

Green Sport Events durch digitale Transformation

Smarter. Grüner. Weiter. Wie Sportevents digital nachhaltig werden

Beschreibung des Themas

Sportgroßveranstaltungen (z. B. Olympische Spiele, Fußball-WMs, etc.) erzeugen erhebliche ökologische Fußabdrücke, unter anderem durch An- und Abreise, Energieverbrauch, Abfall und Konsum. Gleichzeitig bietet die Digitalisierung neue Instrumente, um Veranstaltungen nachhaltiger zu gestalten: etwa durch digitale Planung, Mobilitätssteuerung, Echtzeitmonitoring, virtuelle Eventangebote oder intelligentes Energiemanagement.

Diese Arbeit soll untersuchen, **wie digitale Technologien konkret dazu beitragen können, die ökologische Wirkung von Sportevents zu reduzieren**, welche Konzepte sich bereits bewährt haben und welche Herausforderungen in der Praxis bestehen. Mögliche Forschungsfragen sind „Welche digitalen Maßnahmen zur Reduktion des CO₂-Fußabdrucks von Sportevents existieren aktuell und wie wirksam sind sie?“ und „Wie lässt sich der Erfolg digital gestützter Nachhaltigkeitsmaßnahmen bei Sportevents messen?“.

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Literaturhinweise

- Glebova, E., Gerke, A., Book, R. (2023). The Transformational Role of Technology in Sports Events. In: Basu, B., Desbordes, M., Sarkar, S. (eds) Sports Management in an Uncertain Environment . Sports Economics, Management and Policy, vol 21. Springer, Singapore. https://doi.org/10.1007/978-981-19-7010-8_8
- Meza Talavera, A., Al-Ghamdi, S. G., & Koç, M. (2019). Sustainability in Mega-Events: Beyond Qatar 2022. *Sustainability*, 11(22), 6407. <https://doi.org/10.3390/su11226407>
- Parent, M.M., & Ruetsch, A. (2020). Managing Major Sports Events: Theory and Practice (2nd ed.). Routledge. <https://doi.org/10.4324/9780429326776>

Faire Kompensationsmechanismen für Unternehmen in der strategischen KI-Kollaboration

Beschreibung des Themas

Künstliche Intelligenz hat sich zu einer Schlüsseltechnologie für strategische Unternehmensentscheidungen entwickelt. Um Datenknappheit zu überwinden, kooperieren Unternehmen (z.B. Wettbewerber) zunehmend, um mithilfe komplementärer Datensätze gemeinsame Modelle für strategische Ziele zu trainieren. Besonders vielversprechend hierfür sind kollaborative, verteilte Lernmethoden, da sie ohne Austausch von Rohdaten auskommen und Datenschutzrisiken reduzieren. Allerdings leisten Firmen dabei unterschiedlich große Beiträge zur Modelleistung, was als unfair empfunden werden kann. Dies schmälert die Bereitschaft zur Datenteilung und gefährdet potenzielle Vorteile wie Effizienzgewinne und Innovation. Bisher fehlt es an fundiertem Wissen über konkrete Ausgestaltungen fairer Kompensationsmechanismen, die unterschiedliche Beiträge angemessen kompensieren.^{1,2,3}

Forschungsfragen:

- Welche ökonomischen Kompensationsmechanismen können eine faire und nachhaltige Beteiligung von Organisationen im kollaborativen AI Learning unterstützen?
- Wie unterscheiden sich diese Mechanismen in Bezug auf ihre zugrunde liegende Logik, ihre Anreizwirkungen und ihre kontextuelle Anwendbarkeit?

Methode:

1. Experteninterviews: Fachexperten werden befragt, um Einblicke in potenzielle Kompensationsmechanismen zu gewinnen.⁴
2. Qualitative Analyse: Die Interviewdaten werden systematisch mittels qualitativer Codierung ausgewertet, um ein erstes Konzept abzuleiten.^{5,6}

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Literaturhinweise

- 1 - Rafi, T. H., Noor, F. A., Hussain, T., & Chae, D. K. (2024). Fairness and privacy preserving in federated learning: A survey. *Information Fusion*, 105, 102198.
- 2 - Su, C., Yu, G., Wang, J., Li, H., Li, Q., & Yu, H. (2024, March). Multi-Dimensional Fair Federated Learning. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 38, No. 13, pp. 15083-15090).
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Erfolgsfaktoren und Handlungsempfehlungen für den Aufbau digitaler Plattformen in etablierten Unternehmen

Beschreibung des Themas

In einer Wirtschaft, die zunehmend von **digitalen Plattformen geprägt** ist, streben immer mehr etablierte Unternehmen mit traditionellen, produktzentrierten Geschäftsmodellen danach, digitale Plattformen in ihre Betriebsabläufe zu integrieren. In jüngster Vergangenheit hat sich dabei jedoch herausgestellt, dass diese Plattforminitiativen sich oftmals nicht beständig am Markt etablieren können. Die aktuelle Forschung beleuchtet theoretisch **verschiedene Erfolgsfaktoren** digitaler Plattforminitiativen. Trotz steigender wissenschaftlicher Aufmerksamkeit bleibt jedoch weitgehend unklar, **welche konkreten Handlungsoptionen** Unternehmen nutzen können, um die **Erfolgschancen beim Aufbau solcher Plattformen zu steigern**. Ebenso fehlen **praxisnahe Ansätze** zur Bewertung der **Ausgangssituation** von Unternehmen entlang verschiedener Dimensionen.^{1,2,3}

Forschungsfragen:

- Welche Handlungsalternativen ergeben sich für Unternehmen, um ihre Erfolgswahrscheinlichkeiten für den Aufbau digitaler Plattformen zu erhöhen?
- Wie lassen sich Erfolgsfaktoren für digitale Plattformen aus praktischer und akademischer Sicht messen?

Methode:

1. **Literaturrecherche:** Der aktuelle Forschungsstand wird anhand einer detaillierten Analyse bestehender wissenschaftlicher Literatur zusammengefasst.
2. **Experteninterviews:** Fachexpert*innen werden befragt, um Erkenntnisse über praktische Handlungsoptionen zu identifizieren und weiter zu denken.⁵

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Literaturhinweise

- 1 - Teece, D., Pundziene, A., Heaton, S., and Vadi, M. 2022. "Managing Multi-Sided Platforms: Platform Origins and Go-to-Market Strategy," CALIFORNIA MANAGEMENT REVIEW (64:4), 48pp. 5-19.
- 2 - Jesus, L., Rosemann, M., Desouza, K. C., and Kowalkiewicz, M. 2024. Why Digital Platforms by Incumbents Fail: Results from a Delphi Study, (54:1).
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Seeing Beyond the Now: Strategic Foresight as a Catalyst for Digital Transformation and Innovation

Beschreibung des Themas

Strategic Foresight has emerged as a critical capability for organizations facing rapid technological change, growing complexity, and increasing uncertainty. By systematically anticipating and exploring possible futures, organizations can identify emerging opportunities and risks, shape innovation pathways, and make better-informed strategic decisions. In the context of digital transformation and IT innovation management, Strategic Foresight offers a structured approach to proactively align technology investments and innovation initiatives with long-term strategic goals. This seminar paper should explore the potential of Strategic Foresight to strengthen digital transformation efforts and enhance the management of IT-driven innovation. While many organizations recognize the need for long-term thinking, few have successfully embedded foresight practices into their strategic and operational processes. This gap limits their ability to stay competitive in dynamic markets and often results in reactive, short-term planning. The paper invites students to critically examine the principles, methods, and organizational enablers of foresight, and to evaluate how these can support value creation through digital innovation.

Students are encouraged to investigate frameworks and methodologies such as scenario planning, horizon scanning, and others. Relevant themes may include how foresight is operationalized in, how it informs strategic planning, and how it supports innovation management. Students should apply a structured literature review to identify, analyze, and synthesize relevant academic and practitioner insights, with optional case study analysis to illustrate real-world applications.

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Iden, J., Methlie, L., Christensen, G., 2017. The nature of strategic foresight research: A systematic literature review. *Technological Forecasting and Social Change* 116, 87-97.
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Digital identities for monitoring strategic behavior in local flexibility markets

Beschreibung des Themas

Local flexibility markets offer new opportunities for the efficient integration of distributed energy resources to balance the increasingly volatile electricity generation and consumption. Electric flexibility is the power adjustment from a planned baseline for a given duration in a specific location within the grid. While these flexibility markets promise great potential to resolve grid congestion, they also offer the possibility for strategic behavior, where participants deliberately manipulate their flexibility bidding strategies to create artificial scarcity or distort market outcomes to their advantage. One way to manipulate is the commitment on a forged baseline and offering the difference to the actual baseline as flexibility potential. Such behavior can not only reduce market efficiency and fairness but also threaten security of supply and necessitate regulatory interventions.

To address these challenges, effective mitigation strategies must be developed to ensure fair market pricing and prevent manipulation. These include targeted market rules such as price caps or minimum bid quotas to prevent excessive price spikes. Algorithmic measures, such as the analysis of historical bidding patterns, can contribute to detecting market distortions. Finally, regulatory measures play a crucial role by establishing clear frameworks for market participants while ensuring market transparency.

Additionally, verifiable master and transactional data can build a foundation for the efficient monitoring of baselines, the detection of forged offers and eventually the mitigation of opportunities for strategic behavior. In this seminar paper, students will dive into the field of **digital identities** at the intersection to **local flexibility markets** and the potential to identify and mitigate strategic behavior, especially forged asset baselines.

The seminar paper should employ **design oriented research** to conceptualize how digital identities can help to identify forged asset baselines and therefore mitigate strategic behavior in local flexibility markets.

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Literaturhinweise

- Marc-Fabian Körner, Lars Nolting, Matthias Babel, Marvin Ehaus, Paula Heiß, Jonathan Lautenschlager, Malin Radtke, Leo Schick, Jens Strüker, Stefanie Wiedemann, Till Zwede (2024). A digital Infrastructure for Integrating Decentralized Assets into Redispatch. In: Bayreuther Arbeitspapiere zur Wirtschaftsinformatik. Bayreuth. DOI: 10.15495/EPub_UBT_000076
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Leveraging DPPs and AAS for Lifecycle-Based Flexibility Integration in Energy Systems

Beschreibung des Themas

Digital Product Passports (DPPs) are gaining increasing relevance in light of regulatory developments such as the EU's Ecodesign for Sustainable Products Regulation (ESPR), as companies are being required to provide verifiable sustainability data at the product level. At the same time, the Asset Administration Shell (AAS) is emerging as a standardized digital twin for technical assets, initially in industrial manufacturing, but with growing importance for energy-related applications.

A research gap exists in harmonizing both concepts and applying it to the energy system. Particularly, regarding their use for the integration and utilization of flexibility. DPPs, for instance, could be used to represent information on the technical characteristics relevant for grid operators, environmental impacts demanded by consumers, or regulatory compliance requested by production partners of flexible energy assets.

Against this background, the aim of this seminar paper is to analyze, based on a structured literature review (cf. Garousi et al. 2019), how AAS and DPPs can jointly contribute to the identification, aggregation, and monetization of decentralized flexibility, for example through the design of a domain-specific "Flexibility Passport." The study should examine both the technological foundations and the opportunities and challenges of implementing DPPs and AAS within the energy system.

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Literaturhinweise

- Adisorn, T.; Tholen, L.; Götz, T. Towards a Digital Product Passport Fit for Contributing to a Circular Economy. *Energies* 2021, 14, 2289. <https://doi.org/10.3390/en14082289>.
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Künstliche Intelligenz im Stromhandel - Ökonomische Potenziale KI-gestützter Gebotsstrategien im Day-Ahead-Markt

Beschreibung des Themas

Hintergrund: Im liberalisierten Strommarkt erfolgt die Preisbildung für Energie überwiegend über **Day-Ahead-Auktionen**, bei denen Erzeuger und Verbraucher auf Basis von Prognosen und Strategien Gebote abgeben. Mit zunehmender Marktvolatilität durch den Ausbau erneuerbarer Energien, Speichersysteme und neuer Akteure (z. B. Prosumer, Aggregatoren) steigt die Komplexität der Gebotsfindung erheblich. **Künstliche Intelligenz (KI)** - insbesondere Verfahren wie **Reinforcement Learning**, **Forecasting mit neuronalen Netzen** oder **Agentenbasierte Modellierung** - verspricht hier neue Möglichkeiten zur **automatisierten und adaptiven Entscheidungsunterstützung** bei der Erstellung von Preis- und Mengengeboten. Insbesondere der Einsatz von **Energieflexibilität auf der Nachfrageseite** bietet hier einen spannenden Anwendungsfall, da KI dazu beitragen kann, Flexibilitätspotenziale (z.B. durch zeitliche Lastverschiebungen) besser auszunutzen und entsprechende Gebotsstrategien zu entwickeln.

Mögliche Fragestellungen: Was versteht man unter Gebotsstrategien auf Day-Ahead-Märkten (z. B. EPEX SPOT)? Welche KI-Systeme sind bei der Entwicklung von Gebotsstrategien ggf. bereits im Einsatz? Wie können KI-gestützte Gebotsstrategien zur Optimierung der Teilnahme an Day-Ahead-Strommärkten beitragen, z.B. mit Blick auf den Einsatz von Energieflexibilität?

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Literaturhinweise

- Aliabadi, D. E., & Chan, K. (2022). The emerging threat of artificial intelligence on competition in liberalized electricity markets: A deep Q-network approach. *Applied energy*, 325, 119813.
- Eseosa, O., & Onyendi, A. (2020). Comprehensive Review on Artificial Intelligent Techniques on Bidding Strategies in Competitive Electricity Markets. *Research Journal of Nanoscience and Engineering*, 4(1), 20-31.
- Wu, J., Wang, J., & Kong, X. (2022). Strategic bidding in a competitive electricity market: An intelligent method using Multi-Agent Transfer Learning based on reinforcement learning. *Energy*, 256, 124657.

Transforming Unstructured Data into Strategic Insights

LLM Applications in Sustainability Risk Management

Beschreibung des Themas

Organizations increasingly rely on data-driven insights to address complex challenges, such as those related to sustainability risk management. In this context, a significant amount of valuable organizational data remains unstructured and underutilized. This includes for example reports, regulatory documents, internal communications, and external sources. Large language models (LLMs) have the transformative potential to automatically identify and extract structured information from these sources. In the context of sustainability risk management, LLMs can identify specific entities (e.g., indicators for climate risks, their impacts, and affected locations), relationships (e.g., "company exposed to climate risk in region"), and other critical information from raw textual content. Converting unstructured text into structured data enables advanced data analysis, risk modeling, and decision support systems, which are essential for proactive sustainability risk management.

This seminar paper aims to conduct a structured literature review and, optionally, semi-structured interviews with experts on the use of LLMs for information extraction in the context of sustainability risk management. Based on the findings, the seminar paper will derive design objectives in the spirit of design science research to guide the development of systems that effectively transform unstructured sustainability-related information into a structured format suitable for predictive analytics and strategic risk insights.

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Huang, Y. (2025). Advancing industrial sustainability research: a domain-specific large language model perspective. *Clean Technologies and Environmental Policy*.

Kong, K. Y., & Yuen, K. F. (2025). Sustainability risk management: Exploring the role of artificial intelligence capabilities through an information-processing lens. *Risk Analysis*, 45(3), 563-580.

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When Process Mining Changes More Than Processes

Uncovering the Transformative Effects of Process Mining on Structures, Process Orientation, and Related Management Disciplines

Beschreibung des Themas

Process mining (PM) is widely recognized for its ability to generate data-driven insights into the actual execution of business processes. While its analytical power promises to improve operational transparency and enable targeted process improvements, PM also implicitly challenges established structures, roles, and ways of thinking within organizations. As a result, its implementation often triggers more than just technical adjustments: it can reshape responsibilities, shift governance logics, and transform the way organizations approach processes altogether. Despite this potential, organizations frequently discontinue PM initiatives or struggle to integrate PM sustainably into their broader process management landscape. Building on recent findings about the discontinuance of PM, this seminar paper aims to investigate the structural and cultural transformations that PM may trigger, and why these transformations often remain incomplete or contested. Specifically, the seminar paper should explore how PM initiatives interact with existing structures, what organizational tensions arise in the process, and to what extent PM can or cannot create better organisations.

Students are encouraged to analyze this phenomenon through the lens of organizational theory, digital transformation, or sociotechnical change. A structured literature review should be used to identify relevant theoretical perspectives. Depending on interest, the work may also include the analysis of illustrative cases from industry or research. The goal is to conceptualize how process mining initiatives contribute to – or clash with – process orientation in organizations, and to what extent PM acts as a catalyst or disruptor of existing structures.

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- Mamudu, A., Bandara, W., Wynn, M.T. et al. Process Mining Success Factors and Their Interrelationships. *Bus Inf Syst Eng* (2024). <https://doi.org/10.1007/s12599-024-00860-z>
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Quantifying the Business Value of Process Mining

Uncovering the Path from Insights to Value in Organizational Processes

Beschreibung des Themas

Leveraging process data through process mining (PM) has become an essential tool for enhancing organizational efficiency, effectiveness, and overall performance by providing insights into the actual execution of business processes. This process involves using PM to gain insights, implementing actions to improve processes, and ultimately generating value for the organization. However, the true potential of PM lies in its ability to not only provide insights but also to quantify and evaluate the tangible and intangible value generated through subsequent actions. Despite its promise, many organizations still struggle with value realization in the final step of the insights-action-value chain, often due to a lack of structured methodologies for quantifying and evaluating the business value of PM initiatives.

This seminar paper aims to tackle these challenges by focusing on principles, methodologies, and frameworks for quantifying and evaluating the value created through PM. Students are invited to propose systematic approaches to measure the impact of PM on organizational efficiency, effectiveness, performance, and other key dimensions. To enrich the analysis, students are encouraged to draw upon methodologies and insights from neighboring disciplines, such as business analytics, business intelligence, big data analytics, and value-based management. Students should ideally employ a structured literature review to identify, analyze, and synthesize relevant theories, methodologies, and case studies from existing research.

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Operationalizing the Twin Transformation:

A Structured Literature Review on Action Fields for IT Managers

Beschreibung des Themas

Europe's "Digital Decade" program and many national agendas frame digitalization and sustainability as two mutually reinforcing transformations - the so-called twin transformation. Boards expect CIOs and other IT managers to translate this vision into concrete roadmaps, architectures, projects, and metrics.

Yet, academic and practical guidance is still scattered across publications on digital transformation, Green IS, digital sustainability, and business/IT alignment. Further, many publications remain high-level with little or no actionable guidance. A systematic integrated perspective on concrete action fields is therefore needed.

The seminar paper aims at conducting a multi-vocal literature review (MLR) (Gramlich et al. 2023) with the objective to synthesize how IT managers can operationalize the twin transformation, i.e. move from vision to action. The review seeks to identify which concrete organizational and technological measures, capabilities, and day-to-day practices the literature recommends for IT managers when translating the twin transformation from vision into action. Further, it explores the contingency factors—such as industry context, firm size, regulatory pressure, governance modes, or cultural readiness—that the literature identifies as shaping the selection and effectiveness of those measures.

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Privacy as a Design Option for Central Bank Digital Currency

Beschreibung des Themas

As digital payments become increasingly dominant, many central banks are investigating or developing Central Bank Digital Currencies (CBDCs). One prominent example is the Digital Euro, currently being explored by the European Central Bank. A key challenge in the design of CBDCs is how to incorporate privacy in a way that meets both societal expectations and regulatory requirements. Public discourse reveals strong concerns over the possibility of state surveillance, financial profiling, and erosion of privacy rights. For a CBDC to be accepted and trusted by users, it must address these concerns while still allowing for sufficient transparency, security, and compliance with anti-money laundering (AML) and counter-terrorism financing (CTF) regulations. Privacy is thereby not a binary concept but can be implemented in multiple levels and forms, for instance, protecting user identities, anonymizing transaction metadata, or limiting access to transaction histories. Various technical solutions have been proposed to enable privacy-preserving features, including zero-knowledge proofs (ZKPs), blind signatures, ring signatures, selective disclosure, and token-based systems. However, these mechanisms come with important trade-offs: enhanced privacy might conflict with auditability, introduce new security vulnerabilities, or complicate system governance.

The seminar paper aims to conduct a **structured literature review to examine how privacy is addressed in the design of Central Bank Digital Currencies (CBDCs)**. It should explore different privacy models and levels, assess the technical mechanisms used to implement them, and evaluate their respective benefits, limitations, and potential security risks. The goal is to provide a comprehensive understanding of the trade-offs between privacy, trust, and regulatory requirements in CBDC systems.

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Unveiling Digital Organizational Identity: A Study of Its Definition, Role, and Implications for Supply Chain Management

Description of the topic

In the digital age, 'digital identity' is increasingly significant for both individuals and organizations. For organizations, it offers credible and verifiable insights tied to crucial aspects such as sustainability, compliance, and production processes. In Supply Chain Management (SCM), where transparency, accountability, and efficiency are vital, an organization's digital identity is essential in providing clear, verifiable information about operations, boosting effectiveness and trust. However, academic discussions on 'digital organizational identity' are limited, and the link between individual digital identities and digital organizational identity is underexplored.

This seminar paper aims to focus on developing, managing, and understanding the implications of digital organizational identity for SCM. It addresses key questions: Why is a distinct digital identity necessary for organizations in SCM? How does it differ from or align with individual digital identities? What benefits and challenges does it present in SCM contexts?

To explore these questions, the research might conduct a thorough literature review from fields such as organizational behavior, information systems, and supply chain management. It will also examine existing discussions on digital identities for individuals, identifying parallels or differences in the organizational setting. The study aims to create a framework to understand digital organizational identity, through the lens of SCM, forming the basis for further research and specialized studies in this area.

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Auswirkung der geschlechtsspezifischen Wahrnehmung von Künstlicher Intelligenz (KI)

Eine experimentelle Untersuchung

Beschreibung des Themas

Hintergrund: Entscheidungen werden im **Arbeitsumfeld** häufig getroffen, sei es bei der Auswahl der Bewerbenden, in der medizinischen Diagnose oder im Management. Dabei kommen immer häufiger **KI-basierte Informationssysteme zum Einsatz**, die die Entscheidungen unterstützen oder sogar treffen sollen. Jedoch scheint es immer wieder Probleme mit Stereotypen und Bias bei den von der KI getroffenen Entscheidungen zu geben. Auch in der **Presse** gibt es hierzu kritische Stimmen, z. B. wenn KI-basierte Technologien diskriminierende Einstellungsentscheidungen treffen. Bei anderen Technologien (z. B. VR) konnten Forschende bereits zeigen, dass der Stereotype Threat eine Rolle spielt (z. B. Fordham et al. 2020). Beim Stereotype Threat handelt es sich um ein Phänomen, das auftritt, wenn Personen Angst haben nach einem negativen Stereotyp beurteilt zu werden und aus dieser Angst heraus tatsächlich dann schlechtere Leistung erbringen (Steele 1997).

Ziel der Seminararbeit: Im Rahmen der Seminararbeit soll deshalb ein Experiment entworfen werden, das untersucht, ob eine geschlechtsspezifische Wahrnehmung von KI (z. B. ChatGPT oder Service-KIs) einen Stereotype-Threat-Effekt auslösen kann.

Aufgabe der Seminararbeit: Entwicklung eines experimentellen Designs und erste Durchführung des Experiments an einer kleinen Stichprobe.

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