THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Information Systems, Business Statistics and Operations Management

IS SEMINAR ANNOUNCEMENT

When Algorithmic Nudging Backfires:
Evidence From a Field Experiment Leveraging Causal Machine Learning

by

Prof. Markus WEINMANN
University of Cologne

DATE	29 January 2026 (Thursday)
TIME	10:30 am - 12:00 noon
VENUE	4/F Meeting Room (Room 4047), LSK Business Building

ABSTRACT

We study the effectiveness of an algorithmic nudge in the form of algorithmic financial advice on retirement-saving decisions. Using a field experiment (N = 4,322 customers), we compare an algorithmic nudge, that is, advice generated by a machine-learning model, with a one-size-fits-all nudge based on average historical investments. We then use causal machine-learning techniques to study heterogeneous treatment effects of algorithmic nudging. Our findings reveal substantial heterogeneity. While algorithmic nudges improve outcomes for individuals with managerial backgrounds, they backfire for those with computer science backgrounds. We further show that a targeted strategy that delivers algorithmic nudges only to individuals most receptive to them could increase retirement savings contributions by up to 34%. This research contributes to the literature on algorithmic nudging and algorithmic management.

BIOGRAPHY

Markus Weinmann is a Professor of Business Analytics and the Director of the Institute for Business AI at the University of Cologne. His research is at the intersection of business and technology, with a particular focus on how organizations use data and algorithms to make better decisions and create business value. He works on topics such as digital platforms, algorithmic decision-making, and behavioural analytics. His research has been published in leading academic journals, including Information Systems Research, Management Science, Marketing Science, and MIS Quarterly. He serves as an Associate Editor at MIS Quarterly.

He is the Academic Director of the Master's programme in Business Analytics and Econometrics at the University of Cologne. He teaches courses on machine learning and statistics in business settings. In addition to his university teaching, he regularly leads executive education sessions on AI for Managers, helping decision-makers understand and apply AI in practice.

Markus has received several awards and honours, including a Marie Skłodowska-Curie Fellowship, the European Research Paper of the Year Award in Information Systems, and an invitation to the Lindau Nobel Laureate Meeting as a Young Economist.

He has worked at the Rotterdam School of Management (RSM) and held academic positions across institutions in Asia and Europe. He has lived and worked in Australia, Germany, Hong Kong, Liechtenstein, and the Netherlands. In addition to his academic roles, he regularly consults for companies on data-driven decision-making and the application of AI in business.