

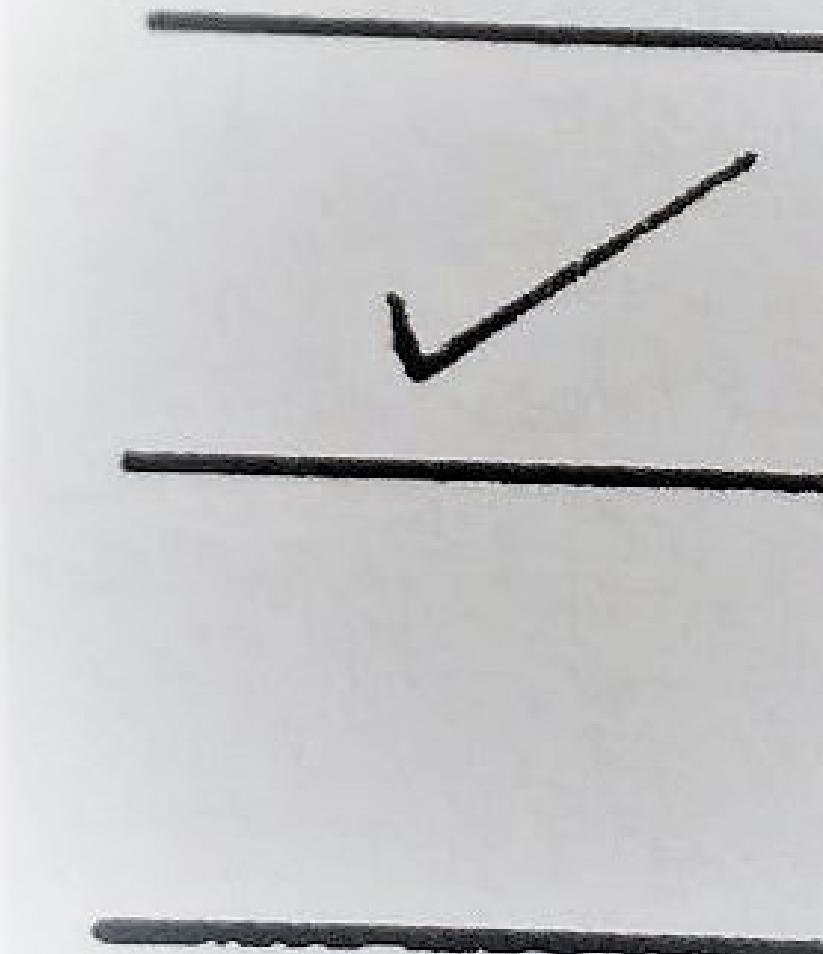
# Preregistration in Information Systems Research

*Open Science Day 2021*

Dr. Florian Pethig

2021-09-21

Layout based on [apreshill](#). Image [source](#).



Hello.

DR. FLORIAN PETHIG



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# Research interests

- Societal impact of IS
- Data analytics
- Technology acceptance

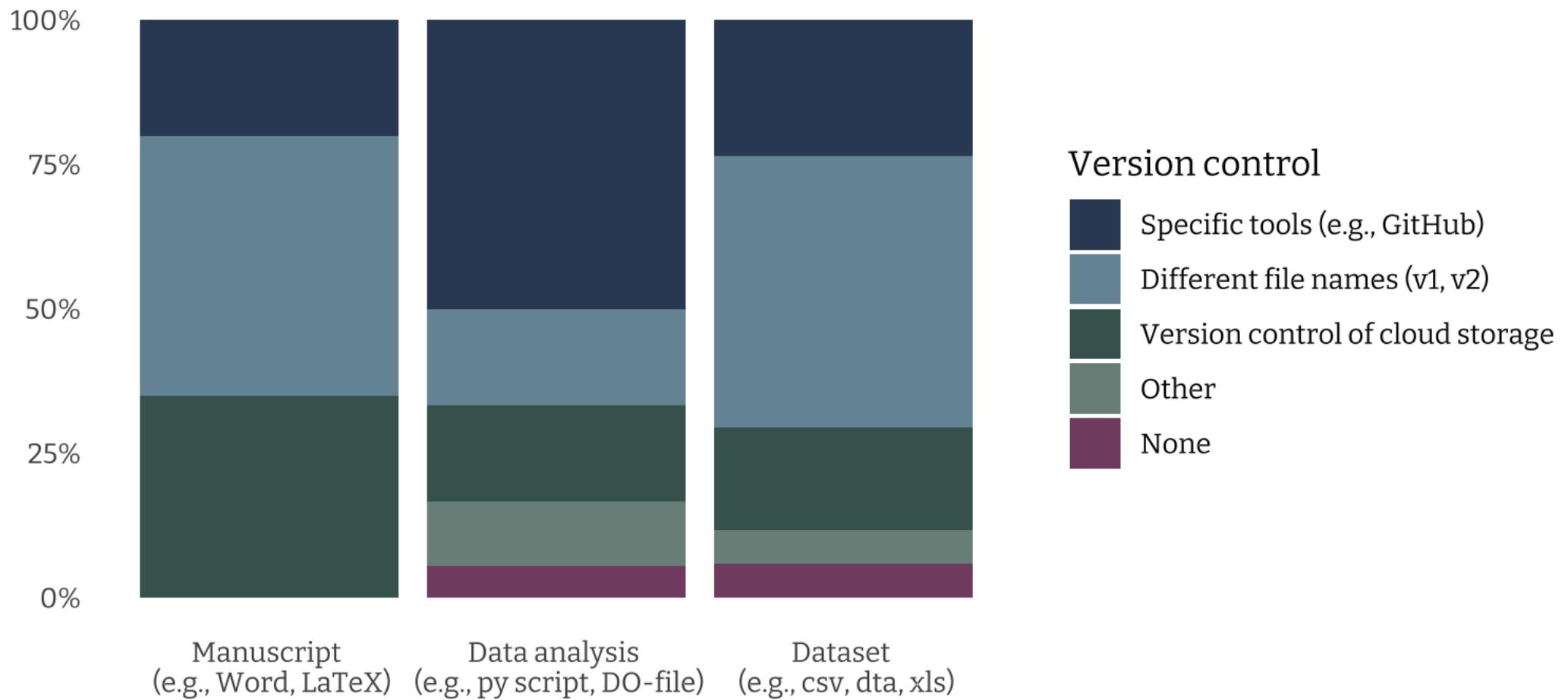
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  - Open Science Grant by University of Mannheim (2021)

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## Dedicated tools for version control rarely used for datasets



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# Stereotypes and Evaluations on Online Platforms: An Open and Preregistered Field Experiment

*Preregistration is defined as "committing to analytic steps without advance knowledge of the research outcomes" (Nosek et al., 2018, p. 2601).*



Source

**Q:** How many preregistered studies are currently published in the top 8 IS journals ("basket of 8")?

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**A:** 1

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## Will Humans-in-the-Loop Become Borgs? Merits and Pitfalls of Working with AI

Availability: In stock.

**\$0.00**

[Buy Now](#)

### **Abstract**

We analyze how advice from an AI affects complementarities between humans and AI, in particular what humans know that an AI does not know: “unique human knowledge.” In a multi-method study consisting of an analytical model, experimental studies, and a simulation study, our main finding is that human choices converge toward similar responses improving individual accuracy. However, as overall individual accuracy of the group of humans improves, the individual unique human knowledge decreases. Based on this finding, we claim that humans interacting with AI behave like “Borgs,” that is, cyborg creatures with strong individual performance but no human individuality. We argue that the loss of unique human knowledge may lead to several undesirable outcomes in a host of human–AI decision environments. We demonstrate this harmful impact on the “wisdom of crowds.” Simulation results based on our experimental data suggest that groups of humans interacting with AI are far less effective as compared to human groups without AI assistance. We suggest mitigation techniques to create environments that can provide the best of both worlds (e.g., by personalizing AI advice). We show that such interventions perform well individually as well as in wisdom of crowds settings.

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Yes, they do. Things are gradually changing.

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Yes, they do. Things are gradually changing.

For example:

- 2015: Start of new journal AIS Transactions on Replication Research
- 2018: Launch of information systems replication project
- 2019: Introduction of registered reports in Business & Information Systems Engineering
- 2021: New guidelines for research transparency in MIS Quarterly.

We looked beyond IS to Management and  
Marketing

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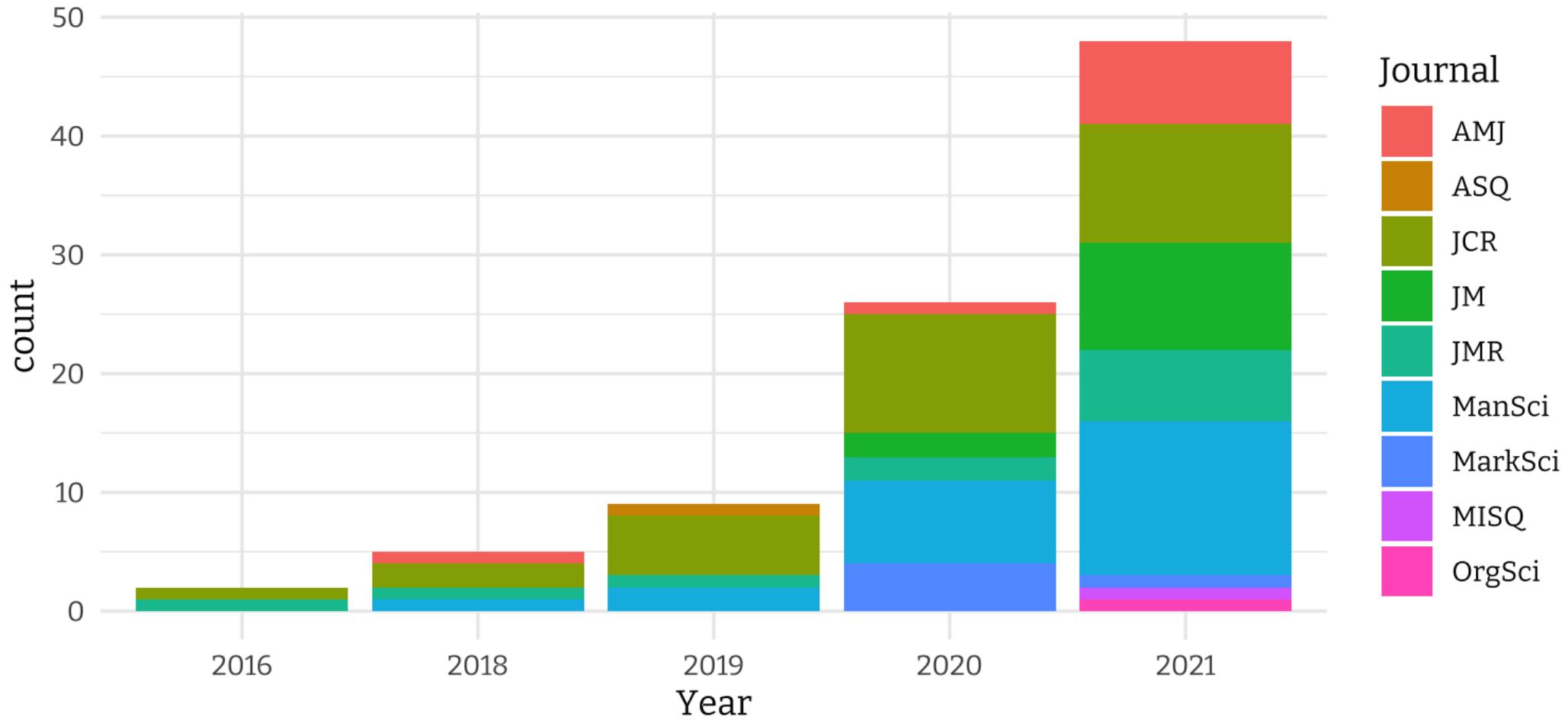
- 90 papers with preregistrations
- 554 experiments
- 288 preregistered
- 273 publicly available

Number of preregistered studies per paper:  
**3.2**

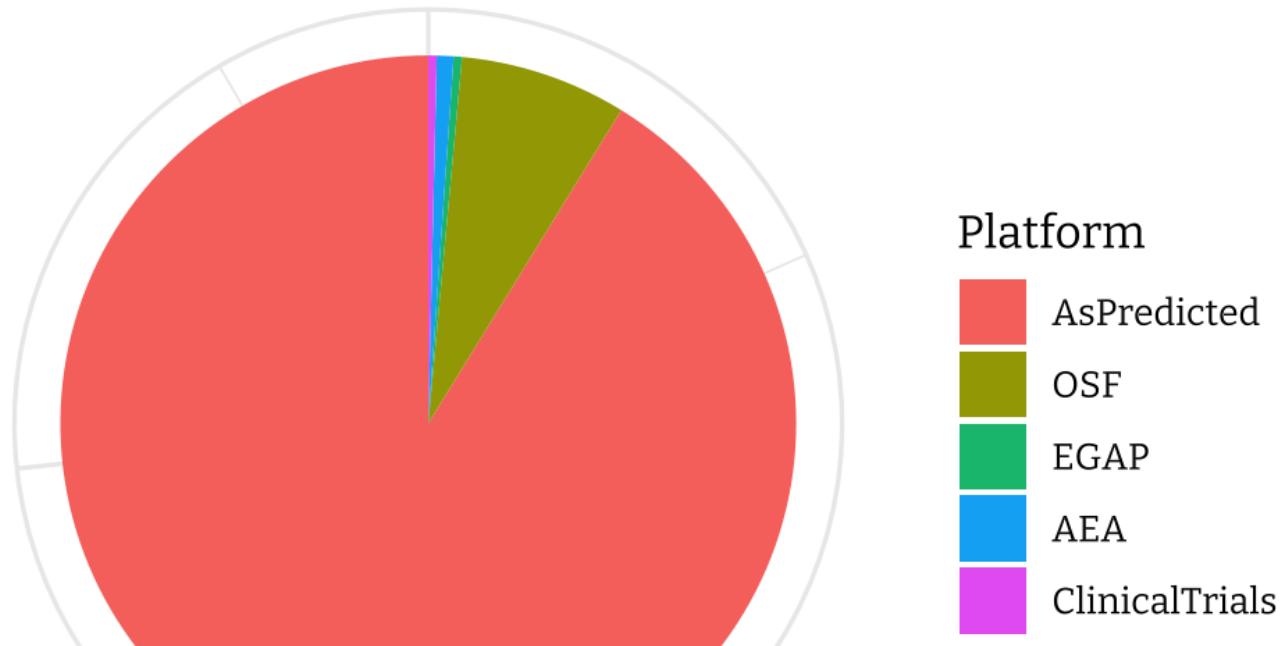
Percentage of preregistered studies per  
paper: **58%**

		Study	Exp	Prereg	Public	Journal
1	Amengual and Apfelbaum (2021)	3	1	1	1	ManSci
2	André et al. (2021)	8	3	3	3	JCR
3	Bain et al. (2021)	3	3	3	3	AMJ
4	Becker et al. (2021)	1	1	1	1	ManSci
5	Beshears et al. (2021)	1	1	1	1	ManSci
6	Buechel and Townsend (2018)	7	4	4	1	JCR
7	Burbano (2021)	1	2	2	2	ManSci
8	Carton and Lucas (2018)	3	2	2	2	AMJ
9	Chan et al. (2021)	2	1	0	0	OrgSci
10	Chang et al. (2020)	6	6	6	6	ManSci
11	Cho and Jiang (2021)	2	1	1	1	AMJ
12	Chung et al. (2021)	2	1	1	1	JCR
13	Consiglio and Van Osselaer (2019)	8	3	3	3	JCR
14	D'Angelo et al. (2019)	8	1	1	1	JCR
15	DeCellles et al. (2019)	4	4	4	4	ASQ
16	Doyle et al. (2021)	4	2	2	2	AMJ
17	Dunn et al. (2020)	6	2	2	2	JCR
18	Enke et al. (2021)	1	1	1	1	ManSci
19	von Essen et al. (2020)	1	1	1	1	ManSci
20	Fügener et al. (2021)	3	2	2	2	MISQ

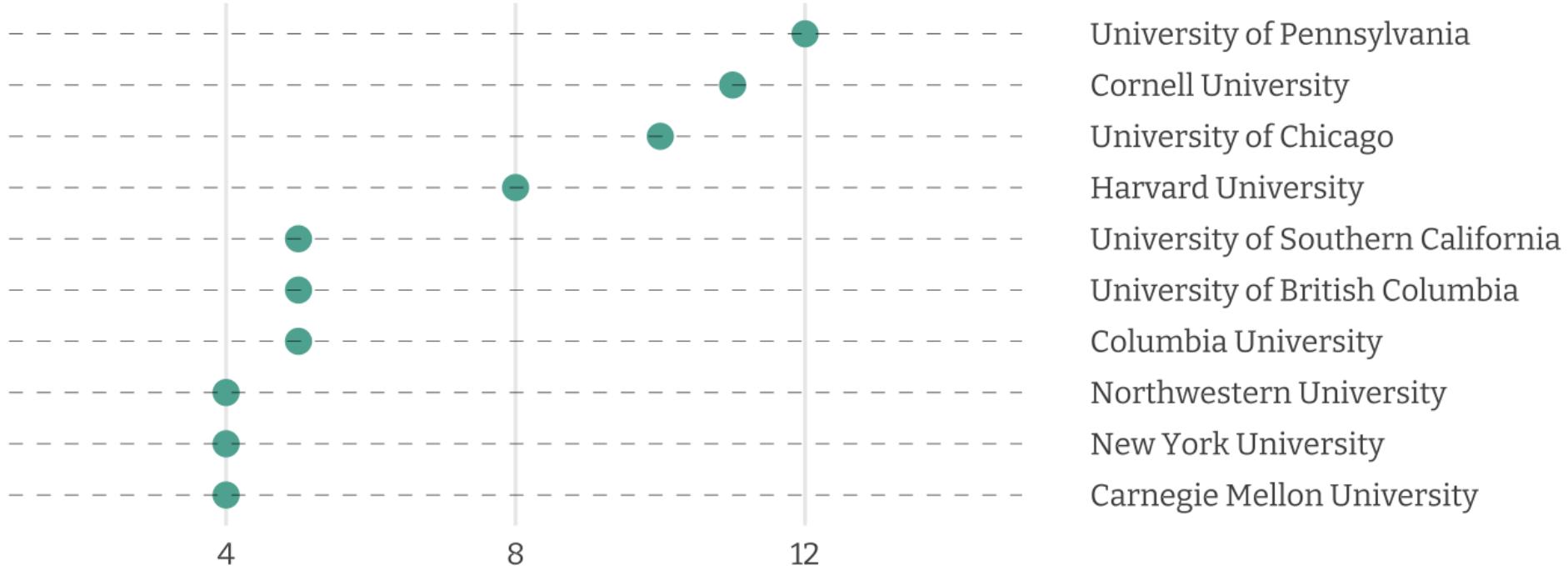
## Number of papers with preregistered studies published per year



## Distribution of platforms used for preregistrations



## Most papers with preregistrations published



# Key findings

- Preregistrations are increasingly prevalent in business research
- Differences across fields, e.g., fewer preregistrations in IS
- Exclusively for experimental research, no preregistrations for qualitative or archival studies found
- AsPredicted has emerged as the main platform for preregistrations
- Movement driven by top US business schools (e.g., Wharton School)
- **Next steps:** Expand sample and make it publicly available via zenodo

## SINCERE THANKS TO:

- Oliver Eriksson
- Dr. Ira Maschmann
- Dr. Philipp Zumstein
- Prof. Hartmut Hoehle



Thank you!

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