TUM
School of Management

Strategic and International Management

Master Thesis

"Using AI for Managerial Decision Making: A Systematic Literature Review"

Background

About six years ago, only less than 10% of organizations adopted any form of AI. In 2021, about 80% use it in their day-to-day business activities (Meissner and Keding 2021). Research about AI and management has already shown that today AI can create value mainly through four sources: decision support, customer, and employee engagement; automation; and new products and services. In the area of decision support AI can be particularly useful due to its strength to detect patterns humans cannot find due to the volume and velocity of data (Borges et al. 2021). Moreover, the scale, scope, and speed of strategic analyses can be increased dramatically by using AI (Krogh et al. 2021). However, it is also crucial to be aware of unintended consequences when using AI for decision-making, as there are for example risks that algorithms get fooled through manipulation of data or that AI-based decisions can increase human biases (Shrestha et al. 2019). Due the significant development of using AI for decision-making in the last decade and the consequently rapid increased research in this field, there is a strong need to systematically analyze and categorize its today's state of research.

Introductory Reading

- Borges, Aline F.S.; Laurindo, Fernando J.B.; Spínola, Mauro M.; Gonçalves, Rodrigo F.; Mattos, Claudia A. (2021): The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. In International Journal of Information Management 57, pp. 102–118.
- Krogh, Georg von; Ben-Menahem, Shiko; Shrestha, Yash Raj (2021): Artificial Intelligence in Strategizing: Prospects and Challenges. In Marjorie A. Lyles, Irene M. Duhaime, Michael A. Hitt (Eds.): Strategic Management: State of the Field and Its Future: Oxford University Press.
- Meissner, Philip; Keding, Christoph (2021): The Human Factor in AI-Based Decision-Making. In MIT Sloan Management Review.
- Shrestha, Yash Raj; Ben-Menahem, Shiko M.; Krogh, Georg von (2019): Organizational Decision-Making Structures in the Age of Artificial Intelligence. In California Management Review 61 (4), pp. 66–83.

Tasks and Goals

This master thesis is closely related to the current research of the chair and includes:

- **Deep literature review** analyzing the **development and current state of research** about **AI and managerial decision-making**
  - Identifying and collecting articles in influential peer-reviewed journals
  - Systematically reviewing and categorizing research and developing a coherent literature structure
  - Using existing/developing a new framework to classify and synthesize literature and its concepts
  - Assessment of the research's impact and evaluating future research potentials

Requirements

- Good English skills
- Independent, reliable, and diligent working style with attention to detail
- Participation in the lecture *Strategies in Multinational Enterprises (MNEs)*

Details

- Supervisors — Prof. Dr. Thomas Hutzschenreuter and Franziskus Perkhofer, MSc
- Start — Flexible / As of now
- Working time — 6 months

Contact

If you are interested in writing your thesis at our chair or have questions on this topic, please contact Franziskus Perkhofer (franziskus.perkhofer@tum.de). Please send an email, including a tabular CV and current transcript of records (as one PDF file), to apply for a master thesis. We are looking forward to working with you!

Professor Dr. Thomas Hutzschenreuter
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