Institute for Media
and Communications Management

University of St.Gallen



Connected for Success?
How Network Centrality on ResearchGate Relates to Bibliometrics, Altmetrics and Webometrics

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1 Background: Social Media & Science

What do we know about social media in science?

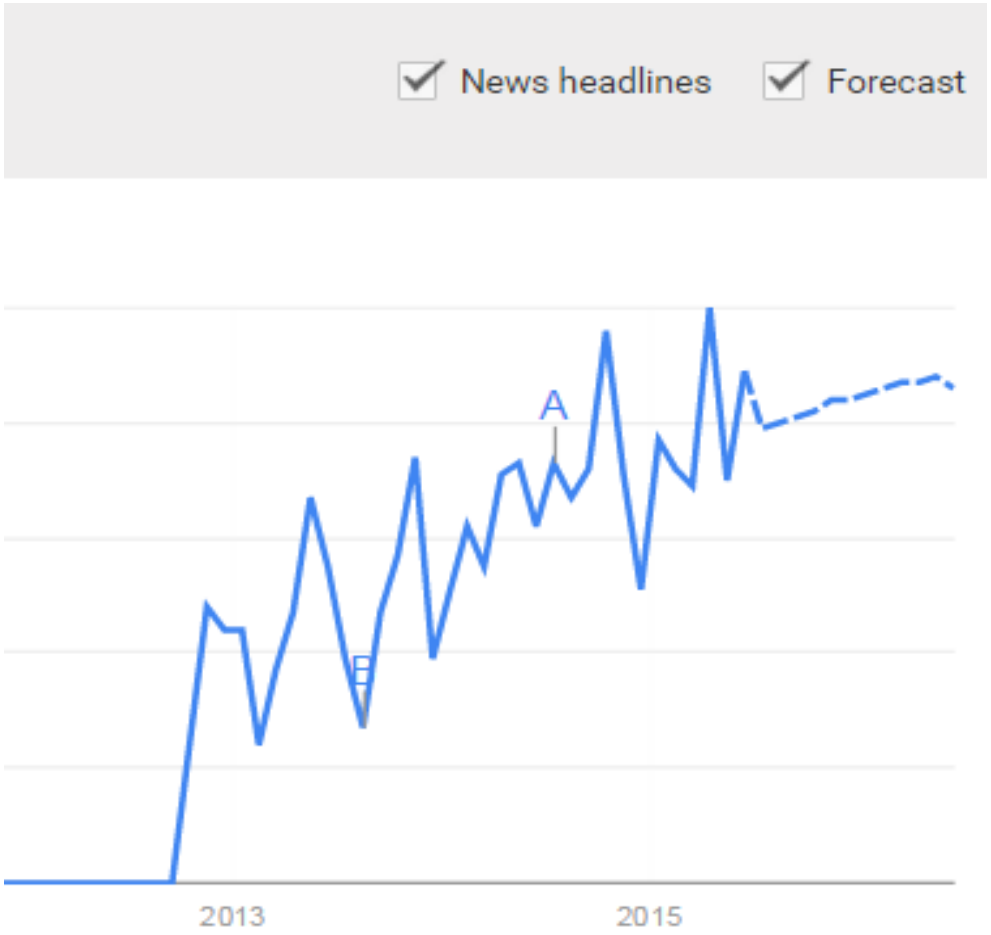
- A few studies on general social media use (Gruzd & Goertzen, 2013; Procter et al. , 2010)

- Some research on academic blogs and Twitter in science

- Active research field «altmetrics»

- Very few empirical studies about academic SNS

Popularity of «altmetrics» on Google Trends



Current research on altmetrics

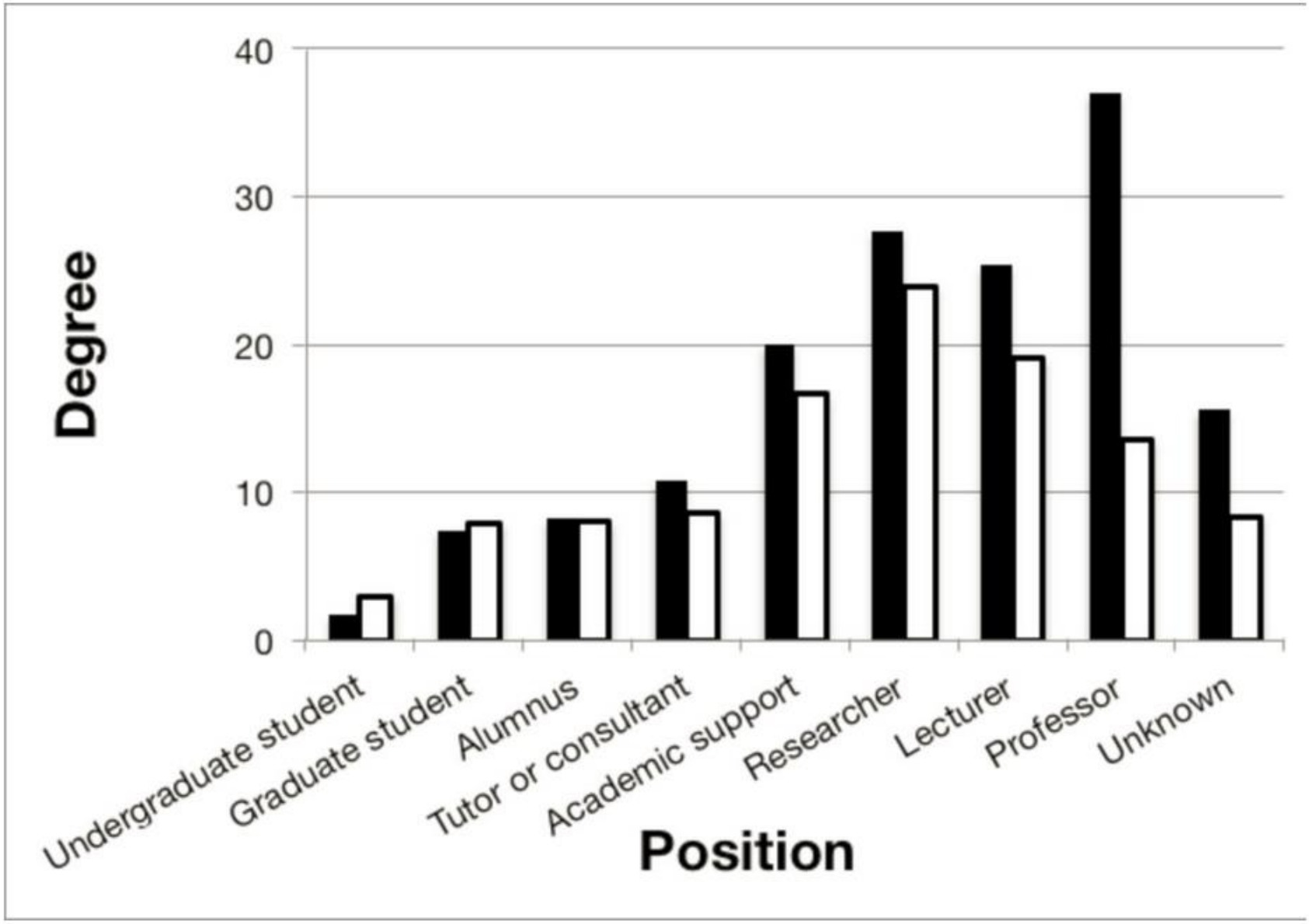
- Comparing 11 webometric indicators with WOS citations: correlations found for Twitter, Facebook wall posts, research highlights, blogs, mainstream media and forums; not enough evidence for Google+, LinkedIn, Pinterest, Q&A sites and Reddit (Thelwall et al., 2013)

- Mendeley readers a relatively good altmetrics indicator for citations later on (Haustein et al., 2014; Mohammadi & Thelwall, 2014)

- Very few studies about ResearchGate (e.g., Thelwall & Kousha, 2015)



Network study by Jordan (2014) about academia.edu



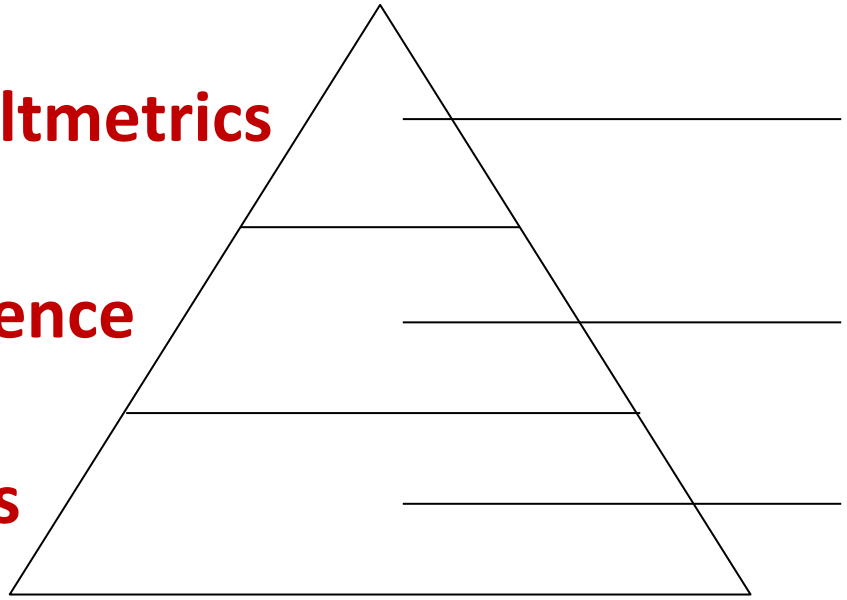
What about social capital and relations?



- Relations with other researchers are important resources
  - *Promotion*
  - *Publication*
  - *Invitation*
  - *Collaboration…*
- Social capital matters

⇒ **Bringing in the relational aspect in impact measurement… beyond citations**

Framework



Altmetrics

- Resonance of publications

Influence

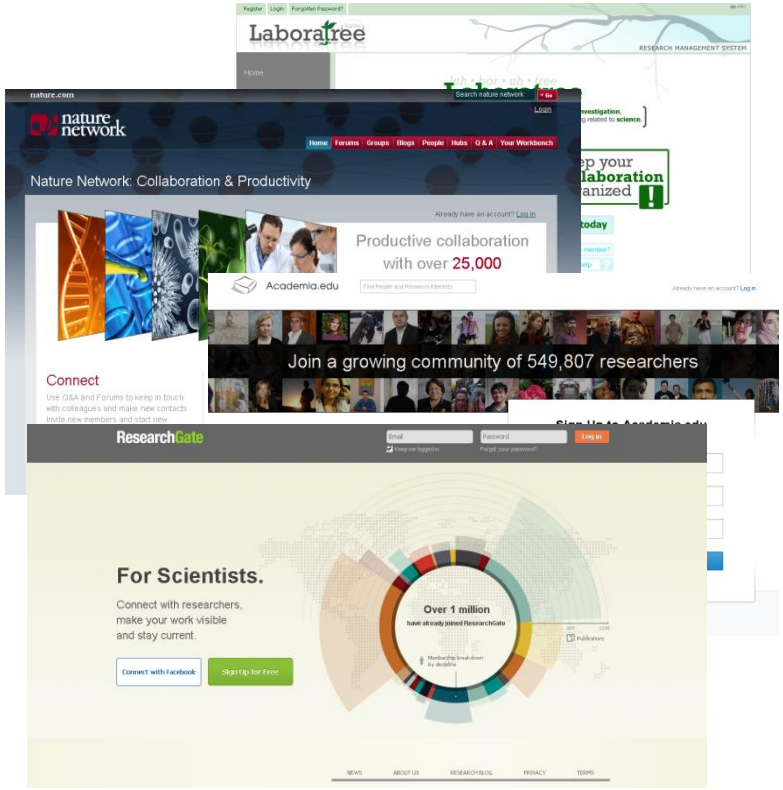
- Resonance of the person

Webometrics

- Public perception

Sample

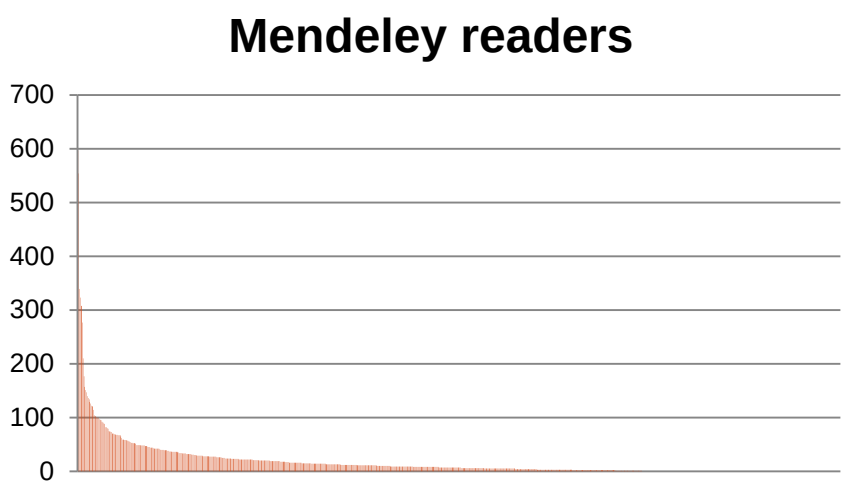
- 302 users from Swiss university
- 68.5 percent male, 31.5 percent female
- 40 percent PhD, 41 post-doc/assistant profs and 16 percent full profs (rest: admin)
- Collection of data in March 2014

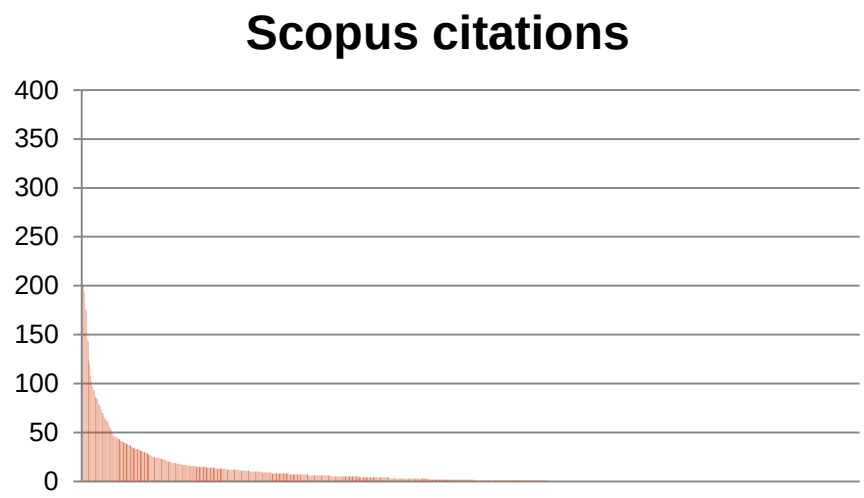


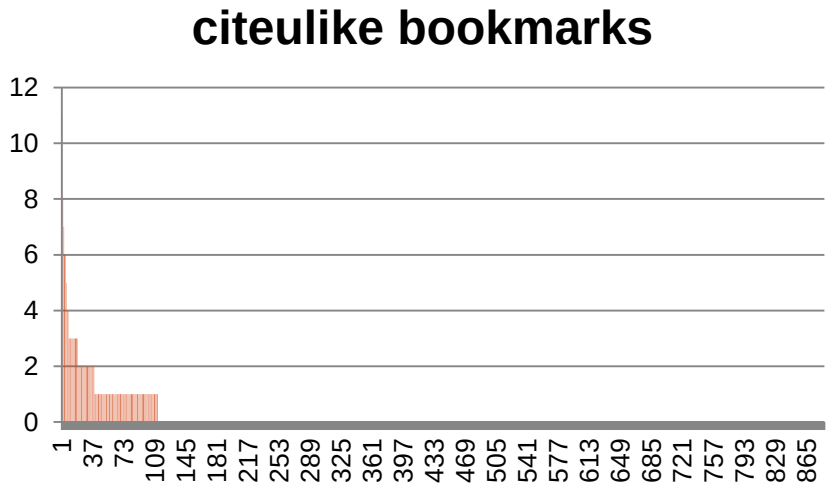


2 Scientometrics 2.0: Results

1. Altmetrics









N=885

2. Influence: ResearchGate network metrics



Person:

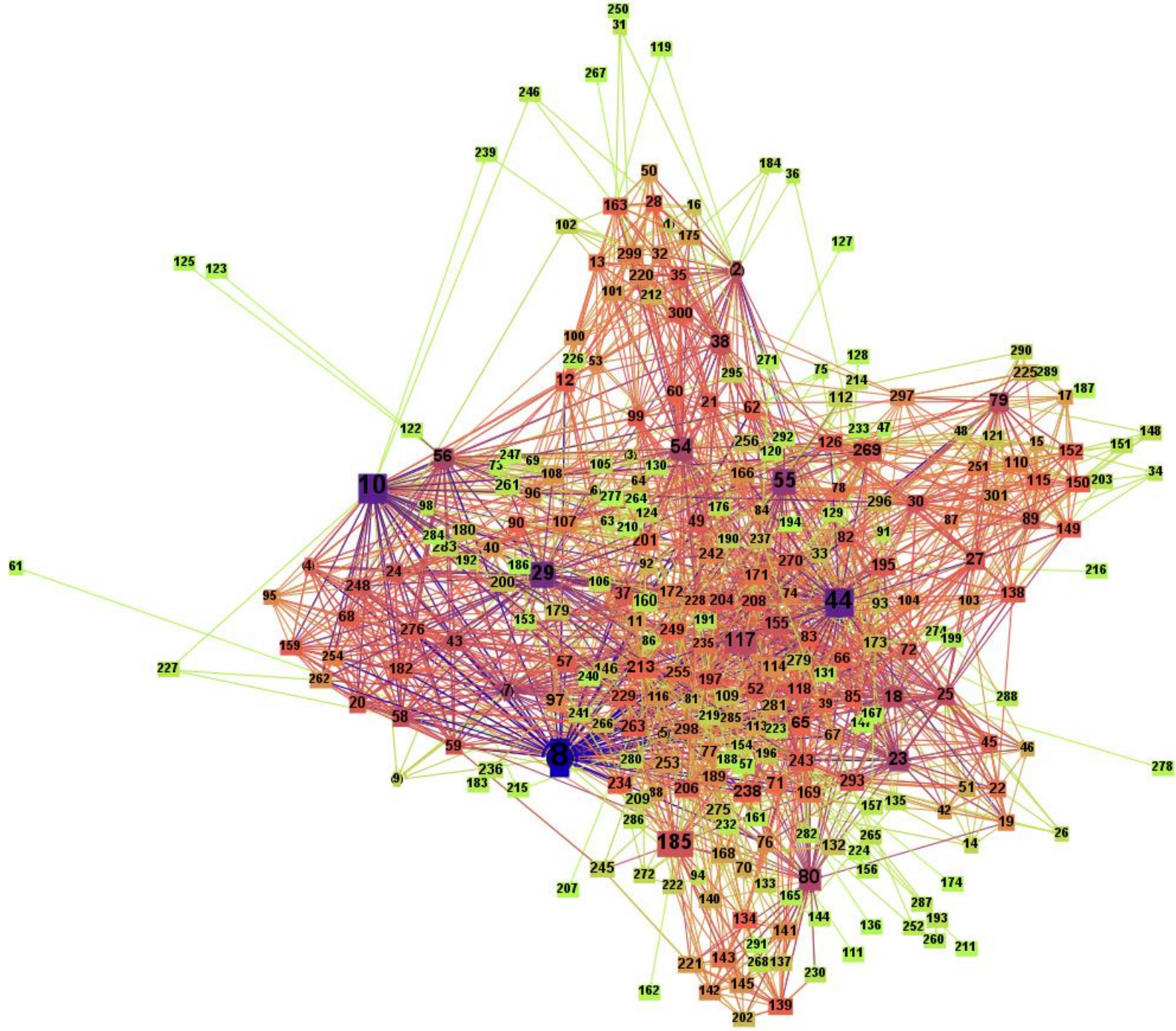
#Followers, #Followees, #Q&A, #Profile Views, #Impact Points/ RG Score



Publications:

#Papers, #Uploads, #Views, #Citations, #Requests, #Downloads

Activity and **network** of the researchers, **attention**, **resonance** of individual publications.



44 = Sven Reinecke

29 = Miriam Meckel

55 = Marcus Schögel

117 = Tobias Jenert

54 = Joachim Schelp

23 = Jörg Hofstetter

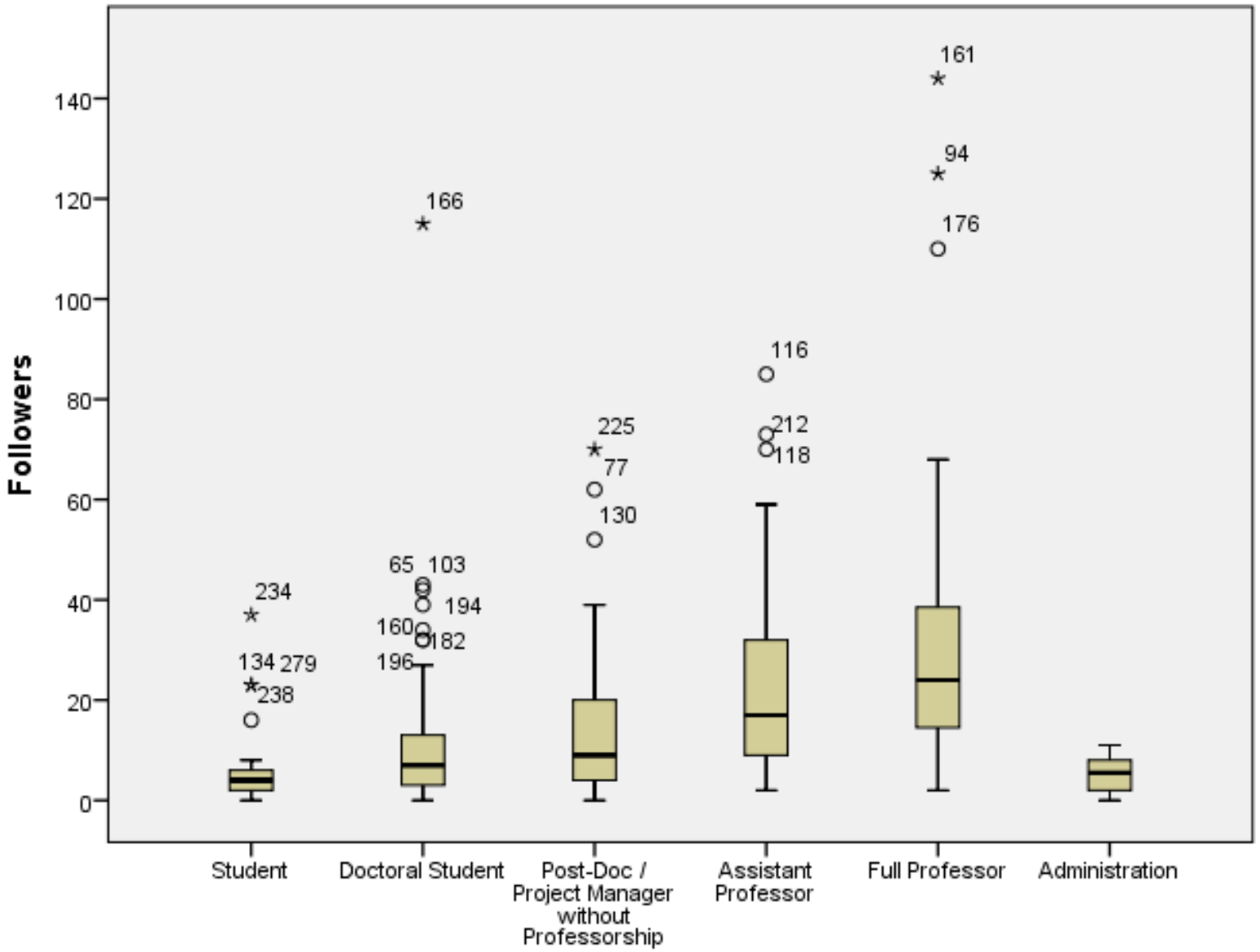
8 = Christian Hoffmann

10 = Christoph Lutz

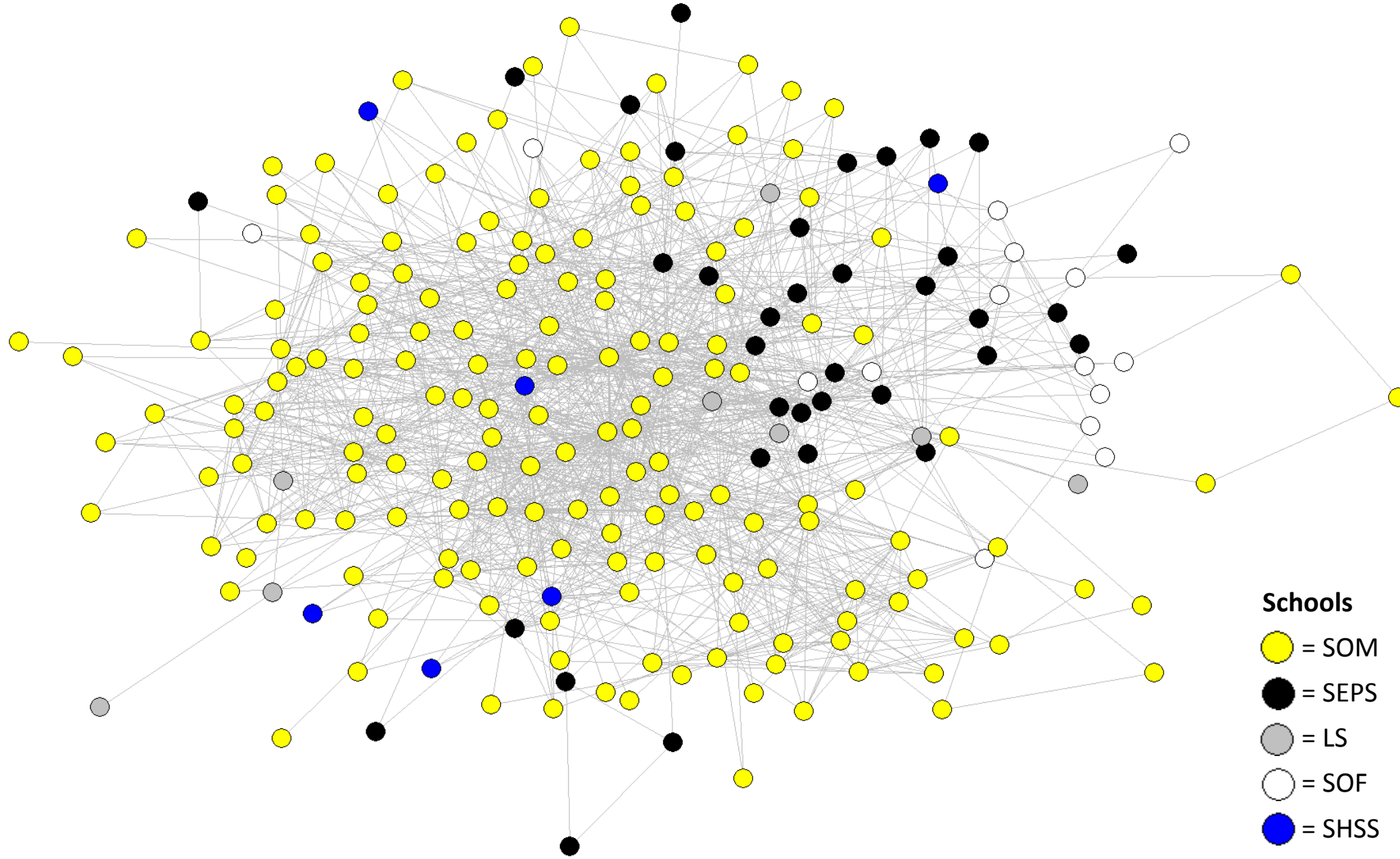
80 = Michael Lechner

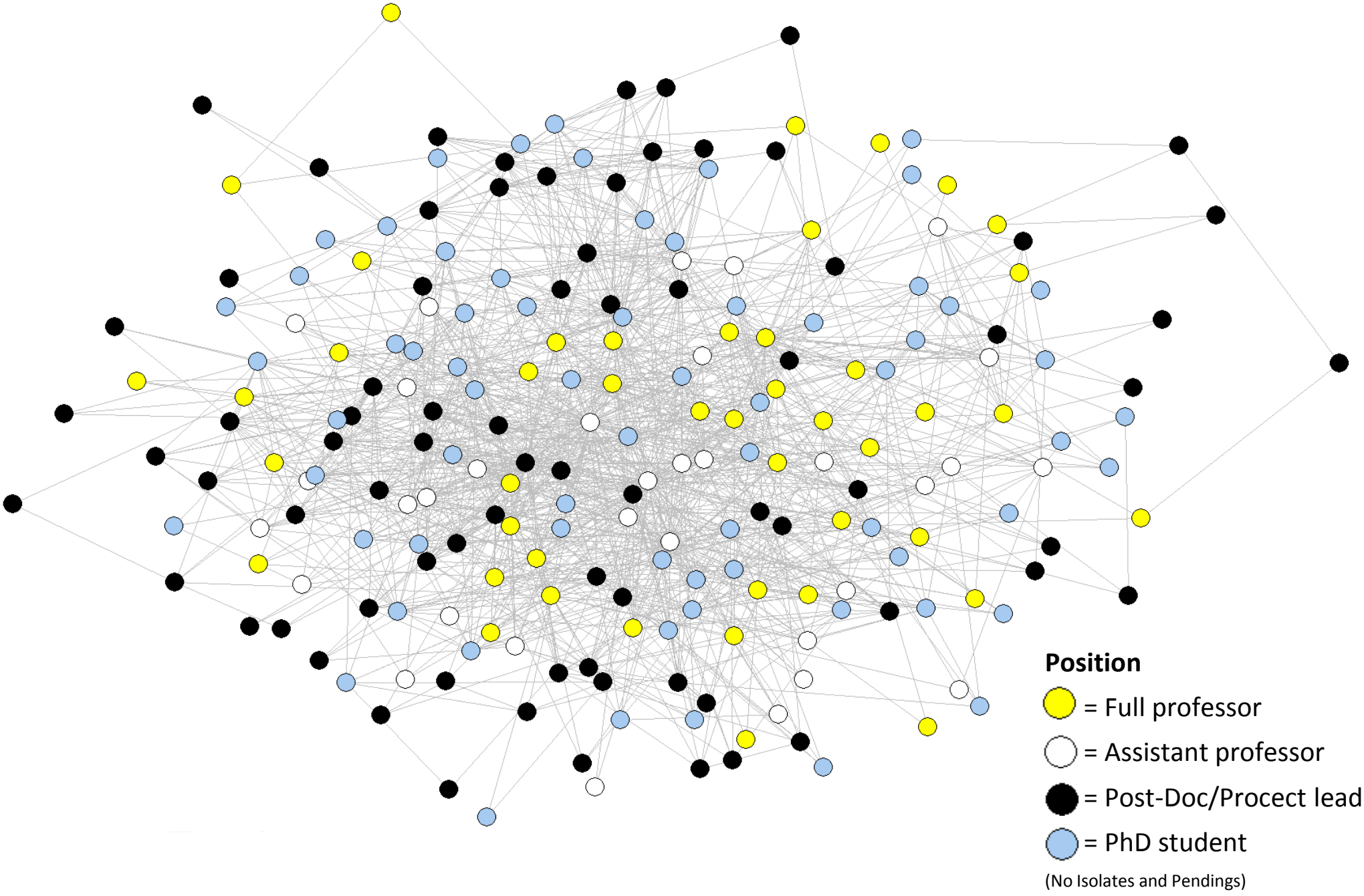
185 = Monika Bütler

Results match with academia.edu study



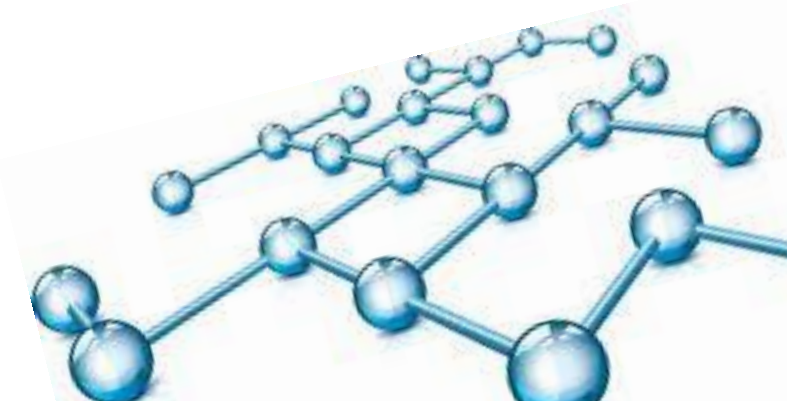
Jordan (2014)


Schools
= SOM
= SEPS
= LS
= SOF
= SHSS


Position
= Full professor
= Assistant professor
= Post-Doc/Procect leader
= PhD student
(No Isolates and Pendings)

Network statistics

- Density: only **3 percent** of all possible connections realized
- It is a relatively small community: **average distance** = 3.12; **diameter** = 9
- Internal networking most prevalent : On average, members of the UniSG have **16 followers**, 50 percent of which are UniSG colleagues. There are a couple of outliers and isolates
- High **homophily** along institutes



3. Webometrics

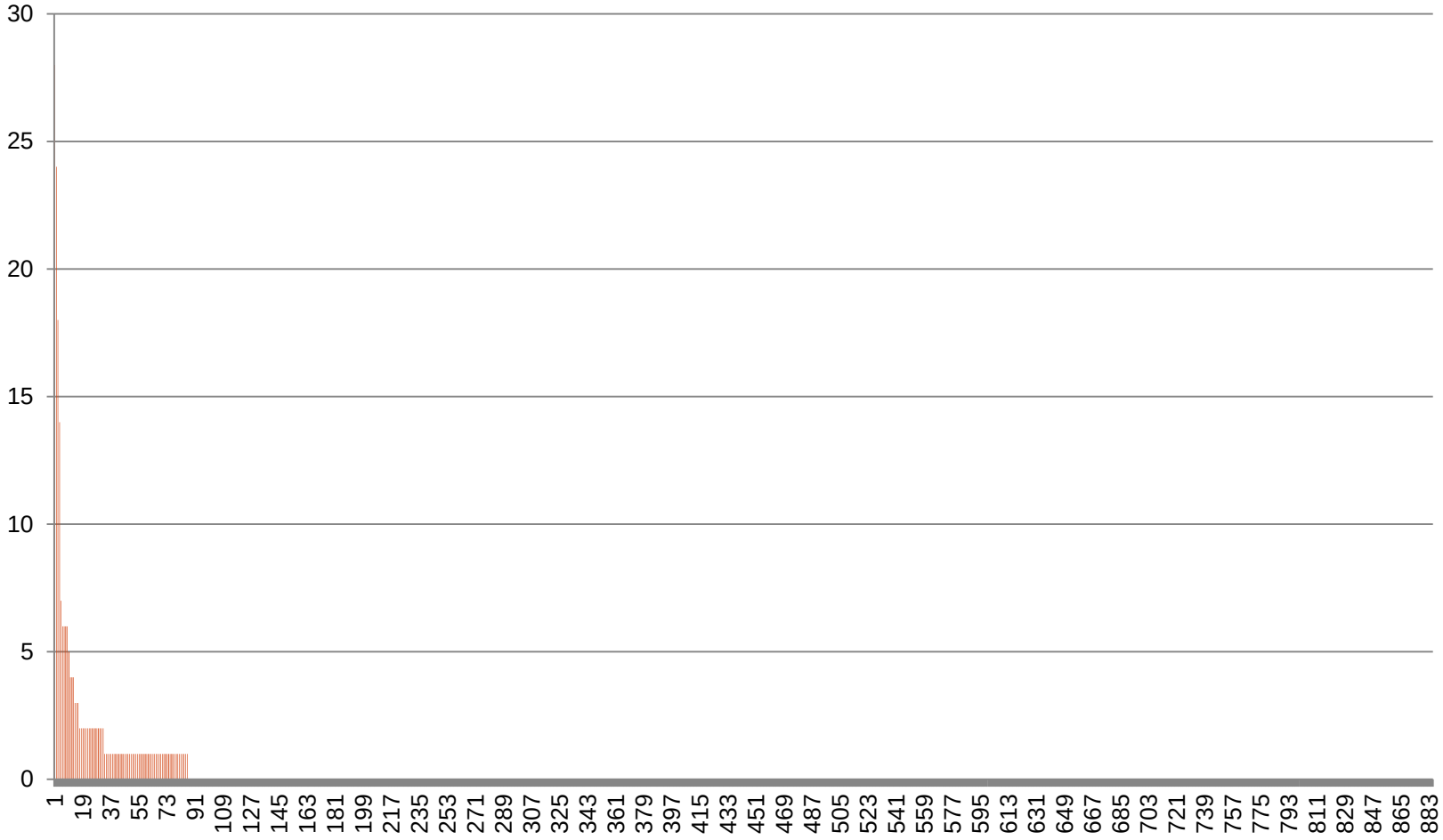
- We analyzed mentions of publications on:
  - **Wikipedia** (3 quotes)
  - **Blogs** (6 quotes)
  - **Facebook** (Comments on public pages with reference to 4 articles)
  - **Twitter** (227 tweets)
  - **Delicious** (100 bookmarks)







Distribution of number of tweets for articles

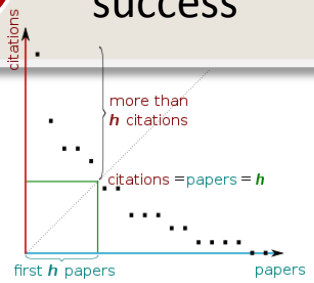


Correlations between indicators

1 Position



+ 2 Publication success



+ 3 Centrality



+ 4 Publication resonance

ResearchGate
Scientific Network

+ 5 Altmetrics

MENDELEY

+ 3 Webometrics

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Summary

	Activity	Centrality	Publication success (h-Index)	Publication resonance (RG)	Position	Altmetrics
Centrality	✓ 0.3					
Publication success	✓ 0.2	✓ 0.15				
Publication resonance	✓ 0.3	✓ 0.35	✓ 0.7			
Position	X	✓ 0.2	✓ 0.5	✓ 0.45		
Altmetrics	X	✓ 0.15	✓ 0.65	✓ 0.6	✓ 0.35	
Webometrics	X	X	✓ 0.35	✓ 0.2	✓ 0.15	✓ 0.25

Conclusion

- **Altmetrics** have a strong correlation with traditional measures of impact.
- The correlation of **centrality** measures with traditional measures of scientific impact is weaker. A dynamic perspective might be necessary here.
- Impact can barely be «forced» via communication efforts. It has to emerge from the recognition and reaction of other users.
- **Webometrics** only have a weak correation with traditional impact measures (in line with current bibliometric studies, e.g., Costas et al., 2014).

➢ Altmetrics and webometrics allow more **differentiated view** of impact.





Thank you for your attention!

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Costas, R., Zahedi, Z., & Wouters, P. (2014): Do “altmetrics” correlate with citations? Extensive comparison of altmetric indicators with citations from a multidisciplinary perspective. *Journal of the Association for Information Science and Technology (JASIST), early view*. Online: http://onlinelibrary.wiley.com/doi/10.1002/asi.23309/abstract

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