Kolloquiumsvortrag
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It Depends: Personalizing Loss–Gain Nudging in Retirement Saving with Causal Machine Learning

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Many people fail to save adequately for retirement because it requires complex information processing and long-term planning. At the same time, most Western countries face rapidly aging populations, placing increasing pressure on social welfare systems. Behavioral interventions, such as nudges, have been proposed to encourage retirement savings; however, recent evidence raises questions about their effectiveness, particularly in the financial domain. Prior studies on loss–gain framing—the focus of this study—report mixed results, often measure only intentions rather than behavior, and typically ignore potential effect heterogeneity. Motivated by these limitations, we investigate the impact of loss–gain framing on real-life, high-stakes retirement savings decisions. We conducted a large-scale randomized field experiment (N = 41,207) with a European fintech company offering an app-based retirement plan, in which customers faced an average saving decision of EUR 1,868. Users were randomly exposed to combined textual and visual loss or gain frames. We analyzed both the extensive margin (whether individuals saved) and the intensive margin (how much they saved) and applied causal machine learning to estimate Conditional Average Treatment Effects (CATE). We find substantial heterogeneity in framing effects that can be leveraged for personalizing the targeting of loss- and gain-framed reminder messages. Specifically, our findings suggest that targeting based on predicting CATEs could increase the return per reminder message by 45% (i.e., from € 90 to € 131). The uncovered effect heterogeneity can be partly explained by socio-economic characteristics such as users' jobs and past saving behavior.

Oliver Müller is Professor of Management Information Systems and Data Analytics at Paderborn University. He holds a BSc, MSc, and Ph.D. in Information Systems from the University of Münster's School of Business and Economics. His research interests focus on data-driven decision-making. This includes the design and effective use of innovative machine learning solutions to support human decision-making, as well as studying the acceptance and implications of data-driven decision-making in organizations. His research has been published in the Journal of Management Information Systems (JMIS), Journal of the Association of Information Systems (JAIS), Journal of Strategic Information Systems (JSIS), European Journal of Information Systems (EJIS), and various others. Professor Müller received several awards and honors for his work, including the AIS Best Information Systems Publications Awards in 2017 and 2023.