AI-driven Behavior Change Techniques for more Sustainable Consumer Behavior

UNIVERSITÄT HOHENHEIM

Your ideas regarding this topic are more than welcome

Motivation

In today's increasingly digital world, it is crucial to explore how artificial intelligence (AI) can influence behavior to promote sustainability. This relevance is underscored by the United Nations' Sustainable Development Goal 12, which focuses on sustainable consumption. AI systems hold great potential to guide and encourage individuals toward more sustainable actions by leveraging advanced behavior intervention strategies. In this thesis, students will examine how AI-driven interventions can be designed and implemented to influence consumer behavior and evaluate their effectiveness in fostering sustainable practices.

Source: https://textilesforsdgs.org/sdgs/goals/12-responsible-consumption-and-production/

Research Question

- **How can AI behavior change techniques be used to contribute to sustainable consumer behavior?**

Contact

Fabian Probost

Approach / Literature

- Structured literature review according to Webster & Watson (2002) on AI behavior change techniques for more sustainable consumer behavior. Developing a framework with the results of the literature review (Schwarz et al. (2007).
- Data collection and analysis to test the effectiveness of AI Behavior Change Techniques.

- Abraham, C., Michie, S. (2008). A Taxonomy of Behaviour Change Techniques Used in Interventions. Health Psychology, 27(3), 379-387.
- Schoormann, T. et al. (2023). Artificial Intelligence for Sustainability—A Systematic Review of Information Systems Literature. Communications of the Association for Information Systems, 52.
- del Prete, M. (2022). Mindful Sustainable Consumption and Sustainability Chatbots in Fast Fashion Retailing During and After the COVID-19 Pandemic. Journal of Management and Sustainability, 12(1).

Chatbots and Environmental Sustainability

UNIVERSITÄT HOHENHEIM

Motivation

- Ecological crisis drives the growing consumer awareness of the environmental and societal impact of our consumption habits.
- The adoption of new consumption models is based on conscious decisions made by customers.
- AI technologies such as chatbots may offer customers new ways for interacting with organizations and receiving environmental and ethical information.
- Chatbots could serve as a viable strategy to enhance consumer awareness, potentially promoting sustainable consumption patterns.
- Thus, it should be investigated how chatbots can help to catalyze conscious customer choices.

Your ideas regarding this topic are more than welcome

Source: AI-generated with Canva

Research Question

To what extent and in which ways can chatbots act as catalysts for conscious customer choices? How do chatbots impact users' attitudes and behaviors regarding pro-environmental behavior?

Contact

Katharina Breiter

Dominik Becker

Approach / Literature

- First possible approach: Structured literature review according to Webster & Watson (2002) on chatbots and conscious customer choices.
- Second possible approach: Design Science Research according to Sonnenberg und vom Brocke (2012) or Tuunanen et al. (2024).
- Third possible approach: Conduct a survey-based vignette experiment according to Rossi (1979) or Rost (2018).
- Literature: Gimpel et al. (2023), Schützler et al. (2020), Diederich et al. (2019) or Breiter et al. (2024).

Circular Economy & Digital Technologies

UNIVERSITÄT HOHENHEIM

Your ideas regarding this topic are more than welcome

Motivation

- Our throw-away culture consumes and wastes more resources than Earth can sustain, threatening our planet.
- The circular economy, which keeps materials in use through renting, sharing, repairing, and recycling, offers a sustainable path for economic growth.
- Digital technologies like AI and IoT are crucial for integrating these circular models in businesses by enhancing data analysis, flexibility, and process optimization.
- While such models can boost profits and open new revenue streams, few companies have adopted them.
- Thus, exploring how digital technologies can facilitate circular business models is essential.

Source: AI-generated with DALL-E

Research Question

How can organizations implement and utilize digital technologies to establish circular economy practices?

Contact

Katharina Breiter

Approach / Literature

- First possible approach: Structured literature review according to Webster & Watson (2002) on digital technologies and circular economy.
- Second possible approach: Design Science Research according to Sonnenberg und vom Brocke (2012) or Tuunanen et al. (2024).
- Literature: Pagoropoulos et al. (2017) and Zeiss et al. (2021).

Co-Creating the Future: The Impact of AI on Human Creativity in the Workplace

UNIVERSITÄT HOHENHEIM

Motivation

- ChatGPT, Gemini and Microsoft Copilot have made Artificial Intelligence (AI) accessible to all aspects of life and fundamentally transforming them. This shift has significantly impact in professional settings, especially when it comes to creative work. In these areas, AI has shown to be particularly helpful, providing valuable support and enhancing creativity.
- The advent of these technologies has not only transformed the way individuals interact with them on an individual basis but has also significantly altered the collaborative creativity within teams.
- This transformation has yielded multifaceted implications for the creative pursuits of both individuals, groups and the whole organization.

Your own ideas on this topic are more than welcome!

Research Question

How does the integration of AI in the workplace impact individual and collective creativity, and what strategies can be identified to foster and enhance creative processes?

Contact

Kathrin Endres

Frederik Schöttl

Approach / Literature

- Literature analysis on Creativity and AI
- Data collection and analysis to identify strategies to foster and enhance creative processes in the AI era
- Basic Literature:
  - Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. Academy of management journal, 39(5), 1154-1184.
  - Wadinambiarachchi, S., Kelly, R. M., Pareek, S., Zhou, Q., Velloso, E. (2024). The Effects of Generative AI on Design Fixation and Divergent Thinking. Computer Human Interaction 2024
  - Grabner, I., Klein, A., & Speckbacher, G. (2022). Managing the trade-off between autonomy and task interdependence in creative teams: The role of organizational-level cultural control. Accounting, Organizations and Society, 101, 101347.

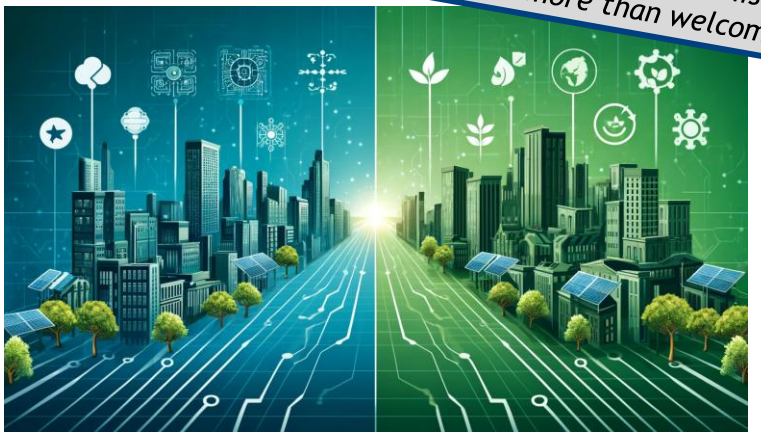
Digital & Sustainability Transformation in Organizations

UNIVERSITÄT HOHENHEIM

Your ideas regarding this topic are more than welcome

Motivation

- Management agendas are currently determined by two trends: digital transformation (DT) and sustainability transformation (ST). Both trends have opened up numerous opportunities for business models.
- The convergence of both trends, namely **twin transformation**, is becoming increasingly important in practice.
- An investigation of the phenomenon is crucial, as managers are increasingly confronted with the digital world and, at the same time, ambitious climate protection targets.
- Yet, the adoption of twin transformation in organizations remain relatively unexplored…



Source: AI-generated with DALL-E

Research Question

- **How can organizations transform digitally and sustainably?**
- **What is the status quo of companies (in a branch of your choice) regarding digital & sustainability transformation?**

Contact

Katharina Breiter

Feline Schnaak

Approach/ Literature

Possible Approach:

- Structured literature review according to Webster & Watson (2002) regarding twin transformation
- Developing a framework (e.g., reference model, taxonomy) according to Schwarz et al. (2007) or Nickerson et al. (2013), which summarizes and visualizes the results of the structured literature review
- Evaluation including focus groups or expert interviews

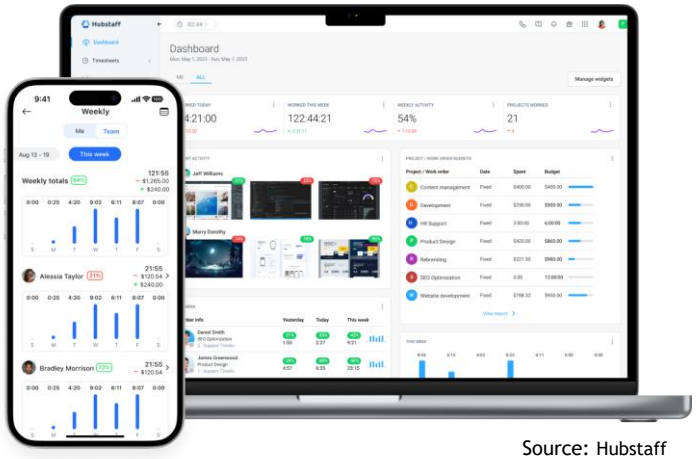
Literature: Breiter et al. (2024), Brenner and Hartl (2021), Graf-Drasch et al. (2023), Zimmer and Järveläinen (2022)

Digital People Analytics – From Monitoring to Empowerment

UNIVERSITÄT HOHENHEIM

Motivation

- The use of people analytics software is becoming increasingly prevalent. Providers such as Hubstaff (illustrated on the right) facilitate the generation and visualization of data, encompassing, for instance, the duration of use of various applications and the localization of employees.
- However, many companies currently lack a comprehensive measurement of success (e.g., of digital work actions), despite the numerous opportunities for tracking through data.
- Although the term monitoring is primarily associated with the supervision of employees, the collection and visualization of data enables the identification of challenges in the daily work of employees, thereby facilitating the implementation of countermeasures.
- This can be particularly beneficial for managers in situations where the team is working in a hybrid mode, which necessitates a reduction in direct contact between managers and employees, as well as between employees themselves.



Source: Hubstaff

Research Question

How can digital people analytics be used to empower and support employees in their work? (e.g., promote productivity and an employee-centric work environment)

Contact

Kathrin Endres

Daniela Grünert

Approach & Literature

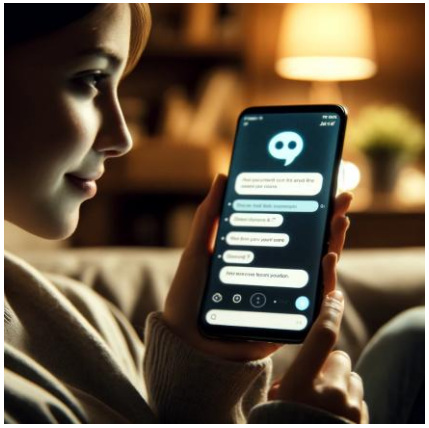
- Literature analysis on Digital People Analytics
- Data collection and analysis to identify strategies to foster and enhance the work and productivity of employees
- Basic Literature:
  - Tursunbayeva, A., Di Lauro, S., & Pagliari, C. (2018). People analytics—A scoping review of conceptual boundaries and value propositions. International journal of information management, 43, 224-247.
  - Siegel, R., König, C. J., & Lazar, V. (2022). The impact of electronic monitoring on employees' job satisfaction, stress, performance, and counterproductive work behavior: A meta-analysis. Computers in Human Behavior Reports, 8, 100227.
  - Manokha, I. (2020). The implications of digital employee monitoring and people analytics for power relations in the workplace. *Surveillance and Society*, *18*(4).
  - Arnold, M. C., Hannan, R. L., & Tafkov, I. D. (2020). Mutual monitoring and team member communication in teams. The Accounting Review, 95(5), 1-21.

Exploring the Potentials of Generative AI for Digital Inclusion

UNIVERSITÄT HOHENHEIM

Motivation

- Society is undergoing profound change as a result of digitalization (Matt et al., 2019).
- To be able to participate in social life in a meaningful way, digital skills in dealing with information systems are increasingly required (Reisdorf and Rhinesmith, 2020).
- At the same time, there are population groups who, due to limited cognitive abilities, are unable to develop the necessary digital skills. These groups face significant challenges in an increasingly digital world and the risk of social exclusion.
- Research should therefore aim to support the development of inclusive information systems that take into account the needs of cognitively impaired individuals. Recent developments in the field of generative AI, in particular ground-breaking multimodal models such as GPT-4o, offer new possibilities in this area.



Source: Generated by DALL-E3

Research Questions

- **How should conversational agents be designed for use by intellectually disabled individuals?**
- **How to design a public transport app for intellectually disabled individuals?**

Contact

Philipp Dilger

Dominik Fetzer

Approach / Literature

- Search and identification of relevant literature: Conduct a structured literature review about existent inclusive design approaches for conversational agents or public transport apps
- Interviews with the target group to identify their specific requirements and possible inclusive design approaches
- Implementation and evaluation of identified inclusive design approaches using a self-developed prototype
- Initial literature: Dewan and Riggins (2005), Working paper: Dilger et al. (2023), Wei et al. (2011), Risser et al. (2015)
- Methodical Approach: Tuunanen, T., Winter, R., & vom Brocke, J. (2024). Dealing with complexity in design science research: A methodology using design echelons. MIS Quarterly, 48(2). https://doi.org/10.25300/MISQ/2023/16700

Gamification in digital applications to support individuals' physical and mental health

UNIVERSITÄT HOHENHEIM

Motivation

- An unhealthy lifestyle, e.g., prolonged sitting, unhealthy diet or stress, are significant risk factors for the development of chronic physical and mental diseases and thus represent a considerable financial burden for the healthcare system
- Numerous digital applications already exist that are designed to motivate individuals to adopt a health-conscious lifestyle through gamification or game design elements (e.g., points, leaderboards, badges, rewards).
- However, there is limited evidence on the effectiveness and impact of gamification in the context of health-conscious behavior and habit building. Moreover, due to their extrinsic incentive strategy, gamified health applications are often used only for a short period of time.
- Because of this research gap, further scientific work is needed on how gamified health applications should be designed to improve the long-term health of their users.

Research Question

How does the integration of gamification into digital health applications influence healthy and sustainable user habits?

Contact Person

Carolin Jung

Approach / Literature

Sample introductory literature of existing gamification studies in the context of health and its potential negative effects:

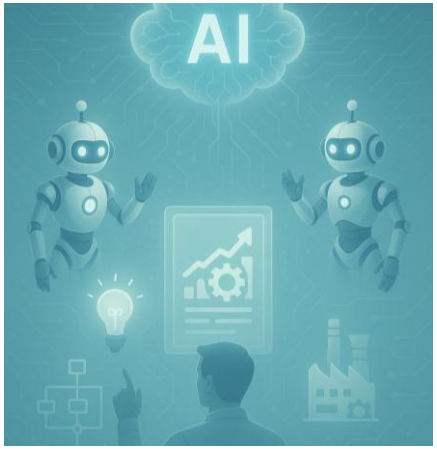
- Johnson et al. (2016) „Gamification for health and wellbeing: A systematic review of the literature"
- Schmidt-Kraepelin et al. (2019) "Gamification in Health Behavior Change Support Systems - A Synthesis of Unintended Side Effects"
- Whelan, E. and Clohessy, T. (2021), "How the social dimension of fitness apps can enhance and undermine wellbeing: A dual model of passion perspective"

Design and implementation of gamification elements using an online experiment or survey, sample literature:

- Schmidt-Kraepelin et al. (2019) „Users' Game Design Element Preferences in Health Behavior Change Support Systems for Physical Activity: A Best-Worst-Scaling Approach"

GenAI-based Multi-Agent Systems

UNIVERSITÄT HOHENHEIM



Source: Generated by Microsoft Copilot

Motivation

- In most companies, complex knowledge work is performed mainly manually for various reasons resulting in low efficiency and high costs.
- GenAI-based Multi-Agent Systems, which push the boundaries of work automation, have the potential to automate complex knowledge work end-to-end, not possible with previous automation approaches.
- However, orchestrating these systems in an appropriate way is challenging. The way in which GenAI-based Multi-Agent Systems can be orchestrated generally and in specific use cases has scarcely been researched to date. Applying flexible and practical methods (e.g., Design Science Research) is required to leverage GenAI-based Multi-Agent Systems' enormous potential.

Research Questions

- **Which orchestration patterns of GenAI-based Multi-Agent Systems exist and are particularly suitable for the automation of complex knowledge work?**
- **What framework conditions should influence the orchestration of GenAI-based Multi-Agent Systems in organizations in which way?**
- **How to design a GenAI-based Multi-Agent System that automates the generation of business process improvements?**

Contact

Dominik Fetzer

Approach / Literature

- Wu et al. (2023). AutoGen: Enabling Next-Gen LLM Applications via Multi-Agent Conversation. https://doi.org/10.48550/arXiv.2308.08155
- Wang et al. (2023). A Survey on Large Language Model based Autonomous Agents. https://doi.org/10.1007/s11704-024-40231-1
- Cheng et al. (2024). Exploring Large Language Model based Intelligent Agents: Definitions, Methods, and Prospects. https://doi.org/10.48550/arXiv.2401.03428
- Xi et al. (2025), The rise and potential of large language model based agents: a survey. https://doi.org/10.1007/s11432-024-4222-0
- Tuunanen, T., Winter, R., & vom Brocke, J. (2024). Dealing with complexity in design science research: A methodology using design echelons. MIS Quarterly, 48(2). https://doi.org/10.25300/MISQ/2023/16700

The Digital Decline - Does Overuse of AI Cause Declines in Cognitive Performance?

UNIVERSITÄT HOHENHEIM

Motivation

- As a result of their beneficial abilities, AI applications become more integrated into our everyday lives
- Recent studies indicate that a frequent use of AI tools (such as ChatGPT) might lead to increased offloading, resulting in diminished critical thinking abilities (Gerlich 2025)
- Reliance on AI for academic tasks can lead to a significant decrease in accuracy in comprehension assessments (Ju 2023)
- AI users might overestimate their understanding and problem-solving skills due to AI assistance (Prather et al. 2024), while overdependence on AI can cause impediments in developing crucial soft skills like creativity, problem-solving and decision-making (Monib et al. 2024)

Source: GPT-4o

Research Question

1. **How does AI usage influence individuals' cognitive capabilities?**
2. **What interventions can prevent or mitigate cognitive decline associated with excessive AI use?**

Contact

Dominik Becker

Approach / Literature

- Structured literature review of existing research (Webster & Watson 2002)
- Semi-structured interviews with AI and cognitive health experts
- Literature: Gerlich 2025, Ju 2023, Prather et al. 2024, Monib et al. 2024

There is AI in SustAInability

UNIVERSITÄT HOHENHEIM

Motivation

- The world is facing a series of huge sustainability-related problems, which together are called grand challenges
- In 2015 the United Nations published its 17 Sustainable Development Goals, an urgent, important, and strategic call for solutions to these grand challenges.
- Artificial intelligence (AI) is an all-changing technology, which is more ubiquitous than ever in public discourse due to a giant leap forward in generative AI technology
- With a steadily increasing use, questions on ethical and virtuous use of AI arise
- If put in use sustainably, AI may open up great opportunities for taking sustainable development to the next level
- Even though first research endeavors on AI for environmental sustainability exist, efforts to structure the existing knowledge to motivate future research endeavors are missing and already defined as a research need

Research Questions

- **How can AI be employed for environmental sustainability?**
- **How are existing classification systems for AI for environmental sustainability evaluated by experts in the domain?**

Proposed Method

There are manifold possibilities for evaluation of existing classification systems for AI for environmental sustainability following Nickerson et al. (2013) and Kundisch et al. (2022):

- Interviews/focus groups with experts
- Case studies of organizations employing AI for environmental sustainability
- Clustering of AI systems as quantitative approach

Source : https://www.majorel.com/future-customer/science-and-research/artificial-intelligence-and-sustainability/

Contact

Feline Schnaak

Exemplary Literature

- Nishant et al. (2020)
- Kar et al. (2022)
- Schoormann et al. (2023)
- Goralski and Tan (2020)
- Vinuesa et al. (2020)

Tomorrow‘s Talents:
Shifting Competencies in the Digital Age

UNIVERSITÄT HOHENHEIM

Motivation

- Especially through (generative) AI, the requirements for employees are changing rapidly. What has been perceived as necessary competency in recent years may no longer be relevant in a few years.
- In addition to established competencies, such as critical thinking, new competencies such as AI competencies are emerging and gaining importance.
- What are the competencies of the future? This change in competencies is rapid and should be explicitly considered in the future. Only through the observation of these requirements can students, employers, and employees prepare for the workplace and be ready for the future of work in the digital age.

Your own ideas on this topic are more than welcome!

Source: Microsoft Copilot

Research Question

What competencies will be most crucial in the future workforce, and how will they evolve amidst technological advancements and socio-economic changes?

Contact

Frederik
Schöttl

Approach / Literature

- Structured literature review (e.g., Webster & Watson, 2002) on future competencies. Developing a framework (e.g., Schwarz et al., 2007), which summarizes and visualizes the results of the structured literature review.
- Semi-structured interviews or moderated focus group (e.g., Myers & Newman, 2007) with HR-Experts.
- Survey to measure shifts of competencies.
- Literature for orientation: van Laar et al., 2019, Merchel et al., 2021; Eloundou et al., 2023; Gimpel et al., 2023