Alexander Guggenberger

Contact Information

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Fields

Applied, Empirical, Behavioural and Experimental Economics

Education

09/2021 - 06/2026	Ph.D. in Economics	University of Salzburg
	Title of the doctoral thesis: "Three empirical studies on the (strategic) value of information"	
	with distinction	
10/2018 - 03/2020	M.Sc. in Economics	University of Vienna
	with distinction	
10/2015 - 09/2018	B.Sc. in Economics	University of Vienna

Academic Experience

05/2021 - 02/2026	Research Assistant	University of Salzburg
10/2024 - 12/2024	Visiting Ph.D. Student	University of Rotterdam
02/2020 - 04/2021	Research Assistant	University of Vienna
09/2019 - 02/2020	Tutor *("Quantification and Statistics")*	University of Vienna
07/2019 - 09/2019	Internship	Max-Planck Institute for Demographic Research in Rostock

Grants and Presentations

05/2025	Presentation at SCEUS Young Scholars' Workshop
11/2024	Presentation at the PLUS Econ Workshop in Salzburg
09/2023	Presentation at the Austrian Economic Association's (NOeG) annual conference
12/2022	Graf Hardegg Foundation Research Grant

Languages	German (native), English (excellent), Spanish (good), French, Chinese (beginner)
Software Skills	R, LATEX (excellent), Python (advanced), SPSS, STATA (basic)

Ph.D. Projects:

"The power of uncertainty in committees with unequal voting rights"
(with Georg D. Granic and Alexander K. Wagner)

We study strategic voting in committees with unequal voting power when regular members face uncertainty about the chairman's preferences. In contrast to the classic chairman's paradox under complete information, where tie-breaking authority disadvantages the chair, such preference uncertainty can reverse this result. The mechanism is a belief-driven trade-off: regular members weigh aligning with each other against aligning with the chair's expected preference type. This yields two equilibrium classes, one favoring and one disadvantaging the chair. A laboratory experiment supports these predictions. In the data, under uncertainty, small deviations from equilibrium amongst regular members further enhance the chair's advantage.

"Information Aggregation in Sequential Demand Forecasting: Evidence from the Field"
(with Daniel Garcia, Juha Tolvanen and Alexander K. Wagner)

Organizations routinely use sequential forecasting processes in which multiple forecasting stages acquire and transmit demand signals to achieve an optimal final forecast through information aggregation. Studying observational data from a large manufacturing company on a sequential demand forecasting process, we find that human forecasts perform worse than naive statistical benchmarks, in particular the mean of the time series (41% lower RMSE), indicating that information aggregation does not happen as intended. We indeed find that forecast do not have any predictive power for orders and seem to be pure noise, i.e. forecasters either do not have or do not acquire any valuable demand signals. Information transmission, on the other hand, crucially depends on the organizational design details: between forecasting stages where the predecessor forecast is observable, but organizationally independent, we do not detect any statistical dependence between forecasts. If, however, the predecessor is the default value in the forecasting dashboard and forecasters participate in consensus meetings, we find high copy rates of 46% and 79%, respectively, and a significant statistical dependence on the predecessor even if it is not exactly copied.

"Human-Algorithm Collaboration in Demand Forecasting: Information Transmission and Preference Alignment"
(with Daniel Garcia, Juha Tolvanen and Alexander K. Wagner)

We study human-algorithm collaboration in demand forecasting when humans hold private information inaccessible to the algorithm, and the algorithm has superior ability to process historical demand data. In a pre-registered experiment with 600 participants, we compare two collaboration designs: a recommendation algorithm whose output humans can override, and a decision algorithm that uses an online-learning rule to incorporate human inputs into the final forecast. Both designs reduce forecasting error by 25-30% relative to unaided human forecasting.

This improvement operates through two channels: the algorithm's superior processing of public information, and a doubling of private-information transmission when humans can focus exclusively on their private signals.

Under aligned incentives, the two designs perform equally well, implying that the benefits

of collaboration do not require granting the algorithm control over the final forecast. The decision algorithm significantly outperforms the recommendation design by dynamically correcting 57% of participants' forecast bias under misaligned incentives. Among participants with large biases, this yields a 15% reduction in forecasting error.

We also provide evidence of strategic adaptation in human-algorithm collaboration with participants disproportionally inflating forecasts when interacting with the decision algorithm under misaligned incentives.