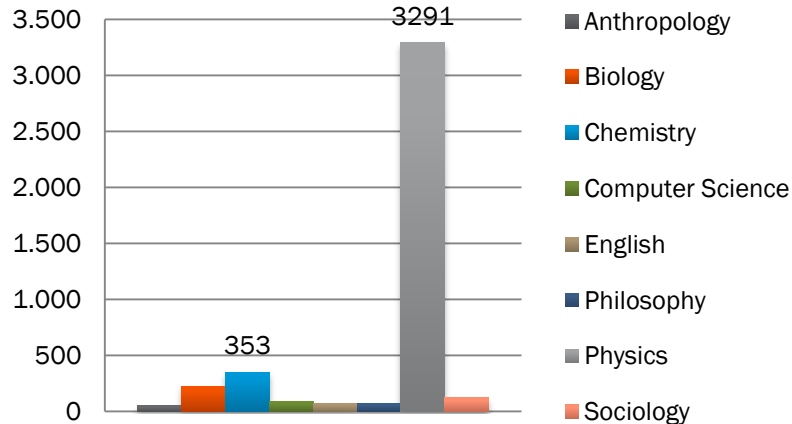
MENTIONS



URLs



RETWEETS



SUMMARY

- As expected, the data reflected differences of those who reported having Twitter accounts based on academic age and actual age.
- Of the 391 scholars (445 Twitter accounts) that were collected, the data did reflect differences in mean tweets per day based on gender, discipline, and academic age and title
- Finally, it was found that the data reflected no strong relationships between mean tweets per day and publication output or
- There was no real relationship between average citations and mean tweets per day (scholarly impact)
- The data did reflect small differences in affordance use by discipline, especially the differences in retweets but these differences in retweets are not an accurate representation of the retweets by the scholar



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ONGOING WORK

- Further analysis of retweets needed attempting to focus solely on retweets made by the scholars themselves
- Using linguistic tools, the text of the 289,934 tweets will be used to compare terms used in tweets with article titles at the level of the scholar and discipline
- A social network analysis will be completed reflecting the mentions used in tweets at the scholarly and discipline levels
- A closer examination of the actual affordances (unique hashtags, unique URLs, unique mentions) used
- A categorization of tweets as either personal or professional by Turkers
- A general discussion on what these social media metrics are actually measuring including any correlations between social media use and publication activity



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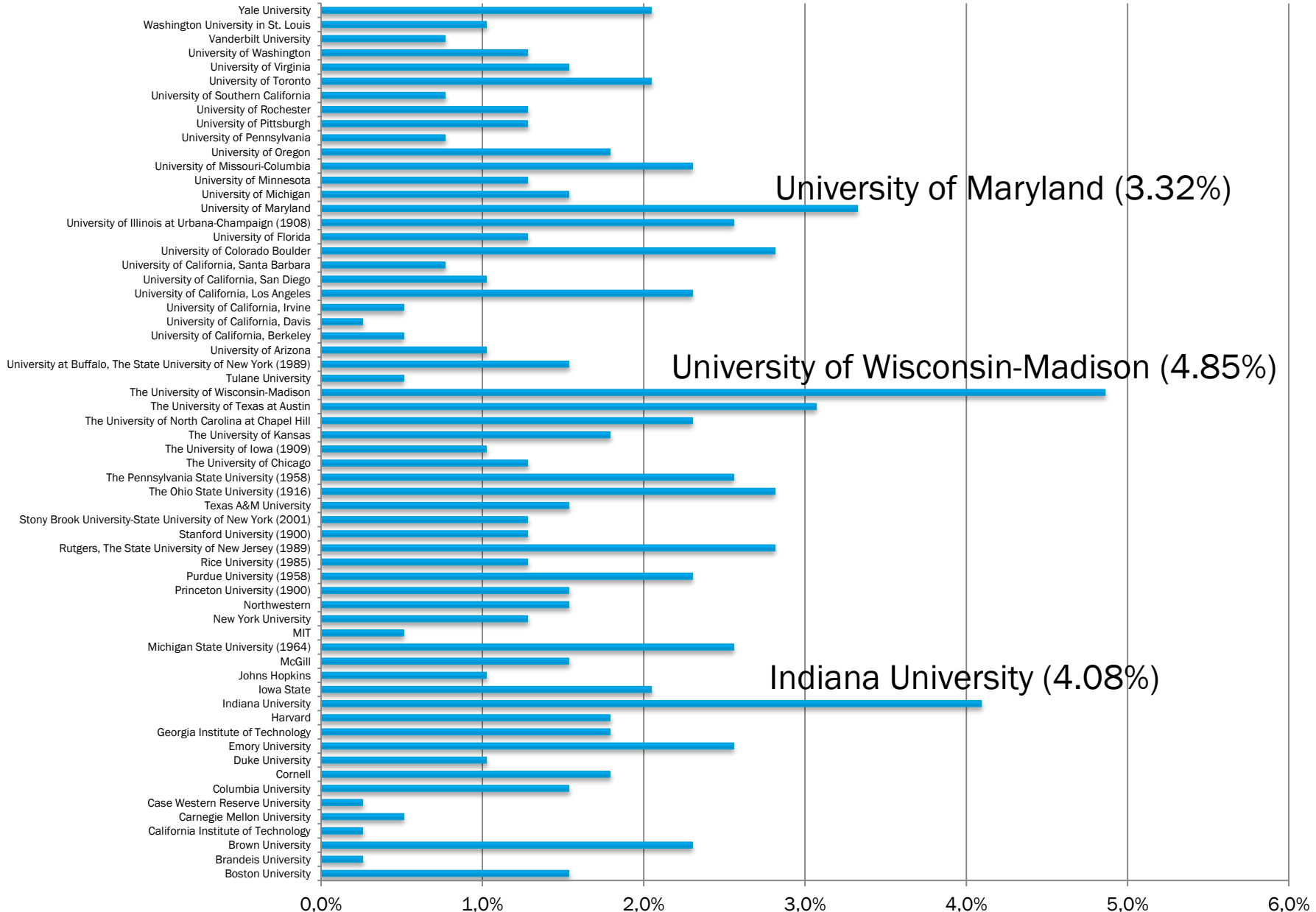


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APPENDIX: UNIVERSITY DISTRIBUTION



APPENDIX: 62 AAU-MEMBER UNIVERSITIES

Boston University, Brandeis University, Brown University, California Institute of Technology, Carnegie Mellon University, Case Western Reserve University, Columbia University, Cornell, Duke University, Emory University, Georgia Institute of Technology, Harvard, Indiana University, Iowa State, Johns Hopkins, McGill, Michigan State University, MIT, New York University, Northwestern, Princeton University, Purdue University, Rice University, Rutgers, The State University of New Jersey, Stanford University, Stony Brook University-State University of New York, Texas A&M University, The Ohio State University, The Pennsylvania State University, The University of Chicago, Tulane University, University at Buffalo, The State University of New York, University of Arizona, University of California, Berkeley, University of California, Davis,

University of California, Irvine, University of California, Los Angeles, University of California, San Diego, and University of California, Santa Barbara, The University of Iowa, The University of Kansas, The University of North Carolina at Chapel Hill, The University of Texas at Austin, The University of Wisconsin-Madison, University of Colorado Boulder, University of Florida, University of Illinois at Urbana-Champaign, University of Maryland, University of Michigan, University of Minnesota, University of Missouri-Columbia, University of Oregon, University of Pennsylvania, University of Pittsburgh, University of Rochester, University of Southern California, University of Toronto, University of Virginia, University of Washington, Vanderbilt University, Washington University in St. Louis, Yale University



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