

# How do practitioners, PhD students and postdocs in the social sciences assess topic-specific recommendations?

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## Intro

- Typical difficulties in searching digital libraries (DL)
  - Vagueness between search and indexing terms
  - Weak rankings based on term frequency (tf\*idf), also others ...
  
- **Assumption I:** a user's search (experience) should improve by using recommendation services (Mutschke et al., 2011), esp. in:
  - Vague search tasks
  - Unfamiliar fields
  - Cross domain searches
  
- **Assumption II:** scholarly user's search with keywords, author names and journal names and use search tactics (Carevic & Mayr, 2016 to appear)

## Recommender Services

IRM project at GESIS (Lüke et al., 2013) has developed

- Search term recommender – STR (co-word analysis/Jaccard index)
- Journal name recommender – JNR (core journals/bradfordizing)
- Author name recommender – ANR (co-authorship analysis/betweenness centrality)

You type a query and get specific recommendations

### core journals ▼

- Soziale Systeme (105)
- Zeitschrift für Soziologie (56)
- Soziale Welt (30)
- Zeitschrift für Rechtssoziologie (25)

### central authors ▼

- Luhmann, Niklas
- Luhmann, Hans-Jochen
- Schimank, Uwe
- Tyrell, Hartmann
- Hartmann, Jutta
- Fischedick, Manfred

# Case Study

## Assessment exercise

- 19 social sciences researchers (seniors, research staff and PhD candidates) assessed topical relevance for STR, JNR and ANR for **their research topics/familiar field**
- 23 topics have been assessed  
[e.g. urban sociology, interviewer error, theory of action, atypical employment, ...]
- They assessed 4-5 recommendations for each recommender
- All recommendations were derived from the social sciences database SOLIS

## Results I

$$P = \frac{|r|}{|r + nr|}$$

	STR	JNR	ANR
AP	0.743	0.728	0.749
AP@1	0.957	0.826	0.957
AP@2	0.826	0.848	0.864
AP@4	0.750	0.726	0.750

- >70% of the recommendations are relevant
- Precision of ANR is slightly better than STR and JNR
- Top 1 recommendation of JNR is more often not relevant

# Results II

	STR	JNR	ANR
AP Practitioners (N=8)	0.727	0.709	0.836
AP PhD students (N=8)	0.742	0.719	0.737
AP Postdocs (N=3)	0.750	0.800	0.467



- Practitioners tend to assess **author names** more relevant
- Postdocs tend to assess **journal names** more relevant

# Conclusions/Further Questions

- Precision values of recommendations from STR, JNR and ANR are close together on a **high level**  
 Q: **Would the result be similar in a real retrieval scenario?**
- Practitioners are favoring author name recommendations while postdocs are favoring journal name recommendations  
 Q: **Are author names typically more distinctive features than journal names?**

# Outlook

- Integrate different recommender systems in real retrieval tasks (search sessions)
  - Measure task completion rates or goal satisfaction
- Use and evaluate recommenders for query expansion and as dynamic features in IR
- Develop new measures of utility of recommender systems (Hienert & Mutschke, 2016)



# References

- Carevic, Z., & Mayr, P. (2016). Survey on High-level Search Activities based on the Stratagem Level in Digital Libraries. In 20th International Conference on Theory and Practice of Digital Libraries (TPDL 2016).
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- Lüke, T., Schaer, P., & Mayr, P. (2013). A framework for specific term recommendation systems. In *Proceedings of the 36th international ACM SIGIR conference on Research and development in information retrieval - SIGIR '13* (pp. 1093-1094). New York, New York, USA: ACM Press. doi:10.1145/2484028.2484207
- Mutschke, P., Mayr, P., Schaer, P., & Sure, Y. (2011). Science models as value-added services for scholarly information systems. *Scientometrics*, 89(1), 349-364. doi:10.1007/s11192-011-0430-x

## Thank you

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