

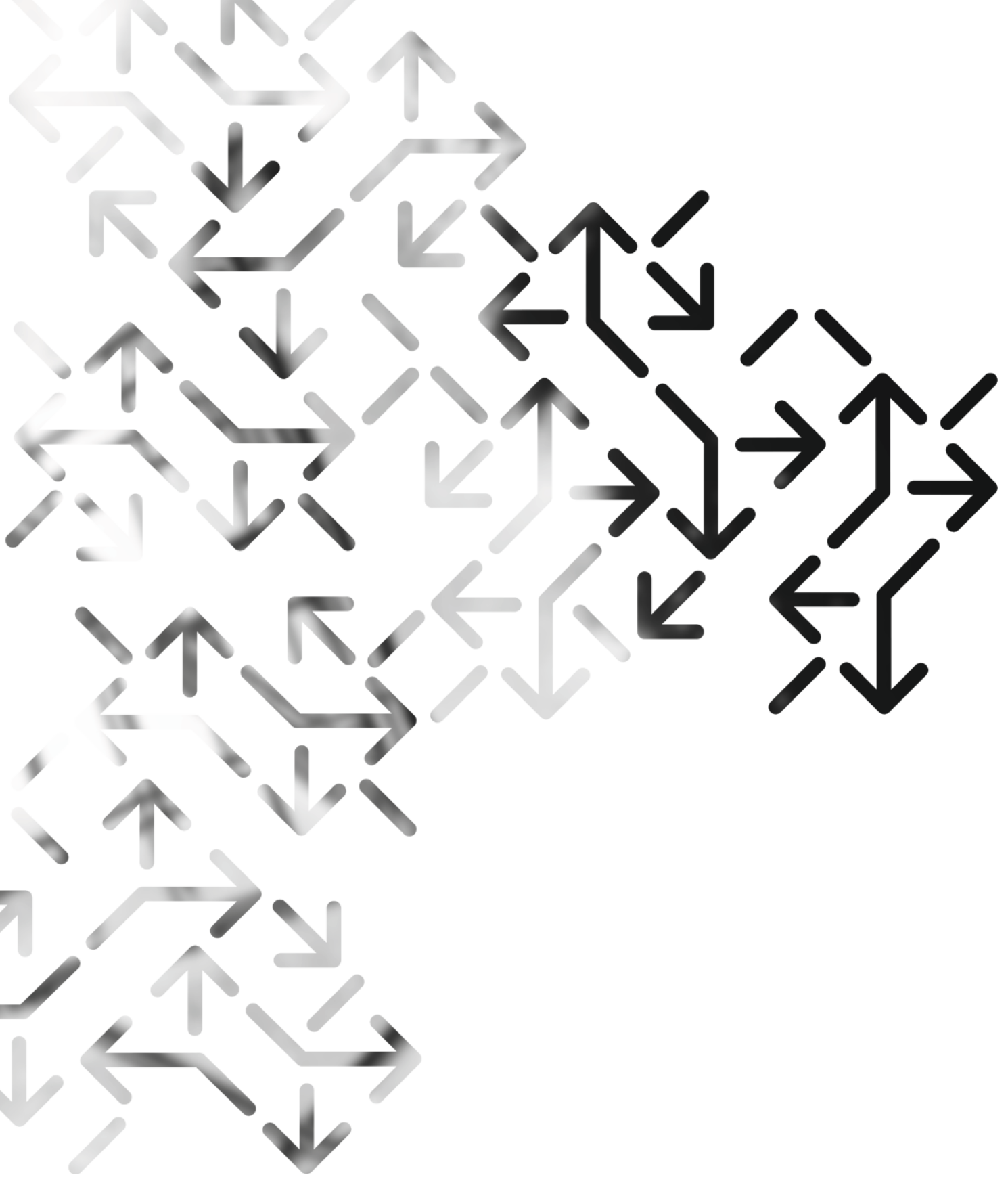
# NIM INSIGHTS

ISSUE 2024 | 02



## RESEARCH HIGHLIGHTS 2023|24

FROM GENUINE SUSTAINABILITY TO AI FRONTIERS AND CONSUMER TRUST



Dear Readers,

Welcome to a new edition of NIM INSIGHTS, the research magazine of the Nuremberg Institute for Market Decisions (NIM). This special research review edition covers groundbreaking studies from 2023 and 2024, providing an in-depth look at NIM's research activities and their outcomes. Our goal is to equip you with valuable insights and strategies to navigate the evolving market dynamics and address pressing issues facing businesses and consumers today.

We delve into the significance of genuine sustainability versus greenwashing, offering strategies to rebuild consumer trust and guide sustainable choices. This is particularly important as consumers become more environmentally conscious and demand authentic green action from brands.

Our research also highlights the transformative role of AI in marketing, from virtual characters to generative AI applications. These innovations are reshaping consumer engagement, and our findings provide practical insights for leveraging these technologies effectively.

Understanding consumer behavior remains central to our research. We address the gap between attitudes and actions regarding sustainability claims, providing strategies to bridge this divide and enhance consumer trust.

Additionally, we examine future trends such as marketing in the metaverse and the challenges and opportunities within the innovation landscape. These insights are vital for staying ahead of the curve and preparing for the future of marketing.

This edition aims to equip you with actionable insights and strategies to navigate the evolving market dynamics. We hope you find it both informative and inspiring.

Enjoy your read,

*Dr. Matthias Unfried*  
Head of Behavioral Science

*Dr. Fabian Buder*  
Head of Future & Trends Research





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DIE  WELT

## KONSUMKLIMA AUF HÖCHSTEM STAND SEIT ZWEI JAHREN

26.04.2024

Insgesamt gilt das Niveau aber weiterhin  
als niedrig

Frankfurter Allgemeine

## BELIEBTER CO<sub>2</sub>-AUSGLEICH

24.04.2024

SPIEGEL ONLINE

## KONSUMLAUNE DER DEUTSCHEN HELLT SICH AUF – MINIMAL

28.11.2023

Die Laune der Verbraucherinnen und Verbraucher  
bessert sich etwas. Händler erwarten trotzdem  
ein eher verhaltenes Weihnachtsgeschäft.

## DEUTSCHE WOLLEN KLIMASCHUTZ- VORREITER SEIN, ABER KEINE CO<sub>2</sub>-ABGABE ZAHLEN

07.02.2024

Deutschland soll eine Vorreiterrolle beim  
Klimaschutz übernehmen, sagt mehr als die Hälfte  
der Bürger laut einer Umfrage. Doch ein Großteil  
widerum lehnt genau das Instrument ab, das  
Ökonomen für wirkungsvoll halten.

FOCUS  MONEY

## AUF AUGENHÖHE

28.11.2023

Aufgrund der hohen Ausfallrisiken sind die Vergabericht-  
linien von Darlehen der Banken an Selbstständige und Frei-  
berufler streng. Bei welchen Kreditinstituten diese  
Berufsgruppen – eine gute Bonität des Kreditnehmers  
vorausgesetzt – auf aktuell herausragende  
Konditionen stoßen

## SCHÖN SHOPPEN MACHT SPASS

29.04.2024

Egal, ob Auto oder Küche: Die Deutschen greifen zu deren  
Finanzierung gern mal zum Darlehen. Die besten  
bonitätsabhängigen Bankkredite im Überblick.

**Wirtschafts  
Woche**

**Frankfurter  
Rundschau**

## DER VERBRAUCHER IST RÄTSELHAFT RATIONAL

15.04.2024

Steigende Löhne, sinkende Inflation – eigentlich müssten Konsumenten jetzt in Kauflaune sein, die Konjunktur anschieben. Das Problem: Die Politik verunsichert.

## ABLASSHANDEL FÜRS KLIMA

19.04.2024

Greenwashing-Skandale bringen das Kompensieren von CO<sub>2</sub> in Verruf, trotzdem finden viele Deutsche das Instrument gut. Eine neue EU-Richtlinie soll nun dafür sorgen, dass Firmen ihre Umweltversprechen eindeutig belegen.

Handelsblatt

## WIE DIE GENERATION Z DEN ARBEITSMARKT AUFMISCHT

18.08.2023

Die Arbeitsmoral der Jüngeren wird von Älteren immer wieder kritisiert. Dabei liegen die Vorstellungen vom Job zwischen den Generationen gar nicht so weit auseinander. So könnten sich beide Seiten annähern.

## KONSUMENTEN BESTRAFEN VERDACHT AUF GREEN- WASHING SOFORT

24.07.2023

Eine Studie zeigt: Verbraucher meiden Unternehmen, denen falsche Klimaversprechen vorgeworfen werden. Werbung mit Prominenten hilft dabei auch nicht.

## ZUVERSICHT IST KEIN SELBSTZWECK

16.04.2024

In Krisen wollen Unternehmen Fehler vermeiden. Dabei kommt es gerade jetzt auf Experimentierfreude an.

## KONSUMFLAUTE BELASTET DEN ARBEITSMARKT

22.12.2023

Nach leichtem Rückgang im November ist der Indikator wieder gestiegen. Firmen sind verunsichert.

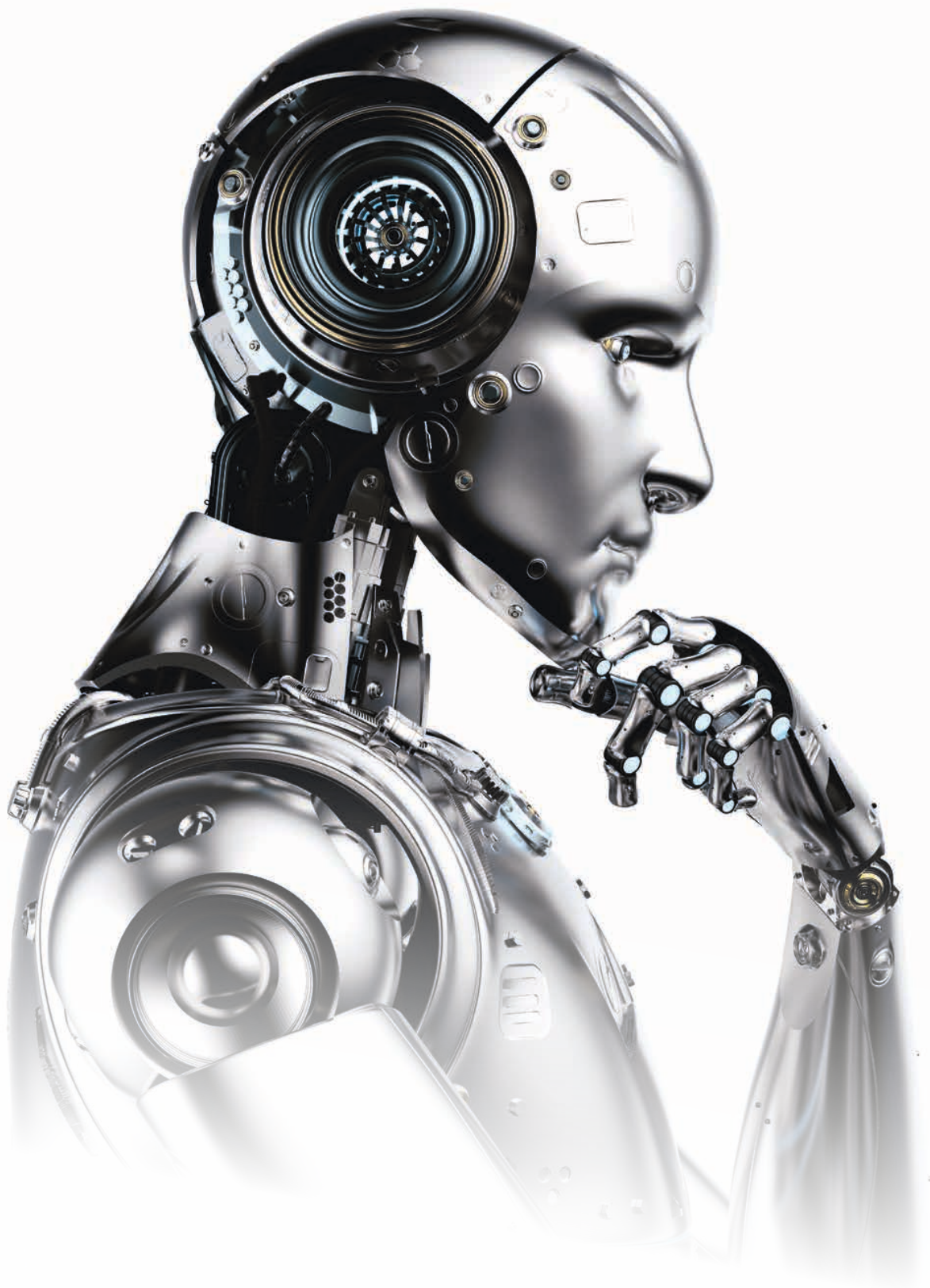
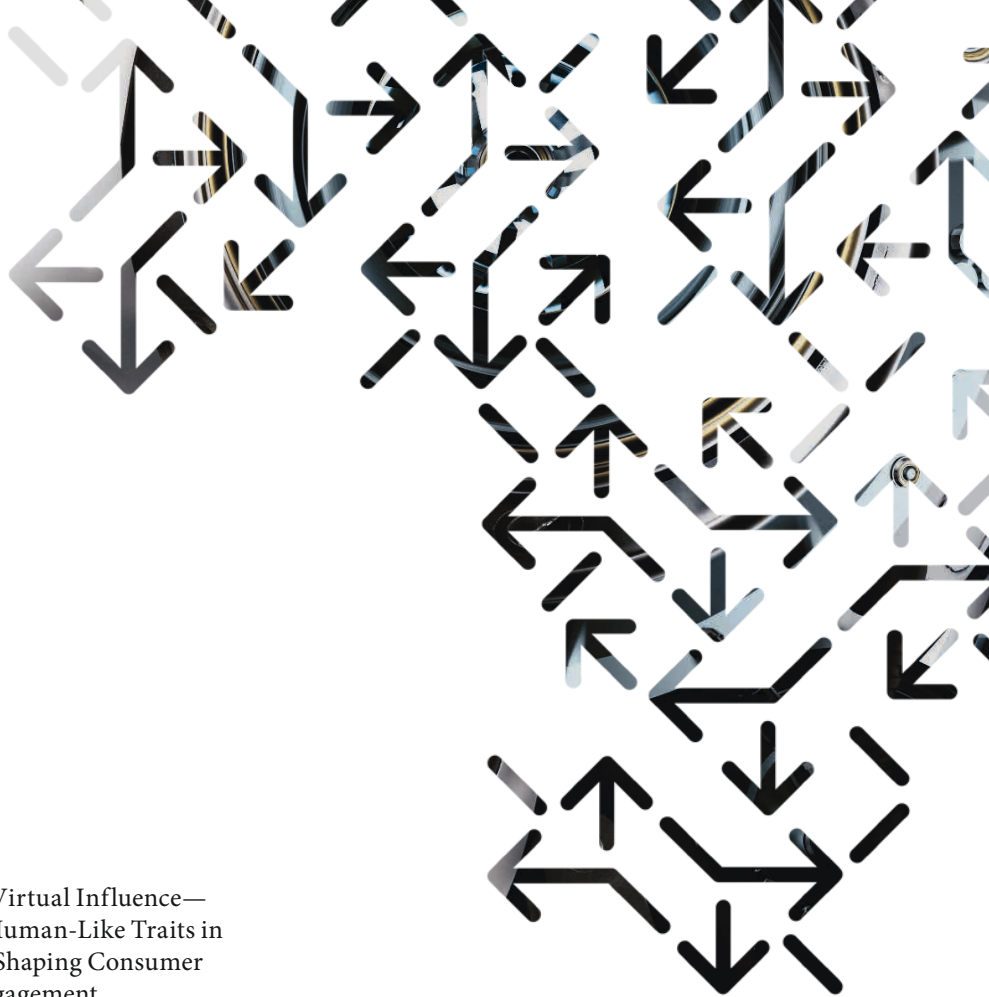


PHOTO: PHONLAMA/PHOTO. ISTOCK





### **Artificial Intelligence**

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Digital Characters for Shaping Consumer  
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# **RESEARCH PROJECTS**

# THE HUMAN FACTOR IN VIRTUAL INFLUENCE

## Decoding the Role of Human-Like Traits in Digital Characters for Shaping Consumer Choices and Brand Engagement

Team: Carolin Kaiser, Rene Schallner, Vladimir Manewitsch

**D**igital marketing has been transformed by the advent of virtual characters thanks to breakthroughs in computer graphics and artificial intelligence (AI). This evolution has introduced innovative ways to interact with customers, featuring virtual influencers captivating audiences on social media or virtual advisors offering assistance in online stores.

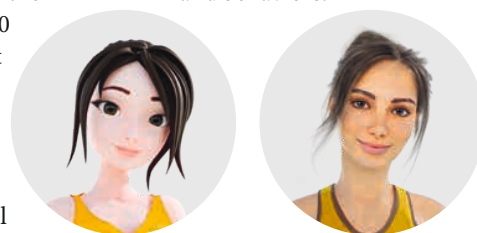
In contrast to human characters, working with virtual characters poses no physical limitations to the character and its portrayed life. However, the advantage of unlimited degrees of creative freedom comes with the burden of choosing a design that perfectly fits a brand's needs. One major design decision is choosing between a human-like or cartoonish appearance for a virtual character. Faced with an overload of choice, brands tend to choose human-like virtual characters as they are believed to allow followers to create a stronger bond with them and, therefore, have the power to influence their purchasing decisions. However, human-like virtual characters and assistants can also be perceived as creepy, leading to aversion, non-purchase, and negative

word of mouth. There were conflicting scientific theories about the impact of human-likeness on consumer behavior, with one suggesting positive perceptions and increased sales and the other suggesting consumer eeriness and non-purchase. This research aims to shed light on the impact of the human-likeness of virtual characters on consumer reactions and purchase behavior.

For this purpose, we conducted an online experiment that simulated a shopping experience and featured a virtual character. Recognizing the widespread use of virtual characters in the United States, we invited 2,000 American participants and split them into four distinct groups that included a human-like or cartoonish virtual influencer or advisor. During the experiment, the participants first interacted with a virtual influencer or advisor, receiving product recommendations. They then visited an online store to potentially purchase these items before providing feedback through a survey. To facilitate this experiment, we collaborated with a design agency to create two similar virtual characters—one with a human-like

appearance and the other with a cartoonish look. These characters were then integrated into a prototypical social media platform, mirroring Instagram, and a custom-built online store.

The research reveals that both cartoonish and realistic virtual influencers and advisors effectively promoted the products. Across all settings, the participants purchased a significantly higher number of products recommended by the virtual characters than would be expected randomly. Depending on the context, however, the design of the character led to different consumer attitudes and behaviors.



In the realm of virtual influencers, character design played a crucial role. The cartoonish virtual influencer outperformed its human-like counterpart significantly. It was viewed as more life-like, exhibiting emotions, intentions, and personalities while evoking less dis-

PHOTO: NIM



comfort. The participants found the storytelling of the cartoonish influencer more engaging, developed a stronger parasocial relationship with it, expressed greater satisfaction, and were more inclined to endorse it. As a result, the participants were more likely to purchase products endorsed by the cartoonish influencer in the online store and engage more actively with it on social media.

In contrast, for virtual advisors, the design's impact was minimal. Both the cartoonish and human-like characters achieved similar consumer attitudes and purchase behavior. This variance suggests that the influencer context, which emphasizes personal connection and narrative, is more sensitive to character design than the advisor context,

which focuses more on products and shopping experiences.

Our study offers valuable insights for marketing practitioners aiming to leverage virtual characters in their digital strategies. By judiciously considering design elements and the specific application context, brands can maximize the impact of their virtual personas. For consumers, enhancing digital literacy is crucial to critically evaluating the influence of these virtual entities in their lives. From a societal perspective, this research also underscores the need for ethical considerations and discussions about the influence of virtual characters to safeguard consumer interests and address potential impacts on identity and social norms. ←

## KEY INSIGHTS

- Overall, both the cartoon and realistic characters significantly exceeded random conversion rates for recommended products in the contexts of both virtual influencers and advisors.
- The design of the character plays a significant role for virtual influencers, with the cartoonish influencer generating more satisfaction, higher rates of recommended product purchases, and greater social media engagement.
- In contrast, for virtual advisors in online stores, the design's impact is minimal, as both cartoonish and realistic characters foster similar consumer attitudes and purchasing behaviors.

## PARTNERS

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Prof. Bernt Mayer, Ostbayerische Technische Hochschule

## PUBLICATION

**Kaiser, C., Manewitsch, V., Schallner, R., & Fenne, E. (2024).** Personality Over Looks: The Impact of Virtual Influencer Design on Brand Engagement and Purchase Decisions. 15. Wissenschaftliche Tagung des ADM, der ASI und des Statistischen Bundesamtes, Wiesbaden, 2024.



PHOTO: WESTEND61 / ALENA KUZNETSOVA

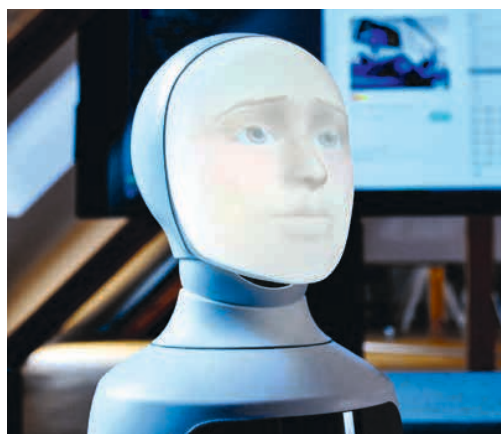
# EMOTIONAL VS. RATIONAL ROBOT SALES ASSISTANTS

How Interacting With Robot-Based Sales Assistants  
Influences Buying Decisions

*Team: Carolin Kaiser, Rene Schallner*



PHOTO: NIM



As digitalization advances and online shopping rises, traditional retail faces significant hurdles. While self-checkout kiosks have become commonplace, many consumers still prefer the personal touch and guidance they receive in store, especially for more expensive purchases such as electronics. Surveys indicate that a substantial portion of shoppers (around 54%) research smartphones in store before making a purchase decision. Historically, human sales associates handled consultations, but recent strides in robotics, AI, and advanced language models now enable retailers to deploy social robots capable of blending human-like interaction with machine efficiency. In countries like Japan, known for its robotics innovation, the use of robots (such as Pepper) as sales assistants is increasingly prevalent, with Western retailers also dabbling in robotic experimentation. For instance, the German electronics chain Media Markt has introduced robots in select stores to provide product information and guide shoppers to specific items. This trend raises the question of how consumers respond to robot-based sales assistants and how such interactions influence their purchasing decisions.

This research aims to examine how the design of robot-based sales assistants impacts consumer trust and purchasing behavior in retail settings. We are particularly interested in contrasting two design approaches: emotional versus rational. For this purpose, we developed

a robot named “Saleshat” using the Furhat robot and OpenAI’s GPT-4 in two versions: emotional and rational. The emotional version used language and facial expressions to evoke positive emotions, while the rational version focused on presenting factual information in a straightforward manner. Subsequently, we conducted a laboratory experiment with over 100 participants, each interacting with either the emotional or rational version of Saleshat. The participants engaged in a sales conversation in which Saleshat made product recommendations about Bluetooth speakers, followed by inquiries about purchase likelihood and perceptions of the robot.

Our findings suggest that an emotional design of robot-based sales assistants may actually deter consumers from making purchases compared to a more rational design. Despite robots’ ability to display emotions and establish connections, consumers may prefer a more factual, straightforward approach when seeking product advice. Interestingly, this effect does not seem to be driven by different types of trust. These insights highlight the importance of considering not just technical capabilities but also social and emotional factors when designing robots for consumer interactions.

For managers and retailers considering the adoption of robot-based sales assistants, our research underscores the importance of balancing technical prowess with social and emotional con-

siderations. While designing robots to appear more human-like may seem intuitive, it does not necessarily translate to increased purchase intent and consumer acceptance.

From a broader societal perspective, our findings contribute to a more nuanced discussion about the benefits and risks associated with robot-based sales assistants. Despite prevalent concerns about new technologies, our study participants generally showed openness and even enthusiasm toward interacting with robots in a sales capacity, suggesting that the conversation surrounding robotic technology may need to be more balanced. ←

## PARTNERS

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## PUBLICATION

**Gnewuch, U., Hanschmann, L., Kaiser, C., Schallner, R., & Mädche, A. (2024).**

Robot Shopping Assistants:  
How Emotional Versus Rational  
Robot Designs Affect Consumer  
Trust and Purchase Decisions.  
Proceedings of the 32nd European  
Conference on Information  
Systems, Cyprus, 2024.

# DIGITAL NUDGES FOR SUSTAINABLE ONLINE SHOPPING

## The Impact of Digital Nudges on Sustainable Purchasing Decisions

Given the abundance of products and information, shoppers today face choice overload, with economic pressures and sustainability concerns influencing their decisions. Consequently, online sellers are implementing design elements such as sustainability filters to simplify the buying process. Understanding how these design features influence shopper choices is crucial for sellers and buyers alike. To address this, we conducted a

survey-based online experiment involving 1096 participants to investigate the influence of various design elements on green purchasing decisions. Our findings reveal that the majority of consumers navigate a delicate balance between price and sustainability ratings, largely unaffected by the sorting of sustainability ratings, placement of sponsored articles, or pop-up promotions of sustainability sorting. These insights shed light on

the nuanced dynamics shaping consumer choices in the context of sustainable shopping, offering valuable implications for e-commerce strategies and consumer education initiatives.

### TEAM

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# DECISION SUPPORT AT THE POINT OF SALE

## The Impact of Recommendations by Social Robots on Tourist Satisfaction

Tourism recommendation systems have the potential to alleviate choice overload for travelers. Social robots offer a promising avenue for delivering recommendations in tourist information settings, presenting an engaging and intuitive interface. This research explores tourists' perceptions of the effectiveness and satisfaction of tourism recommendations provided by social robots as well as their preferences for human-like versus robotic interactions. An experiment was conducted at a tourist information office involving 60 participants exposed to either a human-like or robotic version of the social robot recommender system. Feedback was collected via survey, revealing that the participants responded positively to the social robot across various evaluation criteria. These findings suggest that tourists are receptive to social robots in real-world tourism contexts and would consider using them in the future.

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# AI AT THE POINT OF SALE

## Enhancing the Customer Experience in Brick-and-Mortar Retail Through New Interaction Possibilities

Recent advancements in Large Language Models and Generative AI have opened up new possibilities for enhancing shopper engagement in retail through the use of Digital Sales Assistants. Within this rapidly evolving technological landscape, retailers face the challenge of optimizing the design features of these assistants to maximize shopper satisfaction. To address this challenge, we conducted a survey involving 446 participants using discrete choice experiments within a retail environment. The findings indicate that the origin of information and considerations regarding privacy are the primary drivers of shoppers' utility when interacting with digital sales assistants, whereas non-verbal cues exert a comparatively lesser influence. However, the influence of non-verbal cues varies depending on the context. Face-to-face interactions in store benefit from humanized and credible cues, while remote interactions at home are more successful with digital sales assistant designs that are less humanized yet more likable. Despite strong heterogeneity in preferences, our study reveals only a weak correlation between digital sales assistant features and improved adherence to recommendations.

### TEAM

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# PURPOSE THROUGH THE DIGITAL LENS

## How Online Visibility Shapes Consumer Brand Perceptions

In today's market, consumers increasingly favor brands that prioritize sustainability and societal impact, prompting companies to redefine their mission beyond mere profit. Recent research has introduced a framework encompassing a brand's purpose, including financial success, customer benefits, and contributions to societal well-being such as ethical practices and environmental protection. However, uncovering a brand's true purpose remains intricate and relies on corporate communication, media portrayals, and consumer feedback. In the digital era, consumers have access to vast information sources, enabling them to form nuanced opinions about a brand's ethos. This study employs a well-established psychological model to investigate how a brand's online visibility influences consumer perceptions of its purpose. Analyzing data from 100 top brands through internet searches and surveys, we explored the relationship between online visibility and brand perception across various dimensions. The results indicate that while visibility in financial success and customer benefits had minimal impact on perceived importance, brands that were shown to have third-party effects were perceived as more committed in this domain. Our findings suggest that a brand's online visibility partly shapes consumer perceptions. Notably, perceived focus on third-party effects may be affected by online visibility, not only by the visibility in this purpose dimension but also by the visibility connected to customer benefits. Enhancing visibility in customer benefits and third-party effects could augment consumer perception of a brand's societal impact. These insights underscore the importance of strategic online engagement for brands aiming to convey their purpose effectively in a digitally connected world.

### TEAM

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### PARTNERS

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# SHOPPING COMPANIONS

## Exploring Consumer Preferences for Virtual Shopping

Amidst the proliferation of chatbots and voice assistants such as Amazon Alexa and ChatGPT across diverse sectors—including healthcare, education, and customer service—their role in the shopping domain stands out. They provide invaluable support by furnishing product information, recommendations, and guidance. However, despite their potential, many e-commerce chatbots falter, with a significant number discontinued within the first year of operation. This trend hints at underlying challenges in practical implementation, possibly stemming from a deficit in consumer trust, particularly when these assistants prioritize corporate interests over consumer welfare. In response, the concept of a “virtual companion” has emerged as a promising paradigm shift. Here, the assistant assumes the role of a personal confidant rather than a mere transaction facilitator. Our research delves into identifying the characteristics of such companions that resonate positively with consumers. Through a comprehensive survey involving 1,001 German consumers, we have unearthed compelling insights. For the majority of participants, establishing a positive interaction and relationship with the provider was a pivotal factor during their shopping experiences. A significant proportion of the respondents demonstrated readiness to engage with a shopping companion, particularly valuing its ability to prevent regrettable purchases. Additionally, consumers distinctly favored companions provided by neutral entities over those associated with specific stores or influencers. These findings underscore the pivotal role of trust and impartiality in consumer acceptance of shopping companions. By aligning with consumer needs and preferences, virtual companions hold immense potential to redefine the shopping experience and bridge the gap between consumer expectations and e-commerce offerings.

### TEAM

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# GENERATIVE AI IN MARKETING— BEYOND THE BUZZ

ChatGPT has catapulted generative AI into the spotlight, making it one of the most talked-about business topics virtually overnight—promising to revolutionize marketing by simplifying the creation of personalized content, enhancing data analysis with unprecedented precision, and optimizing strategies and decisions. Let's look beyond the hype: What are the tangible benefits, challenges, and future opportunities of AI-driven marketing strategies?

*Team: Fabian Buder, Nina Hesel, Holger Dietrich, Arjen Heimstädt*

**T**he technological leap in generative AI has generated much excitement and speculation in the marketing industry, fueling a narrative that presents generative AI as a cure-all for various marketing challenges. This hype is driven by the promise of the effectiveness and almost limitless efficiency of AI tools that seem to be able to automate various tasks, including complex data analysis, content creation, and the personalization of customer experiences. Amidst this burgeoning hype, the Nuremberg Institute for Market Decisions (NIM) embarked on a comprehensive study to peel back the layers of excitement and examine the concrete impacts of generative AI on marketing practices. Conducted across Germany, the United Kingdom, and the United States, this study surveyed 600 B2C marketing professionals to ascertain invaluable insights into the actual adoption, benefits, and hurdles of generative AI in marketing.

## **Focus and Methodology of the Study: How Managers Evaluate Generative AI in Marketing**

The study focused on assessing the use, benefits, and challenges of generative AI in marketing. From the end of October to the middle of December 2023, we gathered insights from 600 B2C marketing professionals using computer-assisted telephone interviews with web screen-sharing in three major markets: Germany, the United Kingdom, and the United States. Small (100–249 employees), medium (250–499 employees), and large (500+ employees) companies were represented in roughly equal shares.

## **Generative AI: A Marketing Mainstay**

The study unveiled that generative AI is no longer a fringe technology but a central tool in companies' marketing arsenal, with every participant reporting

some level of usage. A striking 100% of respondents reported at least some use of AI in their marketing activities, with 50% of respondents leaning heavily on these tools for their marketing endeavors, underscoring a strong belief in AI's potential to significantly enhance their work.

## **Where Generative AI Shines**

Generative AI has found its footing across various marketing tasks, with its prime utility found in areas demanding rigorous data manipulation and analysis, such as market research and insight generation. It also plays a pivotal role in content creation, including writing, summarizing, and translating text. Notably, its use in the creative process of ideation signals a paradigm shift, suggesting AI's emerging role as a creative partner in marketing. The "heavy users" of generative AI reported marked improvements in speed and quality, par-



# AI is being recognized not only for its speed but also its potential to improve the quality of marketing output while saving costs at the same time.

ticularly in market research, the creation of text and other content, and the generation of insights. This acceleration enables marketers to swiftly adapt strategies, while AI's proficiency in producing high-quality content and helping generate better ideas fosters competitive differentiation. Additionally, significant cost savings have been observed, primarily in content creation and market research, where AI's efficiency reduces the need for external resources.

## Bridging the Knowledge Gap

In the face of such benefits, how can companies foster the effective use of AI? The results of the study indicate that enhancing knowledge might be a crucial

factor in boosting AI usage, especially since it represents an area that companies can actively influence. The greatest areas for training—or, in other words, areas where a pronounced knowledge gap exists—revolve chiefly around the legal and ethical implications of AI-generated content. Over 40% of professionals confessed to a limited understanding in these areas, highlighting an urgent need for skill development.

## The Organizational Context

The integration of generative AI into marketing strategies does not occur in a vacuum. Successful adoption often occurs in companies that allocate dedicated resources and budgets toward AI

initiatives, embed AI as a core component of their marketing strategy, and foster a culture of knowledge sharing. Challenges remain, however, including issues surrounding data privacy, biased algorithms, and the technical integration of AI tools.

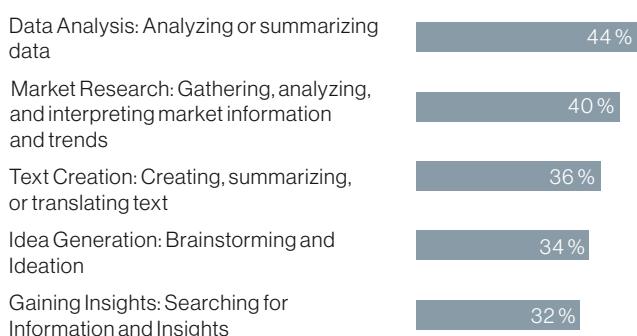
## Looking Ahead: Practical Applications and Strategic Implications

Generative AI stands as a transformative force in marketing, not merely speeding up processes and enhancing output quality but also promising strategic shifts in creativity and planning. For marketing professionals, the path forward involves embracing AI's practical applications, acknowledging its limitations, and navigating the challenges of technological integration at both the user and organizational levels.

This study not only demystifies the current hype but also provides a roadmap for harnessing generative AI's full potential, emphasizing the importance of knowledge enhancement and organizational readiness in realizing these benefits. ←

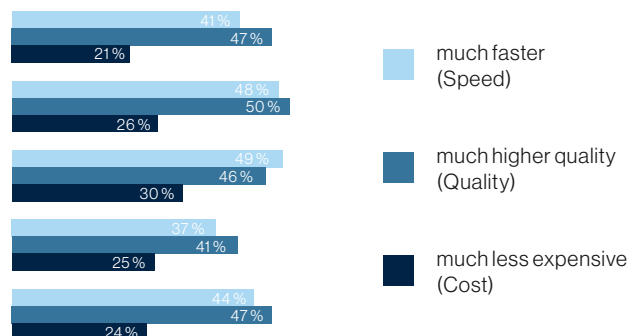
## Top five usages and benefits of generative AI for marketing activities

### Share of "heavy users"\* of generative AI tools for specific marketing activities



### Benefits perceived by those "heavy users"

Generative AI makes this marketing activity...



\* Share of respondents who reported significant (mostly used) or even predominant use (almost always used) of generative AI tools for a marketing activity among those surveyed marketing professionals whose responsibilities included the respective activity

n=600 marketing professionals working for companies in Germany, the United Kingdom, or the United States

# THE CRUCIAL ROLE OF CONSUMER ACCEPTANCE IN ADVANCING SUSTAINABLE FOOD INNOVATIONS

As global challenges such as environmental degradation and health concerns intensify, the food industry finds itself at the forefront of adopting sustainable innovations. These technological advancements are essential for developing more sustainable food systems that can support our planet's growing needs without exacerbating its problems. The success of these innovations, however, hinges critically on consumer acceptance.

*Team: Nina Hesel, Fabian Buder*

**P**recision fermentation is a prime example of such emerging technologies in the food industry. This method allows for the production of animal-free dairy and other food products by using microbes to create proteins and fats. Like other sustainable food technologies, precision fermentation offers significant environ-

mental benefits but faces the challenge of gaining widespread consumer acceptance.

Consequently, understanding how to navigate and influence consumer perceptions and choices is indispensable for marketers in this evolving landscape.

## **Focus and Methodology of the Study**

To explore consumer attitudes toward sustainable technological innovations, NIM joined forces with the MAPP Centre at Aarhus University. In the first online experiment, participants were randomly assigned to one of two condi-

tions: one group was exposed to emotionally charged marketing messages about precision fermentation using the affect heuristic, while the other group received more neutral, information-focused content. We measured perceived risks and benefits related to adopting precision fermentation products and respondents' attitudes toward the sustainable technology innovation. Additionally, in the second experiment, subjective knowledge of the sustainability of the technology was included as a possible moderating factor.

## Key Results

**Emotional Responses as Decision Drivers:** Consumers' emotional reactions play a pivotal role in their attitude toward new food technologies. Our study found that participants exhibited more favorable attitudes toward precision fermentation when the marketing messages used an emotional tone (affect heuristics).

**The Moderating Role of Knowledge:** Subjective knowledge about the sustainability of the technology reinforces this relationship and led participants to rely heavily on affect when evaluating the sustainability of the innovation, resulting in a positive bias that might counteract sustainability efforts.

**Awareness of Bias in Positive Framing:** While leveraging emotional responses can be effective, it also carries the risk of inducing bias, leading to overly optimistic perceptions of the technology. Our results indicate the necessity for marketers to balance emotional appeals with realistic information about the capabilities and limitations of new food technologies to maintain trust and credibility.

## Conclusion

The acceptance of sustainable food innovations such as exemplary precision fermentation depends on a nuanced understanding of consumer behavior. Our study's results highlight the critical role of emotional engagement, combined with the right amount of information, in shaping consumer attitudes toward innovative sustainable food technologies.

## Key Learnings for the Marketing of Novel Food Technologies

**Emphasize Emotional Engagement:** Leveraging the affect heuristic through emotionally compelling marketing messages holds promise for fostering positive evaluations of sustainable technology, which might lead to a higher level of acceptance and adoption.

**Be Aware of Potential Positive Biases:** Managers responsible for marketing sustainable technological innovations and the products manufactured with them must strive to avoid positive biases on the part of consumers to make a con-

structive contribution to promoting sustainability.

**Counteract With Credible Information:** It is essential to provide accurate information about the technological innovation along with emotional communication so as to prevent positive bias and not risk a counterproductive contribution to promoting sustainability. ←

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Sciences at Aarhus University



PHOTO: ANNICK VANDERSCHIEDEN PHOTOGRAPHY, GETTY IMAGES



# MARKETING IN THE METAVERSE

As digital, virtual worlds evolve, brands like Gucci and Nike are pioneering marketing in the Metaverse, engaging young audiences through immersive and interactive experiences. How are top brands leveraging virtual platforms to create culturally relevant marketing strategies, and what are the challenges they face?

*Team: Nina Hesel, Fabian Buder, Holger Dietrich, Alisa Gabduliyanova*



**W**ith Facebook's 2021 rebranding to Meta, the term "metaverse" sparked considerable excitement, promising a digital revolution in business and daily life. Despite the hype, the first metaverse platforms like Meta Horizon and Decentraland haven't yet seen the user adoption expected of them. In contrast, gaming platforms like Fortnite and Roblox have effectively become proto-metaverses, offering brands vibrant spaces to engage millions of users through social interaction and digital identity expression. These paradigms raise a couple key questions: How are top brands navigating this shift, and what are effective marketing strategies within these established virtual worlds, rather than waiting for a fully realized metaverse to emerge?

### Focus and Methodology of the Study

To delve into the strategies utilized by leading consumer brands in virtual worlds and their impact on young consumers, we conducted qualitative interviews with senior marketing managers from leading consumer brands in Europe and the United States. These interviews were complemented by further discussions with executives from brands that can be deemed metaverse pioneers and an analysis of successful brand activations in virtual worlds over recent years. This comprehensive approach allowed us to gather nuanced insights into the effectiveness of various marketing strategies in these digital environments.

### Key Results

**Strategic Engagement with Young Audiences:** Virtual worlds offer a unique opportunity to engage with younger consumers in spaces where they choose to spend their time. Brands like Gucci, Vans, and Nike have successfully harnessed these platforms to create experiences that resonate with young users.

**Culturally Relevant Experiences:** Successful brands appear in virtual worlds

as interactive, tangible personalities. This approach centers on real presence and action. Utilizing influencers and orchestrating virtual events, such as concerts or interactive challenges, have proven effective in drawing large audiences and creating memorable brand experiences. These strategies not only enhance brand visibility but can also foster a deeper connection with the audience.

**Phygital Experiences Enhance Engagement:** Bridging the gap between digital interactions and physical products, or "phygital" experiences, adds a tangible dimension to brand engagements in virtual worlds. This approach is still in its infancy, but for its few pioneers, it has been shown to significantly enhance user engagement and brand loyalty.

**Navigating Challenges and Embracing Opportunities:** While the high costs and lack of clear ROI metrics present challenges, early adoption and innovative engagements in these digital spaces can set brands apart and position them favorably among younger consumers.

### Conclusion

The ability to engage effectively in virtual worlds is becoming an essential facet of modern marketing strategies. Our study underscores the importance of creating authentic, interactive, and culturally relevant marketing initiatives

to capture the attention of Gen Z and Gen Alpha. Brands that can innovate within these platforms by offering engaging and meaningful experiences are more likely to succeed in cultivating long-term loyalty and preference among these digitally native consumers.

### Key Learnings for Marketing Professionals

By embracing these strategies, marketing professionals can learn from pioneering brands to harness the full potential of virtual worlds to engage with the next generation of consumers, ensuring their brands remain at the forefront of digital and cultural trends.

**Capitalize on Cultural Relevance:** Develop marketing initiatives that are deeply embedded in the cultural fabric of the target audience to ensure relevance and resonance.

**Leverage Digital Innovations:** Utilize digital platforms not just for advertising but for creating comprehensive brand experiences that include events, influencer collaborations, and interactive elements.

**Bridge Digital and Physical Worlds:** Innovate with phygital strategies that enhance the connection between online engagement and real-world interactions, enriching the consumer's brand experience. ←

**“Metaverse is not a place that you could put your ads on. You should be there, and you should act—you are in the platform, not as a brand, [but] as a personality.”**

Marketing Executive, Beverages, European Union

# NAVIGATING THE INNOVATION LANDSCAPE

## Understanding Failure, Overcoming Challenges

*Team: Matthias Unfried, Michael K. Zürn*

In the dynamic world of business, maintaining relevance, offering compelling value, and ensuring sustainability often hinge on an organization's ability to innovate. Innovations shape the future of every single business and industry and even entire economies. Thus, innovation has become a key area of focus for managers and researchers alike.

However, most product innovations fail. Although there are hardly any reliable figures on this, a few are floating around. According to Clayton Christensen, a former professor at Harvard Business School, 95% of product innovations fail, many of which do not even survive the first year. According to Anthony Ulwick, founder of Strategyn, an innovation consulting firm, this leads to costs of 100 billion U.S. dollars for U.S. Fortune 500 companies alone.

Nonetheless, there are also numerous examples of the opposite case, instances in which companies refuse to innovate in the face of technological developments and the resulting market threats. Even global players can get into serious economic difficulties, as seen in the

cases of Atari, Brockhaus, Xerox, and Nokia. There seem to be two types of innovation failures: implemented innovations that fail on the market and not-implemented innovations that would have been successful.

Across several projects and studies, NIM has approached the reasons for innovation failure to better understand the dynamics at play.

### **"Threat rigidity" may induce "α" failures.**

The decision to innovate is often influenced by a company's operating environment, including its past experiences and present challenges. These contextual factors can create favorable or unfavorable conditions, and each scenario may affect decision-making differently. While businesses seem to have fewer problems with innovation when they are confronted with opportunities, events that are seen as threatening decrease decision-makers' willingness to innovate.

Indeed, in a study with 400 U.S.-based top managers, we found evidence

for this phenomenon, which is referred to as threat rigidity. In contrast to the general population, top managers tend to exhibit risk-averse behavior when facing threats.

In follow-up studies, we identified two psychological explanations for threat rigidity.

First, while innovation is often seen as the riskier option, maintaining the status quo can be associated with considerable risks as well. When decision-makers face a threat, the impending losses typically trigger more risk-seeking decisions. Therefore, threats should even promote innovation. However, the findings from our experiments indicate that risk perceptions shift depending on the type of event a decision-maker faces. Specifically, when the event is categorized as a threat, innovation is less often seen as the riskier option. Consequently, shifting risk perceptions interfere with risk-seeking under threat and potentially contribute to threat rigidity.

Second, innovation requires an active deviation from the status quo. As outlined above, the outcomes of both deviating from and maintaining the status quo can be uncertain. Because of this uncertainty, decision-makers tend to compare the outcomes of different choices under specific circumstances, and this can induce anticipations of

regret. Our findings further suggest that threats amplify anticipated regret, which then also impedes innovation.

### Organizational structure can promote both “ $\alpha$ ” and “ $\beta$ ” failures.

In a recent study, we analyzed how the evaluation of innovation ideas and thus innovation decisions are influenced by the organizational structure, especially the role that innovation managers have in the innovation process:

- **Seeker role:** The main responsibility is to identify valuable ideas for the company.
- **Selector role:** The main responsibility is to identify ideas for the company while also having budget responsibility and being accountable for resource allocation.

We found that decision-makers with greater responsibility predominantly focus on the market potential rather than the novelty or feasibility of ideas. However, an interesting pattern emerges when high decision-making responsibility is coupled with time pressure; there is a noticeable shift toward a greater emphasis on feasibility over market potential.

### Key insights for overcoming the identified challenges

In our studies, we were able to identify two different reasons for innovation failure: psychological and organizational factors.

One thing that every decision-maker can do on their own is work on their personal bias awareness and learn to apply de-biasing techniques. By understanding cognitive biases, one can take proactive measures to mitigate the negative effects that, e.g., adverse conditions have on one's decisions.

To overcome organizational issues, it might be wise to create an environment where all decision-makers who are involved in the innovation process feel comfortable discussing not only market potential, novelty, and the feasibility of potential innovation but also threats and concerns. ←

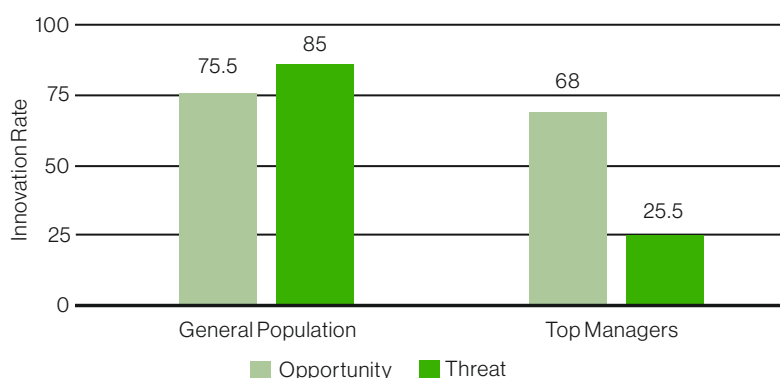


Figure 2: Unlike the general population, top managers tend to refuse innovations when facing market threats.

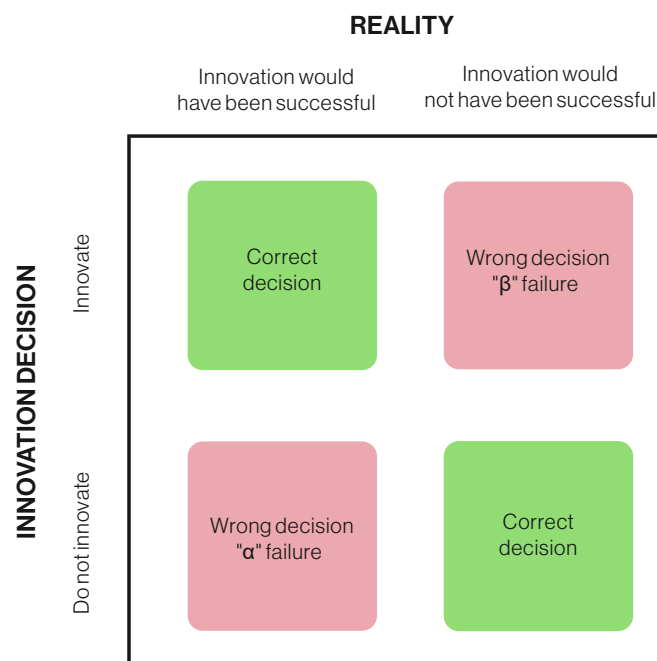


Figure 1: Types of innovation failures

### PARTNERS

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### PUBLICATIONS

**Zürn, M. K., Buder, F., & Unfried, M. (2023).**

How the Past and the Present Shape Decisions for the Future: Making Better Innovation Decisions Under Threat. NIM Research Report.

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# BRIDGING THE GAP

## Addressing Consumer Distrust in Sustainability Claims

Team: Matthias Unfried, Michael K. Zürn, Natalie Weber

In today's world, we face a multitude of societal and environmental problems that demand urgent attention. It is indisputable that our decisions and our lifestyles need to become more sustainable. From an economic perspective, sustainability can be described as a responsible management of externalities—that is, the parties engaging in economic transactions need to consider the effects their decisions have on third parties.

Besides the adjustments in internal processes, individual consumer decisions can be another important pillar of a successful sustainability strategy. However, companies and corporate decision-makers face significant hurdles in implementing sustainable practices. Companies or brands committed to the Sustainable Development Goals (SDGs) or sustainability in general still need to attract consumers, as they are the ones who ultimately buy sustainably produced products and pay the markup.

Nonetheless, it remains unclear how strong consumers' preferences for sustainability truly are. Critically, there

exists a considerable attitude-behavior gap when it comes to sustainable behavior. Researchers have identified four types of reasons why behavior does not match attitudes.

First, individuals might not assess their true attitudes accurately, possibly because of social desirability bias. Second, the gap can be attributed to "System 1" behavior, where decisions are made instinctively rather than consciously. Third, the gap might reflect the trade-offs inherent in most decisions, where immediate benefits outweigh long-term sustainability concerns.

In this project, we have focused on the fourth reason why positive attitudes toward sustainability fail to translate into sustainable behavior—namely that consumers might distrust the sustainability claims presented by sellers and producers. This skepticism can stem from greenwashing tactics or a lack of transparency in supply chains. Addressing this distrust is crucial to bridge the gap between consumer attitudes and behavior toward sustainability. By fostering trust and providing transparent

information, companies can encourage consumers to make more sustainable choices, thus contributing to a more environmentally conscious society.

The first results indicate that consumers have a true preference for sustainability when the claim is credible; thus, credible sustainability claims might reduce the attitude-behavior gap. However, we have found indications that this depends on who ultimately bears the costs caused by a higher level of sustainability. If these are borne entirely by the consumers themselves, their willingness to pay for sustainability is greatest. One explanation for this could be that the consumer then claims the "good" deed for themselves, which compensates for paying more. ←

### PARTNERS

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# MAYBE COMPENSATIONS

## Reducing Perceived Costs to Increase Consumer Demand for Carbon Offsets

Global warming is a central challenge in the climate crisis, and greenhouse gas emissions are considered the primary driver of this phenomenon. While efforts must focus on avoiding and reducing emissions in the first place, it will never be feasible to abandon all activities that cause carbon (equivalent) emissions. Consequently, offsetting carbon emissions can be a viable addition to the undeniably necessary efforts aimed at insetting (i.e., avoiding and reducing) them. Carbon offsets are implemented by funding environmental projects that avoid or reduce emissions independently of the activity originally causing emissions. Despite the (often justified) criticisms, offsetting can be one pillar of a global action plan to slow down global warming if two conditions are met:

The environmental projects must verifiably avoid or reduce emissions somewhere, and market decision-makers must be willing to pay the inevitable price premium required to fund the projects.

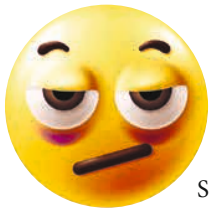
The results from our own NIMpulse survey (Vol. 5) indicate that the costs associated with voluntary carbon offsetting are a central obstacle for consumers. Therefore, this project draws on recent research suggesting that reducing expected costs by deliberately waiving the enforcement of a few good deeds (e.g., charitable donations that were already agreed upon) overproportionally increases consumers' willingness to accept the initial request. In other words, we tested whether consumers would be more

willing to pay for voluntary carbon offsets if there was a small chance (5%) that the compensation (and the associated costs) would not occur afterward.

We conducted a set of experiments investigating both hypothetical and incentivized decisions, but the results indicate that “maybe compensations” are not able to increase the total amount of carbon offsets. We speculate that decision-makers who seriously consider offsetting emissions and thus might be susceptible to the appeal of a maybe compensation are not willing to “gamble” on the fate of our ecological niche.

### TEAM

Michael K. Zürn, Holger Dietrich



## ARE EMOJIS A SUITABLE MARKETING TOOL ON SOCIAL MEDIA?

Social media marketing offers companies the opportunity to address their target groups directly. However, one disadvantage is that purely text- and image-based advertising offers hardly any opportunities for non-verbal communication. It can therefore be difficult for companies to “strike the right note” in their advertising campaigns. Emojis are thus an exciting way to communicate digitally in a non-verbal way.

In two studies, we investigated whether emojis in social media campaigns evoke positive emotions in the audience (e.g., through the laughing emoji: 😂) or whether they can even be used to subtly emphasize specific

product features such as sustainability (e.g., through the plant emoji: 🌱). These mechanisms could improve brands' positioning and increase consumers' purchase intentions. However, contrary to intuition and previous research, this was not the case in our studies. While, emojis are widely used in brand communication, they actually seem to have limited use for targeted brand positioning on social media.

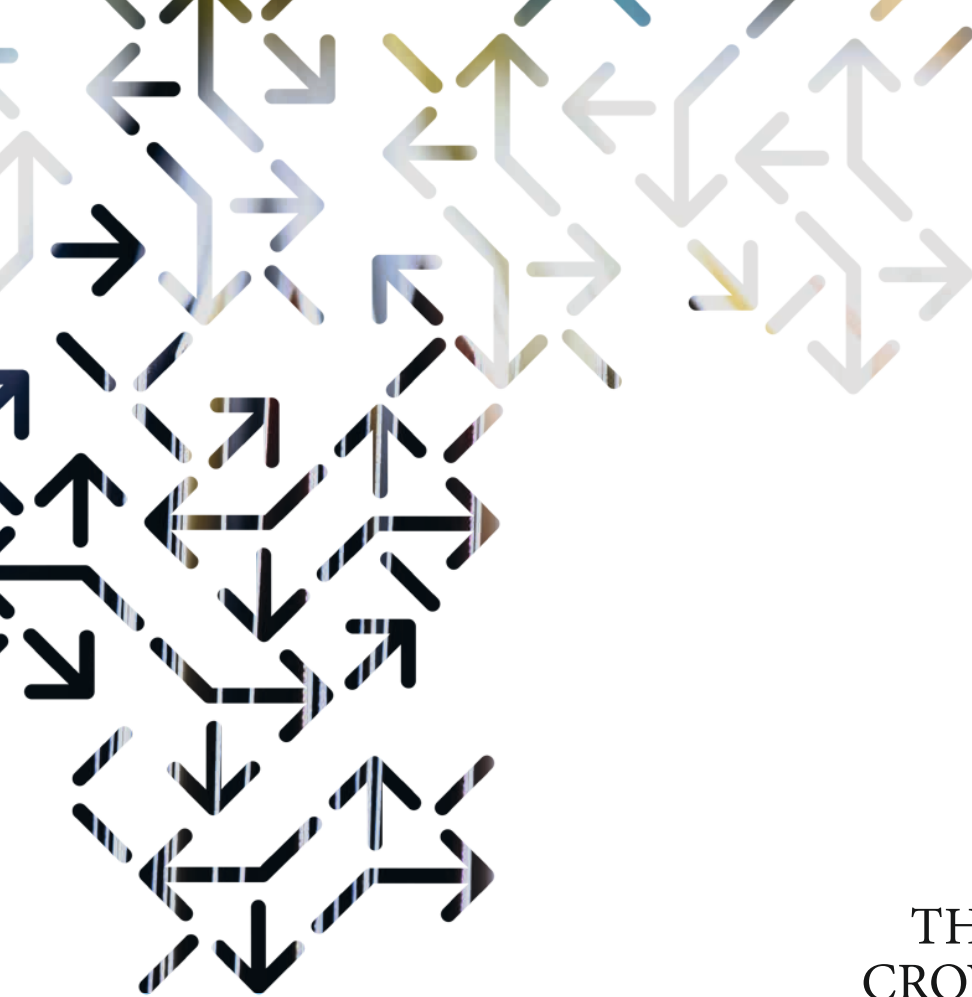
### TEAM

Michael K. Zürn

### PARTNERS

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## THE AI-AUGMENTED CROWD: HOW HUMAN CROWDVOTERS ADOPT AI (OR NOT)

### KEY PUBLICATIONS

To date, innovation management research on idea evaluation has focused on human experts and crowd evaluators. With recent advances in AI, idea evaluation and selection processes need to keep up. As a result, the potential role of AI-enabled systems in idea evaluation has become an important topic in innovation management research and practice. While AI can help overcome human capacity constraints and biases, prior research has also identified aversive behaviors of humans toward AI. However, research has also shown laypeople's appreciation of AI. This study focused on human crowdvoters' AI adoption behavior. More precisely, we focused on gig workers who, despite often lacking expert knowledge, are frequently engaged in crowdvoting. To investigate crowdvoters' AI adoption behavior, we conducted a behavioral experimental study ( $n = 629$ ) with incentive-compatible rewards in a human-AI augmentation scenario. The participants had to predict the success or failure of crowd-generated ideas. In multiple rounds, the participants could opt to delegate their decisions to an AI-enabled

system or make their own evaluations. Our findings contribute to the innovation management literature on open innovation, more specifically crowdvoting, by observing how human crowdvoters engage with AI. In addition to showing that the lay status of gig workers does not lead to an appreciation of AI, we identify factors that foster AI adoption in this specific innovation context. We thereby found mixed support for influencing factors previously identified in other contexts, including financial incentives, social incentives, and the provision of information about AI-enabled system's functionality. A second novel contribution of our empirical study is, however, the fading of crowdvoters' aversive behavior over time.

#### AUTHORS

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#### IN

Journal of Product Innovation  
Management

# DEBIAS BY DESIGN—A LEADER’S GUIDE TO THINKING ERRORS & BETTER DECISION-MAKING

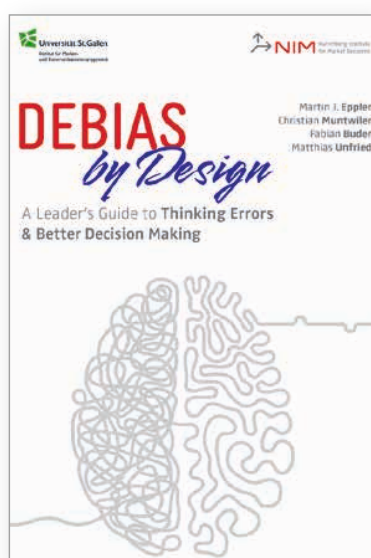
*Debias by Design* is a systematic guide to the most frequent and impactful decision-making mistakes in management. It outlines why such errors come about and how to prevent or correct them. *Debias by Design* makes the extensive evidence on cognitive biases available to professionals in an accessible, entertaining, and visual format so that detrimental mental shortcuts can be more easily spotted and avoided in everyday decision-making. Besides serving as a concise and visual guide to the most relevant biases, the book also presents simple debiasing tools, methods, and tricks to improve decision-making systematically.

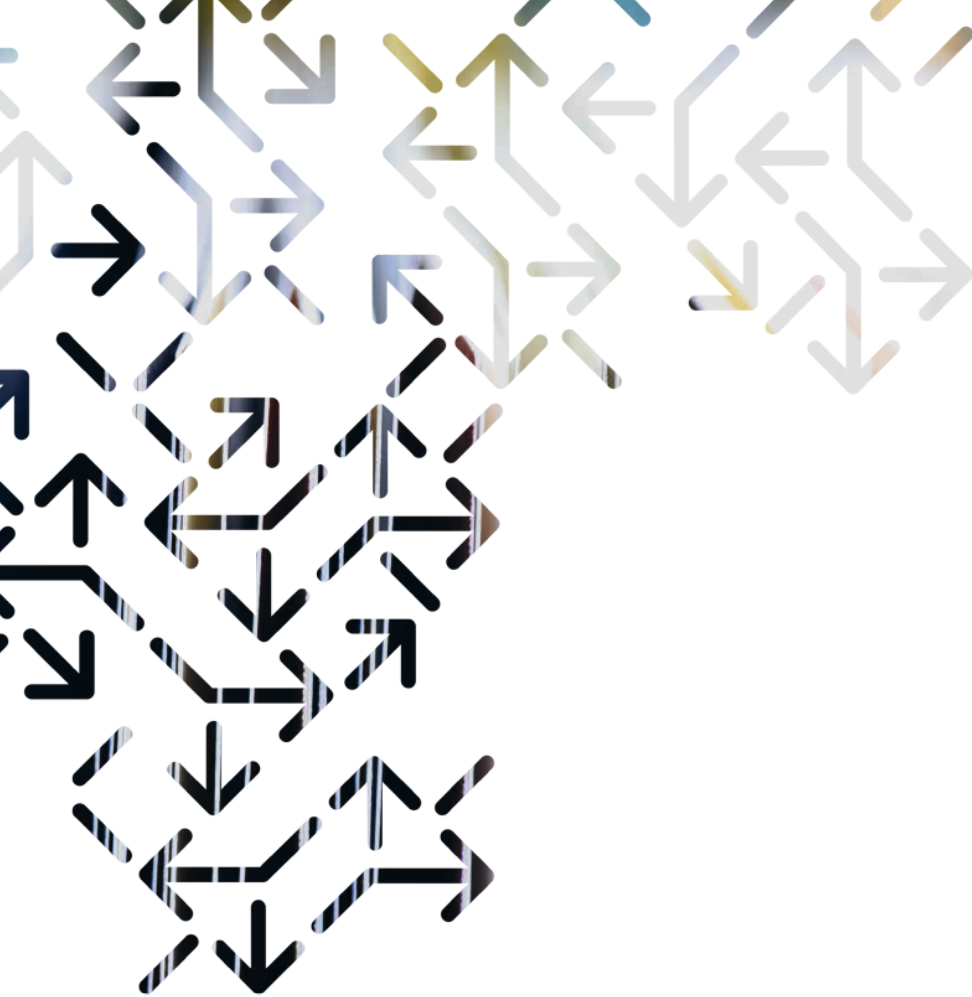
Written by an experienced team of practitioners and academics, *Debias by Design* offers the following features:

- a state-of-the-art survey on the most relevant and impactful cognitive biases from the point of view of experienced managers;
- a highly visual and instructive guide to the most important cognitive biases;
- the Decision TUNER approach to boost the quality of your decisions;
- a toolbox on how to systematically avoid bias as an individual, team, and organization;
- a tutorial on how to spot your own bias blind spots;
- an outlook on how to deal with biases in hybrid or AI- and analytics-assisted decision-making; and
- a self-test to calibrate your own decision-making and know your own bias weak spots.

## AUTHORS

Martin Eppler, HSG  
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Matthias Unfried, NIM





# STUDIES

- 29** Voices of the Leaders of Tomorrow 2024:  
Confronting Scarcity
- 32** Challenges of Marketing—AI in  
Marketing: Nothing Will Work Without  
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- 34** NIMpulse—Despite Criticism:  
CO<sub>2</sub> Offsetting Enjoys High Acceptance

PHOTO: MALERAPASO, ISTOCK



# CONFRONTING SCARCITY

## Voices of the Leaders of Tomorrow 2024

*Team: Fabian Buder, Nina Hesel, Holger Dietrich*

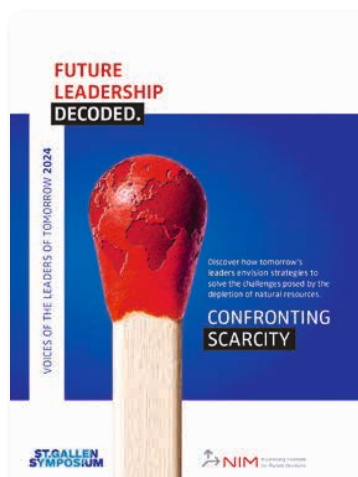
**L**eaders of today and tomorrow are calling on companies to turn their priorities upside down. This is a key finding of this year's edition of the "Voices of the Leaders of Tomorrow" study, which was conducted by the Nuremberg Institute for Market Decisions (NIM) together with the St. Gallen Symposium. 650 top

talents from the St. Gallen Symposium's international network, the "Leaders of Tomorrow," and 250 senior executives from the world's top revenue-generating companies were asked what they expect from decision-makers in business and politics when it comes to tackling the challenges of natural resource scarcity.

The majority of respondents from both generations call on companies to prioritize creating social and environmental value over generating profits for their shareholders. This required hierarchy of priorities would turn the current situation, in which shareholder value dominates from the respondents' perspective, upside down. However, Leader of



## ABOUT VOICES OF THE LEADERS OF TOMORROW



For the “Voices of the Leaders of Tomorrow” study, a group of highly promising young talent up to 35 years of age from the international network of the St. Gallen Symposium, as well as senior executives from the highest-grossing companies worldwide, are surveyed annually on their perspectives on the major issues of our time. The study is conducted by the Nuremberg Institute for Market Decisions in cooperation with the St. Gallen Symposium.

Learn more and download the entire VOLOT study at



Tomorrow Jessica Jones (29), sustainability manager, is convinced that “social and environmental values and profit aren't mutually exclusive. I believe over time the true cost of sustainability will become more evident, and this will then mean that profit is only possible when these values are met.”

### Resource conservation more important than economic growth

There is a consensus among the generations of leaders that the increasing scarcity of natural resources is one of the most urgent challenges of our time. The majority of respondents would even be prepared to temporarily forego economic growth in order to address it. Both generations state that companies as well as politicians and consumers need to do far more for the sustainable use of scarce natural resources than is currently the case. However, they also see an opportunity for companies: 72% of the Leaders of Tomorrow and 69% of senior executives state that the scarcity of natural resources is already acting as a catalyst for sustainable transformation processes. Leader of Tomorrow William Bergh (29), entrepreneur, is convinced

that “the largest value pools of the future are sustainable and the companies that are best positioned to tap into them will be the most profitable long term.”

### Leaders of Tomorrow want to link managers' bonuses to sustainability targets

The consensus on putting sustainability first in the company ends abruptly when it comes to taking personal responsibility and making personal sacrifices: While 63% of Leaders of Tomorrow demand that managers' bonuses should be more dependent on sustainability targets than financial targets, only 32% of today's managers agree with this.

### Shared doubts about the free market's ability to drive sustainable change

The majority of future managers (63%) believe that stricter rules and market regulations are more likely to lead to sustainable change than the free market. Today's top managers largely (57%) take a similar view. However, when it comes to specific political measures to protect resources, there is again disagreement. While both generations consider inter-

national cooperation and the funding of research and development to be particularly effective, only young managers tend to favor stronger regulations such as penalties and taxes on resource-intensive goods. Today's managers, on the other hand, prefer measures that encourage companies to report on sustainability and set efficiency standards. Interestingly, the much-discussed emissions trading is not seen as particularly effective by either generation.

### Cross-generational leadership as the key to sustainable change

The participants in the study agree that intergenerational cooperation in corporate management is a necessity for sustainable change (81% of the Leaders of Tomorrow and 77% of senior executives). However, the Leaders of Tomorrow see a large gap between their own willingness to take over responsibility and the older generations' willingness to pass on such responsibility. Current leaders themselves, by contrast, see no such discrepancy at all, which carries the risk of conflicts and misunderstanding that could ultimately hinder the intergenerational collaboration both parties aim for. ←

## PARTNERS

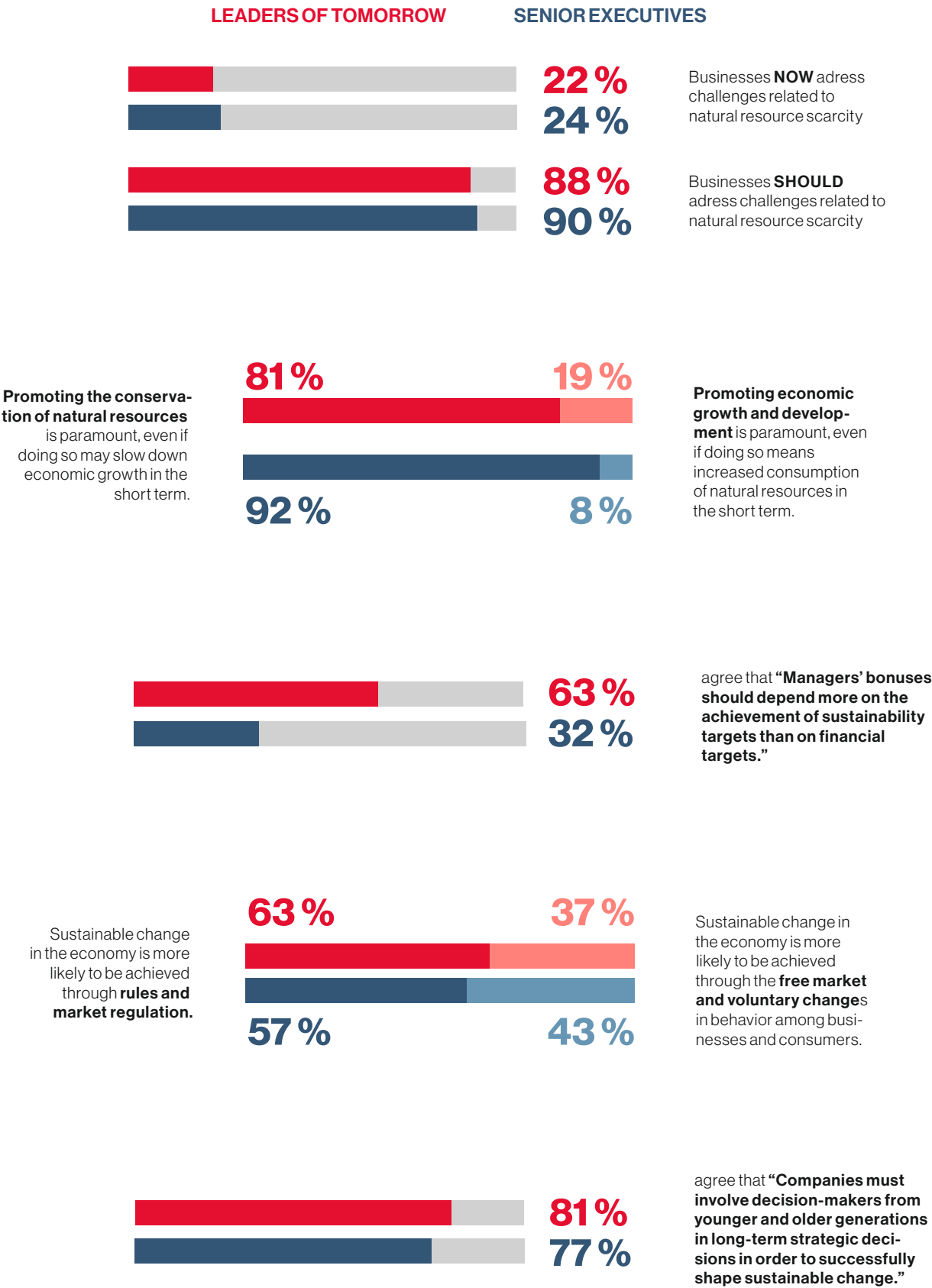
St. Gallen Symposium

## SOURCE

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Voices of the Leaders of Tomorrow: Confronting Scarcity. Nuremberg Institute for Market Decisions & St. Gallen Symposium.

CONFRONTING SCARCITY – INSIGHTS FROM TWO GENERATIONS OF LEADERS



# CHALLENGES OF MARKETING

AI in Marketing:  
Nothing Will Work Without It, Right?

*Team: Tobias Biró, Andreas Neus*



PHOTO: MORSA IMAGES, GETTY IMAGES

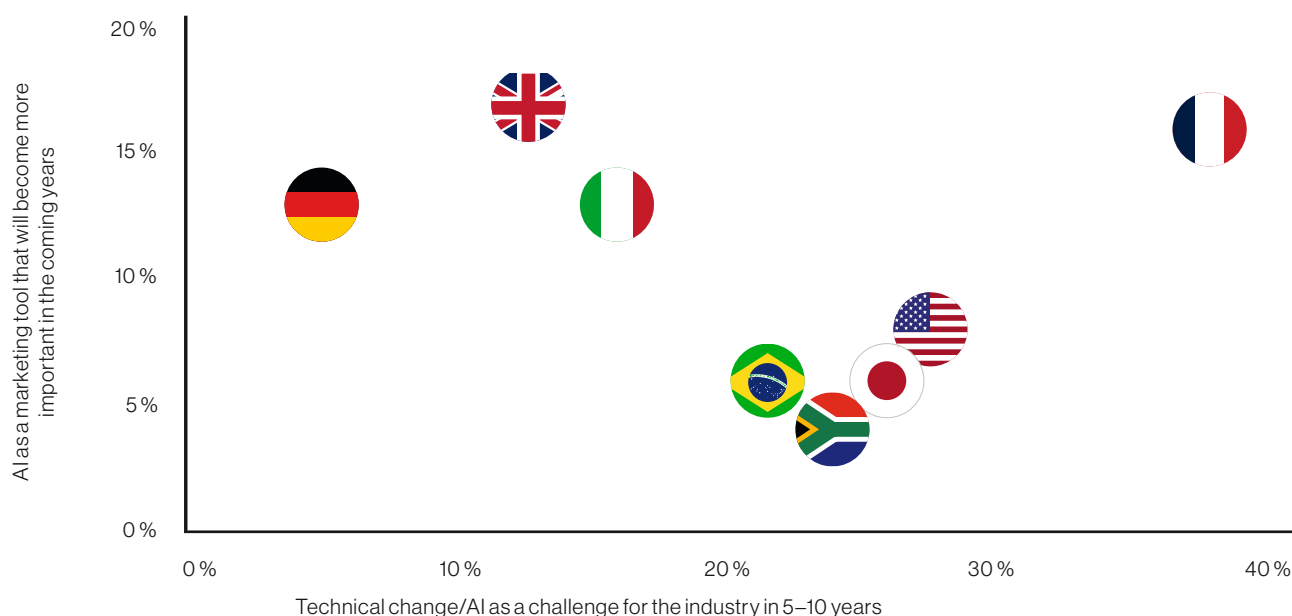


Figure 1: Particularly CMOs in Europe and the UK expect AI to gain importance as a marketing tool. Decision-makers in the US, Japan, Brazil, and South Africa see technical change as more of an industry challenge.

**A**I is currently on everyone's lips. While conversations around the consequences of AI have been ongoing for years, since the release of ChatGPT at the end of 2022, these discussions have intensified. From automated data analysis and automated personalized messages to virtual assistants in customer service, it seems like it is only a matter of time before smart programs take the profession to a new level. In reality, however, we still seem to be a long way off. This is shown by a recent study by NIM, for which 805 marketing decision-makers in eight countries were surveyed. According to the study, chief marketing officers (CMOs) are divided in their assessment of how important AI will be in the medium term when it comes to opening up or developing sales markets. The results were published in the NIM study series Challenges of Marketing.

According to the study, marketing decision-makers primarily in Europe are positive about the possibilities of AI as a marketing tool. The non-European CMOs surveyed—from companies based in the U.S., Japan, South Africa, and Brazil—were much less likely to see corresponding potential. On the other hand, they were more likely to describe technical change/AI as a medium-term challenge for the industry. What is striking in an international comparison is

that in Germany, comparatively few marketing managers are convinced that AI will become a major challenge for their own industry in the coming years. Here, the belief in opportunities clearly prevails, as a high proportion of decision-makers in Germany also believe that AI will become more important as a marketing tool. The profession, therefore, still seems to be in the process of exploring how to separate hype from real added value. ←



#### FURTHER READING

**Nürnberg Institut für Marktentscheidungen (2024).** Challenges of Marketing. Which Tasks Need to be Solved in Marketing. A Survey of Marketing Decision-Makers in Eight Countries

# NIMPULSE

## Despite Criticism: CO<sub>2</sub> Offsetting Enjoys High Acceptance

*Team: Michael K. Zürn, Tobias Biró, Holger Dietrich*

Offsetting one's own carbon footprint—that trend has already passed, hasn't it? This assumption would not be unreasonable, not after numerous scandals surrounding providers and their questionable compensation projects and the EU recently restricting “green” marketing claims based solely on carbon compensation.

However, offsetting emissions is not outdated yet, at least not in Germany, as a recent representative study by NIM with 2,023 participants shows. Sixty percent of Germans reported that they had already offset their emissions, and 70% wanted to compensate even more in the future. The most impactful motives for using carbon offsetting cited by the participants were a sense of responsibility and social pressure to compensate through one's personal environment.

The study also collected the reasoning of participants who did not want to compensate (more) in the future. What most inhibited willingness to compensate were fundamental concerns with the concept, i.e., missing trust in the providers of compensation projects. Nearly half of the participants stated that carbon offsetting was not the right way.

When being questioned about different pricing models for compensation, most of the participants expressed a prefer-

ence for carbon offsetting being already included in the price. It can be assumed that most consumers do not want to decide for themselves if (and how much) they compensate for their emissions. The more common model of voluntary additional payments for resulting emissions is less popular, indicating the future potential of the concept if providers are willing to switch their pricing model. ←



### FURTHER READING

**Nürnberg Institut für Markt-  
entscheidungen (2024).**

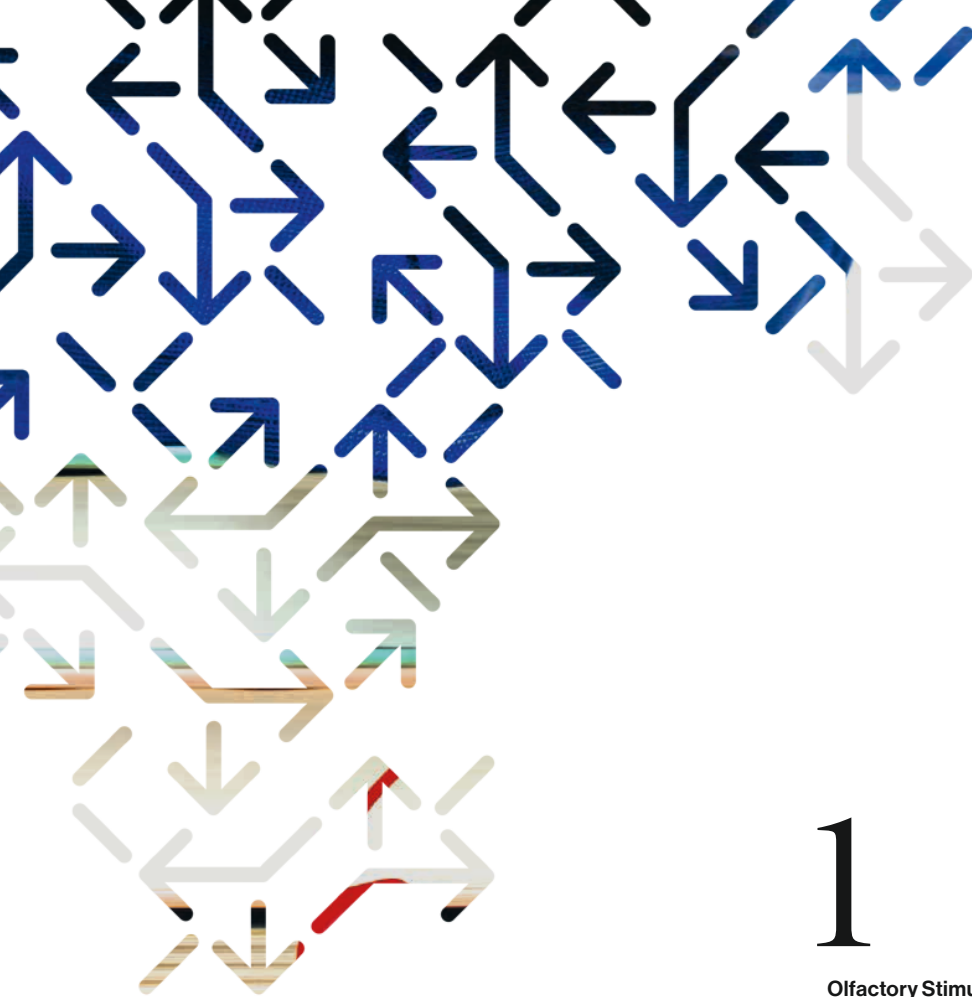
CO<sub>2</sub>-Kompensationen im Urteil der  
Verbraucher. NIMPulse 5.

(Only available in German.)



PHOTO: PARRADEE KIETSIRIKUL, GETTY IMAGES





# BACHELOR'S AND MASTER'S THESES

# 1

**Olfactory Stimuli in  
E-Commerce: An Experimental  
Study**

*Technical University of Munich*

# 2

**The Impact of Virtual  
Influencer Type on  
Purchase Decision-Making**

*Ostbayerische Technische  
Hochschule Amberg-Weiden*

# 3

**The Influence of Brands on the  
Willingness to Pay in the Circular  
Economy**

*University Erlangen-Nuremberg*

# 4

**Der Einfluss von Explainable AI in Social Bots auf die Kaufentscheidung von Konsumenten: Konzeption und Evaluation eines auf Knowledge Graphen basierenden Recommender-Systems für die Sportartikel-Industrie**

*Ansbach University of Applied Sciences*

# 5

**Toward Greener Choices: The Interplay of Choice Architecture and Carbon Labels in Food Selection**

*University Erlangen-Nuremberg*

# 6

**Nutzerakzeptanz von Social Robots—Einfluss von Emotionen bei Social Robots im stationären Sportartikel-Einzelhandel auf die Generationen Y und Z**

*Ansbach University of Applied Sciences*

# 7

**Entscheidungsunterstützung im Tourismus durch Social Robots—Design und Evaluation eines konversationsbasierten Empfehlungsansatzes basierend auf Touristensegmenten**

*Ansbach University of Applied Sciences*

# 8

**Carbon Footprints and Sustainable Housing**

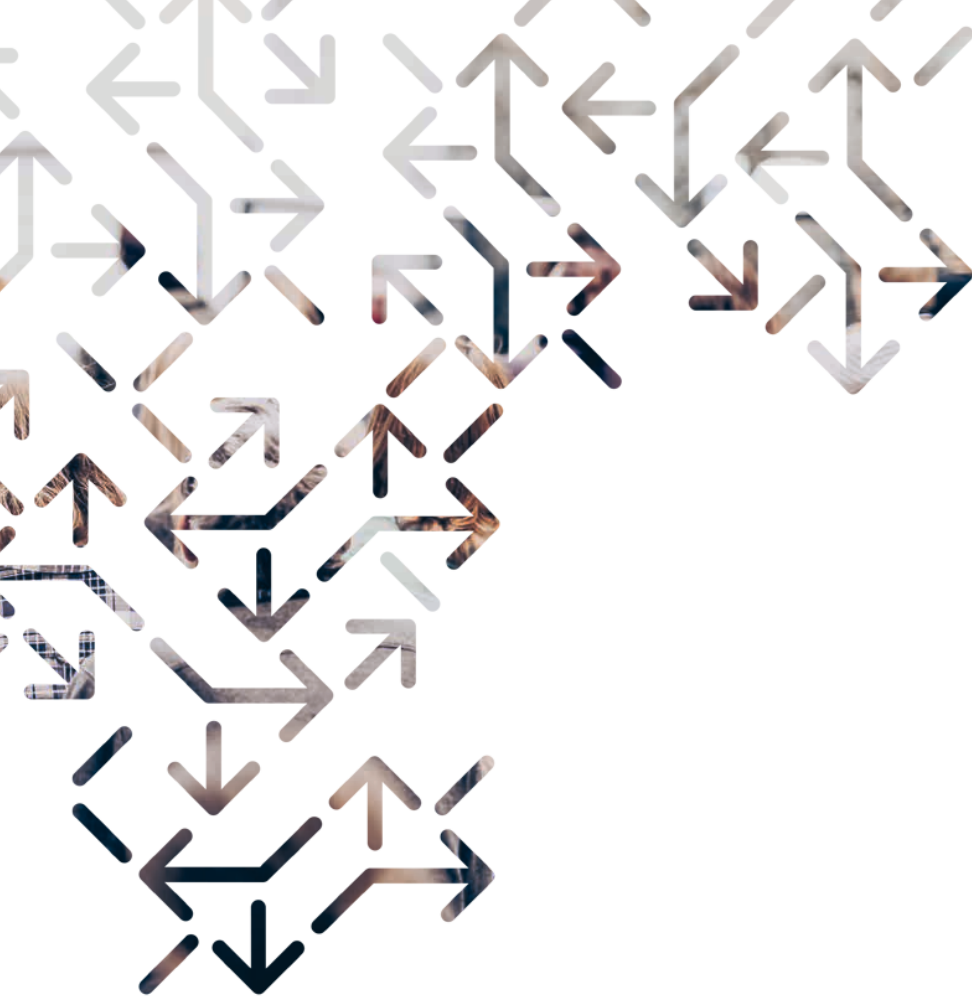
*Technical University of Munich*

# 9

**Beratungsgespräche mit Social Robots im Einzelhandel  
Experimentelle Untersuchung einer emotional gestalteten Social Robot Interaktion in Bezug auf die Akzeptanz und Kaufentscheidung der Kunden**

*Ansbach University of Applied Sciences*





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## Marketing Intelligence Review



### MARKETING DASHBOARDS

VOL. 15/NO. 1/2023

Marketing dashboards have evolved from reporting results on key performance indicators to a more dynamic and diagnostic tool. Now, they also debias information collection and decision-making and communicate widely the key metrics to focus on. In this issue, experts offer perspectives and dashboard insights, covering a broad range of metrics from brand through multi-channel distribution to society and ultimately to a company's financial performance.

#### GUEST EDITORS

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David J. Reibstein, Professor of Marketing, Wharton School, University of Pennsylvania, Philadelphia

### VIRTUAL CONSUMER EXPERIENCES—THE FUTURE OF SHOPPING IN THE METAVERSE

VOL. 15/NO. 2/2023



Some companies are already experimenting in virtual space, and some are doing so quite successfully. Nevertheless, many questions remain. What is possible? What will be possible in the future? What is relevant, and what is just a gimmick? We show insights from research projects on how augmented reality, virtual reality, and mixed realities can impact consumer decisions. In the articles, you will also learn how to utilize these new technologies to gain more customer insights. Read the latest findings about the metaverse and get a clearer understanding of how your own business can benefit from offering virtual consumer experiences.

#### GUEST EDITOR

Jella Pfeiffer, Professor of Business Administration and Information Systems, University of Stuttgart, Germany



## Publications

### PUBLICATIONS IN PEER-REVIEWED JOURNALS

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2023

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**Debias by Design — A Leader's Guide to Thinking Errors & Better Decision Making.**

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2024

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*NIM Working Paper Series*, 8.

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2023

**How the Past and the Present Shape Decisions for the Future: Making Better Innovation Decisions Under Threat.**

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*NIM Working Paper Series*, 9.

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2023

**The Psychological Foundations of Threat Rigidity.**

*NIM Working Paper Series*, 10.

## Conferences and Talks

# ACADEMIC CONFERENCES

**53rd Annual Conference of the  
European Marketing Academy 2024**

Bucharest, Romania

**83rd Annual Meeting of the Academy  
of Management 2023**

Boston, U.S.

**31th IPDMC: Innovation and Product  
Development Management  
Conference 2024**

Dublin, Ireland

**OR—Annual Conference of the  
Society for Operations Research in  
Germany**

Hamburg, Germany

**Druid Conference 2024**

Nice, France

**18. Internationale Tagung  
Wirtschaftsinformatik**

Paderborn, Germany

**EIASM Workshop on Top Management  
Teams Research 2023**

Leeds, UK

**RecSys/RecTour: ACM RecSys  
Workshop on Recommenders in  
Tourism**

Singapore

**30th IPDMC: Innovation and Product  
Development Management  
Conference 2023**

Lecco, Italy

**Jahrestagung der GfW**

Erfurt, Germany

**European Conference on Information  
Systems 2023**

Kristiansand, Norway

**Innovation Days 2023**

Munich, Germany

**SCORAI-ERSCP-WUR Conference on  
Sustainable Consumption and  
Production 2023**

Wageningen, Netherlands

**11th International Conference on  
Contemporary Marketing Issues 2023**

Korfu, Greece

# BUSINESS CONFERENCES AND TALKS

## BAMF Thementag Künstliche Intelligenz

Online

## IPEC 2023

Online

## Woche der Marktforschung

Online

## Innovation Event Marketing Buffalo Boots GmbH

Buffalo Boots GmbH

## sparkscon—digital experience conference

Augsburg, Germany

## 75 Jahre Statistisches Bundesamt: Fachtagung „Daten. Forschung. Zukunft“

Wiesbaden, Germany

## GOR 2023

Kassel, Germany

## planung & analyse insights conference

Frankfurt, Germany

## Service Plan Innovation Day

München, Germany

## TDWI

Nürnberg, Germany

## Machine Learning Week Europe

Berlin, Germany

## KI Navigator

Nürnberg, Germany

## 53rd St. Gallen Symposium 2024

St. Gallen, Switzerland

## Marketing Science Institute Summit 2024

Los Angeles, U.S.





# NIMCON

NIMCon is an interdisciplinary conference on topics related to consumer behavior and consumer decisions. Researchers from universities and other research institutions come together to discuss the latest findings from (behavioral) economics, psychology, marketing, management, data science, artificial intelligence, and business informatics.

The central topics of NIMCon 2023 were market decisions and sustainability. From different perspectives, we discussed the determinants of individual decisions as well as their consequences for markets, businesses, and society.





Studying Bribe-Taking in Laboratory Using a Novel Experimental Task

**Štěpán Bahník**

*Prague University of Economics and Business*

NIMpulse—NIM's Survey Series: Greenwashing vs. Greenacting

**Tobias Biró**

*Nuremberg Institute for Market Decisions*

Marketing in the Metaverse—Opportunities and Barriers for the Creation of Marketing Value

**Fabian Buder**

*Nuremberg Institute for Market Decisions*

Does Metaverse Fidelity Matter? Testing the Impact of Fidelity on Consumer Responses in Virtual Retail Stores

**Darius-Aurel Frank**

*Aarhus University*

Greenwashing Your Personality

**Sebastian Goerg**

*Technical University of Munich*

Effects of Music on Consumer Behavior

**Monika Imschloß**

*Leuphana University Lüneburg*

Consumer Response to Circular Economy Approaches and True Pricing

**Anne Odile Peschel**

*Aarhus University*

Closing the Attitude–Behavior Gap for Sustainable Products by Increasing the Credibility of Sustainability Claims

**Matthias Unfried**

*Nuremberg Institute for Market Decisions*

Psychology for Future: How Can Psychology Contribute to Sustainability

**Michaela Wänke**

*University of Mannheim*

Maybe Compensations—How Canceling Some Carbon Compensations Is Better for the Climate

**Michael K. Zürn**

*Nuremberg Institute for Market Decisions*



PHOTOS: NIM

# PORTRAIT OF THE NIM TEAM

## TOBIAS BIRÓ

*Research Communication Manager*

Tobias studied political sciences and is an expert in the field of communication of complex scientific topics. His main task is to prepare findings from research for practice and the mass media.

## DR. FABIAN BUDER

*Head of Future & Trends*

The sociologist and marketing researcher studies how technological innovations such as AI and social trends such as sustainability affect market decisions.

## ROLF BÜRKLE

*Head of Consumer Climate*

Rolf Bürkle is the Head of Consumer Climate at the Nuremberg Institute for Market Decisions. In this position, he is primarily concerned with the consumer climate, for which he has been responsible for over 25 years.

## HOLGER DIETRICH

*Senior Researcher*

The graduate statistician uses all types of models and methods for his research interests in modeling consumer preferences and advanced statistics and method development.

## NINA HESEL

*Senior Researcher*

The marketing expert conducts practice-oriented research into how technological and social trends influence market decisions. She is particularly interested in the areas of sustainability marketing and sustainable consumer behavior.

## DR. CAROLIN KAISER

*Head of Artificial Intelligence*

The business informatics specialist is interested in the interface between humans and machines. Her research focus is on human-centered artificial intelligence, conversational user interfaces, and human-robot interaction.

## DR. CHRISTINE KITTINGER-ROSANELLI

*Managing Editor der NIM Marketing Intelligence Review*

In addition to her position as the managing editor of the NIM Marketing Intelligence Review, the business economist holds assignments as an undergraduate lecturer at the Institute for Marketing, Branding, and Retailing at the University of Innsbruck.

## SANDRA LADES

*Head of Communication and Events*

The business graduate has many years of experience in marketing and press and is responsible for NIM's communicative approach. She is also responsible for the organizing events.

## DR. VLADIMIR MANEWITSCH

*Senior Researcher*

Vladimir is a business economist and statistician who focuses on sustainable consumption and researches of consumer decisions using analytical methods in the field of choice modeling and causal inference.



## DR. ANDREAS NEUS

*Managing Director and Vice President*

Andreas is a psychologist and economist who is interested in how people can make better, more transparent decisions using new technologies.

## JELENA PLES

*Office Management*

The certified business administrator plans, coordinates, and organizes all administrative tasks of NIM. She also works on the further digitalization of our processes.





PHOTO: NIM

## FLORIAN RITTER

*Research Communication Specialist*

Florian Ritter joined the NIM Research Communication team in April 2024. His main tasks involve the communication of research results. In this role, he contributes to all areas of communication but also designs and conducts his own surveys.

## SVEN SCHMIDT

*Head of Finance*

The graduate of business administration has many years of experience in all major fields of finance management. In his previous positions, he drove forward topics such as internationalization and digitalization.

## BIRGIT STOLTENBERG

*Senior Researcher*

The business mathematician's main areas of expertise are mathematical models, statistical methods, and optimization. Her focus is on sustainability, especially on sustainable consumer behavior.

## DR. MATTHIAS UNFRIED

*Head of Behavioral Science*

Matthias main field of interest concerns the behavioral foundations of market decisions. His focus is on influencing factors and their effects on the interaction between humans and machines.

## DR. MICHAEL ZÜRN

*Senior Researcher*

Michael is a social psychologist and behavioral economist who mainly uses experiments to better understand how people decide, why they do things, and how behavior can be changed. He is particularly interested in the influence of comparisons on decision-making. Several of his current research projects focus on sustainability.



## AARHUS UNIVERSITY

### **AARHUS UNIVERSITY, SCHOOL OF BUSINESS AND SOCIAL SCIENCES—MAPP CENTRE**

The MAPP Centre at the Business School of Aarhus University, led by Prof. Dr. Jessica Aschemann-Witzel, conducts research on customer behavior in the food and beverage sector and on the implications of these findings for industry and public policy. In joint research projects, NIM and MAPP are investigating, for example, how social nudges can change purchasing behavior and prevent unnecessary food waste and how sustainable packaging must be designed to make it easier for customers to make purchasing decisions in line with their values.



### **TECHNISCHE HOCHSCHULE INGOLSTADT**

NIM is cooperating with Prof. Dr. Jan Schwarz, head of the Bavarian Foresight Institute, on several research projects. The focus here is on the question of how methods of strategic foresight can be used to anticipate changes in consumer behavior and the resulting corporate decisions. Together with Prof. Dr. Michael Jungbluth and Prof. Dr. Patrick Cato, NIM is also researching the use of digital avatars at the stationary point of sale.



### **CENTRAL UNIVERSITY OF FINANCE AND ECONOMICS, PEKING**

NIM cooperates with the Business School of the Central University of Finance and Economics (CUFE) in Beijing, China, in order to understand new trends in consumer behavior on a cross-cultural level. An experimental laboratory is operated jointly, in which, for example, the influence of factors such as social norms or anthropomorphism in human-computer interaction on purchasing decisions is investigated.



### DATANIZING GMBH

A relatively new research partner is datanizing GmbH, a provider of automated solutions for AI-based analysis of large amounts of text data. Together with its founder, Prof. Dr. Christian Winkler, and Prof. Dr. Stefanie Scholz, Vice President of Research at the SRH Wilhelm Löhe University of Applied Sciences, NIM is investigating the connection between the purpose of brands communicated on the web and the purpose perceived by consumers.



### DM-DROGERIE MARKT GMBH + CO. KG

The retailer dm-drogerie markt is Germany's top-selling drugstore. Sustainable action is an essential part of the company's self-image. In order to give customers the opportunity to consciously choose sustainable products, dm is continuously working to optimize its assortment of dm-branded products. In a joint research project, NIM and dm-drogerie markt are investigating value-oriented purchasing decisions. The aim is to gain insights into which product characteristics lead to brands being perceived as more sustainable and to what extent this brand perception also influences customers' purchasing decisions.



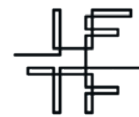
### FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG

Since 2007, NIM has collaborated with Prof. Dr. Nicole Koschate-Fischer from the GfK Chair of Marketing Intelligence. Since the expansion of this collaboration in 2022, NIM has also been working with Prof. Dr. Sven Laumer, Schöller Endowed Chair for Business Informatics, as well as with Prof. Dr. Martin Matzner, holder of the Chair for Digital Industrial Service Systems.



### HOCHSCHULE ANSBACH

Together with Dr. Alexander Piazza, Professor of Digital Communication and Applied Artificial Intelligence at Ansbach University, NIM investigates how to design conversation-based recommendation systems with social robots which help consumers make purchasing decisions, provide them with meaningful support, and are perceived by them as useful and appealing. The focus is on the use of social robots in retail and in tourism.



INSTITUTE FOR THE FUTURE

### INSTITUTE FOR THE FUTURE, PALO ALTO

The Institute for the Future (ITF) and NIM are cooperating as research partners and conducting joint research on topics such as the value of foresight for corporate market decisions and the future of corporate decision-making processes. The nonprofit think tank, based in Palo Alto, California, is regarded as the world's leading organization for foresight and future research.





### JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN

Together with the Chair of Business Administration, in particular, Digitization, E-Business, and Operations Management, headed by Prof. Dr. Jella Pfeiffer, NIM investigates issues around human-machine interaction and the voice-based customer journey. This investigation centers around emotions and the social exchange of experiences, the evaluation of methods for real-time measurement of emotions, and the effect of digital voice assistants on rational and emotional decisions.



### TECHNISCHE UNIVERSITÄT ILMENAU

Together with Dr. Elena Freisinger, Junior Professor at the Faculty of Economics and Media at the Ilmenau University of Technology, NIM is investigating how trust in AI-based decision systems can be strengthened and how it can be regained after an AI-based algorithm makes a wrong decision. At the same time, joint research is being conducted into how perception influences decisions about business model innovations.



### MCI MANAGEMENT CENTER INNSBRUCK

With Prof. Sabrina Schneider from the MCI Management Center Innsbruck, NIM is researching what role AI and algorithms can play in the innovation process of companies.



### UNIVERSITY OF PRETORIA

Workshops and PhD seminars on experimental economics, decision theory, and behavioral science are part of NIM's work with the University of Pretoria, South Africa, that has been ongoing since 2012. In addition to teaching, this collaboration also includes research in the jointly operated Market Decision Lab.



### KARLSRUHER INSTITUT FÜR TECHNOLOGIE

Together with Prof. Dr. Alexander Mädche, Chair of Business Informatics at the Karlsruhe Institute of Technology (KIT), NIM is shedding light on the question of how the design of and interaction with a social robot influence consumers' purchase decisions for high-involvement products such as smartphones. The focus is on the difference between the emotional and rational behaviors of the robot-based sales assistant.



### UNIVERSITÀ DI SIENA

In a joint project with Prof. Alessandro Innocenti, Head of the Department of Social, Political, and Cognitive Sciences at the Università di Siena, NIM is researching how humanlike characteristics in digital assistants influence people's decision-making behavior in a human-machine interaction. The research focuses on voice as a communication medium and on the effect of computer agents with virtual avatars.



### UNIVERSITÄT ST. GALLEN

The University of St. Gallen—School of Business, Law and Social Sciences, International Relations, and Computer Science—is a partner in research on the prediction of behavior and decisions beyond the premise of rational behavior. With Dr. Martin Eppler, Professor of Media and Communication Management, NIM is investigating, for example, how cognitive biases influence management decisions and how they can be reduced.



### TECHNISCHE UNIVERSITÄT MÜNCHEN

In a joint research project with Prof. Dr. Sebastian Goerg, NIM investigates the influence of the credibility and trustworthiness of sustainability claims on consumers' willingness to pay more for sustainable products and the extent to which this can lead to greenwashing. The resulting potential welfare losses and countermeasures are also being investigated.



### ST. GALLEN SYMPOSIUM

The St. Gallen Symposium is one of the world's leading initiatives for cross-generational dialogue on economic, political, and social developments. For more than 50 years, established leaders and visionaries have been brought together with exceptional young talent in St. Gallen and global locations. Since 2014, NIM has published the "Voices of the Leaders of Tomorrow" study in cooperation with the St. Gallen Symposium, giving voice to top talent and young professionals from more than 80 countries with a focus on key societal trends and inter-generational challenges.



### TECHNISCHE UNIVERSITÄT BRAUNSCHWEIG

In cooperation with Prof. Dr. Susanne Robra-Bissantz, Chair of Service Information Systems at the Institute of Information Systems at the Technical University of Braunschweig, NIM is researching the effectiveness of digital companions (so-called shopping companions) in helping consumers through the shopping process. The focus is on the question of the extent to which these can support consumers in shopping according to their own preferences.



### TILBURG UNIVERSITY

Together with Prof. Dr. Thorsten Erle from Tilburg University in the Netherlands, NIM is investigating the influence of emojis in the communication of sustainability in social media.

# OUTLOOK RESEARCH PRIORITIES



ILLUSTRATION: DRAFTER123, GETTY IMAGES

## NEW TECHNOLOGIES

### Consumer Decision-Making in a World of Digital Tech and AI

As new technologies emerge, they may fundamentally alter the foundation of market information and consumer decision-making. Advanced systems like generative AI can synthesize vast amounts of data, create personalized content, and even mimic human behaviors, but they also come with the risk of misinformation, market distortions, and digital oligopolies. It is therefore crucial to understand how these developments affect consumer decision-making in the evolving marketplace.

While new technologies could empower consumers to process information in more sophisticated ways, the impact of these

new technologies on consumer decision-making is still obscure. New media, products, and services emerge from these technologies, and a multitude of personalized information can be easily generated at a large scale by every player in the market. This might lead to the erosion of a formerly reliable source of information and cause high insecurity and confusion among consumers. Moreover, as these technologies become more advanced and exhibit human-like social behaviors, they are shaping new social relationships with users. The impact of these evolving interactions on consumer decision-making is still a developing area of understanding.

# SOCIETAL TRENDS

## Understanding Changing Consumer Decisions at the Point of Sale

In the dynamic landscape of consumer markets, the point of sale (POS) remains a critical juncture where purchase decisions are made. These decisions determine the commercial success of products and services and also reflect deeper societal trends and individual values.

This research program is dedicated to understanding consumer decisions at the POS, particularly as they evolve in light of growing sustainability awareness and the integration of digital and virtual environments into everyday commerce. Gaining insight into these important market trends is critical to developing marketing activities, consumer information, and regulations that reflect today's consumer ethics and marketplace realities.



PHOTO: NIKOLA STOJADINOVIC, GETTY IMAGES

# APPLIED BEHAVIORAL SCIENCE

## Information and its Processing is Crucial for Good Market Decisions

A central aspect of the socio-ecological market economy is functioning competitive markets. Two central aspects of competitive markets are perfect information (market actors have instantaneous access

to all information regarding prices, utility, costs, etc.) and rational consumers (individuals maximize their utility and only make decisions that increase their utility). In reality, however, these prerequisites for competitive markets are often violated. On the one hand, information asymmetry (i.e., only one party of a transaction has certain information and potentially utilizes this advantage) or information scarcity (i.e., information is simply not accessible or available) can be observed. On the other hand, problems that are too complex, limited cognitive capabilities/capacities, or limited time prevent fully rational choices. As a result, consumers often use heuristics when making decisions, which can result in biased decisions.

All these aspects can lead to inefficient decisions and inefficient markets, which the regulator often tries to counteract through regulatory intervention. Crucially, the effects of these interventions, especially their unintended side effects, are often unclear.



PHOTO: MARTIN BARRAUD, GETTY IMAGES

# PUBLISHING DETAILS

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# NUREMBERG INSTITUTE FOR MARKET DECISIONS

The Nuremberg Institute for Market Decisions (NIM) is a non-profit research institute at the interface of academia and practice. NIM examines how consumer decisions change due to new technology, societal trends, or the application of behavioral science and what the resulting micro- and macroeconomic impacts are for the market and for society as a whole. A better understanding of consumer decisions and their impacts helps society, businesses, politics, and consumers make better decisions with regard to “prosperity for all” in the sense of the social-ecological market system.

The Nuremberg Institute for Market Decisions is the founder of GfK.

