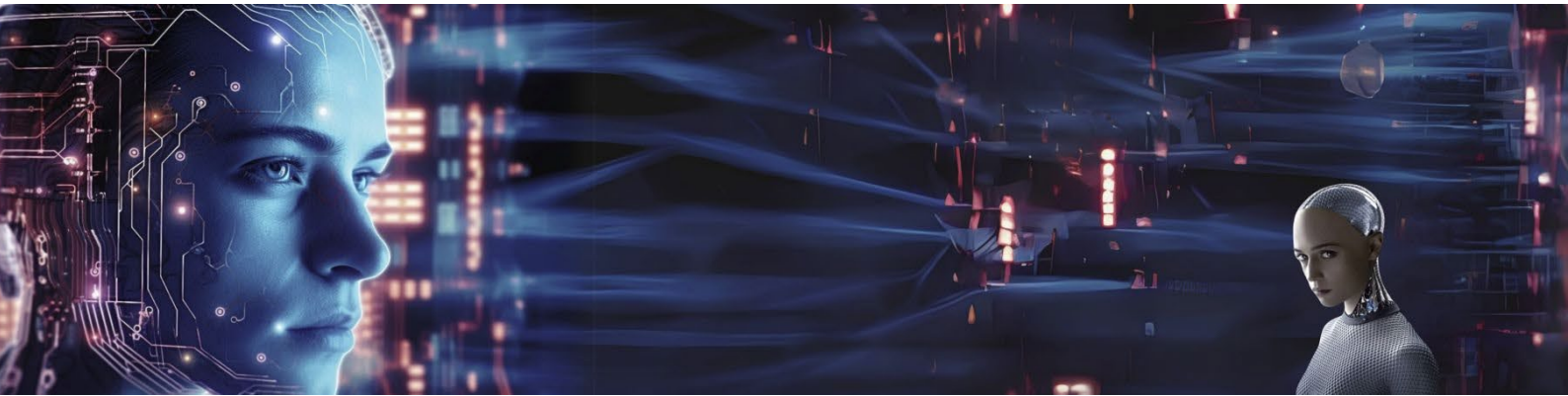


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Zaragoza University, Spain

10 - 12 June 2024

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1. Beyond Reality: Exploring Product-Environment Congruency in Immersive Virtual Environments

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Type of manuscript: Extended abstract

Keywords: virtual reality (VR); virtual nature experiences; green marketing

Extended abstract

Introduction & Objective

This study is currently in progress and is part of a doctoral thesis.

Global challenges like climate change and the rise of lifestyle-related illnesses have prompted policymakers worldwide to promote sustainable practices that improve the overall welfare of societies (Larceneux et al., 2012). This remains a significant challenge today, especially in resource-intensive industries like the fashion one (Olson, 2022). With growing consumer interest in purchasing environmentally friendly products, companies have begun to develop green marketing strategies to meet profit goals, foster sustainable purchasing behavior, and improve brand trust (Majeed et al., 2022). Despite adopting green practices, communicating sustainability values remains a significant challenge, particularly for new brands. Indeed, these brands are less known and often priced higher than their non-sustainable counterparts, facing difficulties in gaining consumer trust. Previous research suggests two main major communication appeals when dealing with sustainable values: functional or fact-based signaling and emotional or image-based signaling (Schmuck et al., 2018). Functional appeals are based on objective product attributes and are communicated through labels and product information, while emotional appeals can include visual representations of natural landscapes and evocative pristine views (Hartmann & Apaolaza-Ibáñez, 2009). Although research has largely focused on the effects of functional green branding attributes, this approach has certain limitations since a product's environmental impact typically does not directly translate into immediate individual benefits for the buyer (Chen, 2010; Chen et al., 2020). Therefore, this research focuses on emotional appeals, in particular on natural images that can activate feelings similar to those experienced in actual contact with nature, a phenomenon termed virtual nature experiences (Hartmann & Apaolaza-Ibáñez, 2008). Previous studies have shown that virtual nature experiences result in more favorable brand evaluations (Schmuck et al., 2018) and increased purchase intentions (Hartmann & Apaolaza-Ibáñez, 2008). A possible interpretation of this phenomenon can be explained through the lens of emotional conditioning (Kim et al., 1998). Brands can be linked through communication campaigns on a perceptual level with images of nature, thus leading to positive evaluations of neutral stimuli. However, recent research started to explore the possibility that the associative learning effect extends beyond just transferring liking; it can also be used to modify associations regarding specific brand attributes and properties, such as being green or organic

(Lutchyn & Faber, 2016). These are called non-evaluative beliefs, and the formation process of these beliefs is known as non-evaluative conditioning. Therefore, the first objective of this paper is to investigate the potential of virtual nature experience to generate non-evaluative implicit associations between novel brands and green value. The second objective of the study is to investigate the role of immersive technologies in enhancing this effect. Immersive technologies are coming to the fore in the contemporary marketing landscape, and a notable evolution is underway as industry practitioners embark on the virtualization of retail spaces and pop-up stores. Virtual Reality (VR) can be employed as an advertising tool for new product launches, providing product details through vivid imagery and interactive prompts while stimulating the consumers' imagination (Bin Kim & Jung Choo, 2023). The virtualization of retail environments allows for the modification of contextual cues in a way that is more effective and efficient than altering the physical layout and style of a traditional brick-and-mortar store, thus potentially facilitating the generation of emotional experience. More importantly, immersive technologies can create a profound sense of presence, which is the psychological feeling of “being there” within a simulated environment (Slater & Wilbur, 1997). VR has been shown to increase the strength of affective reactions during consumer experiences, with mental imagery and presence being significant factors influencing emotions and purchasing decisions (Loureiro et al., 2022). The emotional responses provoked in these immersive settings are often on par with those triggered by real-life experiences; thereby, we expect VR technology to intensify and enhance the conditioning process effectively, with respect to traditional media such as websites. While a significant body of literature has explored the influence of green contextual cues on user behavior in the e-commerce domain, there is a lack of research into the virtual environment's potential to generate desired non-evaluative associations in immersive contexts. Our study has the objective of addressing the aforementioned gaps by adopting a laboratory approach involving an implicit metric of non-evaluative association.

Methods

To test our hypotheses, we employ a laboratory investigation involving 200 participants between 18 and 35 years old in a one-factor (media: VR headset vs. website) between-subject design. In the VR condition, participants are asked to freely navigate virtual space through a Meta Quest 2 VR headset. During the experience, participants can grab the products using a replica of their hands in the virtual environment. In the website condition, participants navigate a fictitious website and can interact with the product using a mouse and a PC. In this condition, products are presented through static images. The brand, the products, and the info are consistent across all conditions. A novel brand is selected to mitigate the confounding effects of brand familiarity. To evaluate the impacts of virtual nature experiences, both conditions are characterized by graphical elements reminiscent of natural features. The virtual store is depicted as being situated atop a mountain, with products upon it. Similarly, the website features a naturalistic background with virtual products presented upon it. In both conditions, participants are asked to freely navigate the website (or the VR environment) and to discover new products. A time limit of 10 minutes is given to all the participants. After the exposure, participants are asked to run an Implicit Association Test to assess non-evaluative associations between brand and green value (Greenwald et al., 1998). This test operates on the premise that individuals may hold unconscious biases that influence their attitudes and behaviors, which can be revealed through reaction time patterns in association tasks.

This research highlights (VR) practical implications in green marketing, suggesting that VR can significantly enhance consumer perception of sustainability. By employing VR, companies can create immersive and engaging experiences for new product launches that promote a deeper internalization of green values.

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2. Technology adoption of AI-based alternatives to humans: the case of smart fitness applications

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Type of manuscript: Extended abstract

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Extended abstract

The continuous advancement of artificial intelligence has led to new AI-powered solutions available in the market for everyday consumers, with AI seamlessly integrating into the daily lives of many individuals. ChatGPT, for instance, reached the milestone of 1 million users in just 5 days, after its launch in November 2022 (Statista). From virtual assistants to recommendation systems, the expansion of this technology for consumers shows no sign of slowing down.

Currently, AI is now able to handle vast ranges of tasks and is improving at a rapid pace. Therefore, choosing a human professional may no longer be an obvious decision when AI-based counterparts are available. These alternatives can ideally fulfill the same needs, while providing advantages such as cost-effectiveness or reduced time delivery. With such considerations, the advent of AI in consumer market has the potential to reshape the way individuals evaluate products and services related to their needs. Thus, research on AI's technicalities and applications should be complemented by efforts in exploring its implications on user decision-making processes.

In doing so, this research looks at the fitness industry, a growing field that has been flourishing in a hybrid environment where digital and traditional fitness nowadays coexist (Falardeau, 2022). Consumers can choose from a wide range of options, with tech solutions sales continuing to increase, also thanks to COVID-19, which forced many people to exercise at home: indeed, in 2022 more than a third of U.S. consumers has used fitness apps (Statista). Within this context, we focus on the case of smart fitness applications. Enhanced by AI algorithms (Farrokhi *et al.*, 2021), these apps can use user information to create customized meal plans (Fister *et al.*, 2014), as well as training workouts (Xu, 2012). For example, Fitbod, with over 15 million downloads and 70 million logged workouts, personalizes plans by collecting user data and employing an algorithm with two key components: the exercise selector, choosing from 800+ options, and the capability recommender, adjusting workouts accordingly (Fitbod).

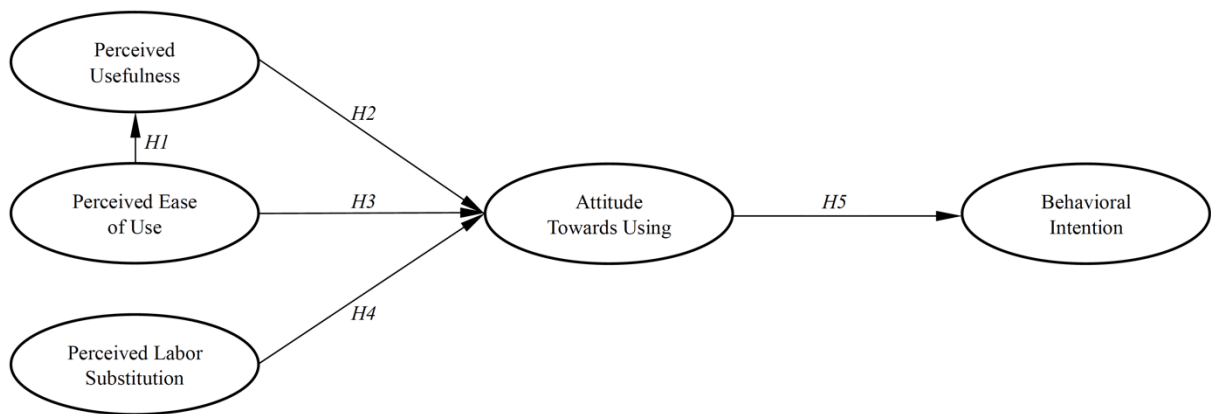
Individuals seeking guidance and support in their fitness journey might have to decide between these solutions and human personal trainers, both addressing similar needs: AI apps excel in accuracy when creating training programs, while personal trainers might notice subtle details about clients thanks to their experienced eye. Similar dichotomies can also arise in other industries with new AI-powered alternatives, stirring up questions surrounding consumer behavior and choices.

Thus, the aim of this research is to explore potential users' perceptions around AI-powered fitness trainers, precisely to what extent do they think AI is able to substitute

humans and how this influences technology adoption. The following research question guides the development of the study: what is the perception of users about technology substituting real humans and how does this affect technology adoption, in the case of AI fitness trainers?

Because of the exploratory nature of this research and to avoid overcomplexity at this stage, Davis' original Technology Acceptance Model (TAM) (1985), for its parsimony and effectiveness, was used as the basis to create a new structural model (Figure 1). Along with its original components, TAM was extended by adding a new variable named Perceived Labor Substitution, which represents the degree to which an individual believes that an AI trainer works and offers the same benefits as a human trainer.

Figure 1. Hypothesized Structural Model



A structural equation modelling (SEM) method was utilized to test the developed model. Primary data was retrieved through a web survey with 5-point Likert scale items, with a total of 51 anonymous and volunteer participants during August 2023. Hypotheses and results are summarized in Table 1.

Table 1. Summary of hypotheses and results

Hypothesis	Relationship	Standardized β	Result
H1	Perceived Ease of Use (PEU) → Perceived Usefulness (PU)	+ 0.62	Supported
H2	Perceived Usefulness (PU) → Attitude Towards Using (ATT)	+ 0.48	Supported
H3	Perceived Ease of Use (PEU) → Attitude Towards Using (ATT)	+ 0.33	Supported
H4	Perceived Labor Substitution (PLS) → Attitude Towards Using (ATT)	+ 0.53	Not supported
H5	Attitude Towards Using (ATT) → Behavioral Intention (BI)	+ 0.81	Supported

The results show how TAM's original hypotheses (H1, H2, H3, H5) are supported also in the case of AI-fitness apps. Related standardized β s all show positive values, suggesting positive relations between the variables included in such hypotheses. On the other hand, PLS to ATT was surprisingly not supported due to non-statistical significance, also considering the PLS mean value (2.02) in the questionnaire reflecting the respondents' position of doubt regarding AI's capability to fully replace humans and offer the same services and value. A possible explanation would be that evaluation of technology adoption in this specific case does not particularly rely on direct comparisons between AI-based options and human professionals, as characteristics taken individually may matter more for certain users. For smart fitness apps, for example, ease of use, usefulness, or even cost effectiveness might be the real drivers of technology adoption. With such considerations, AI-powered products may not necessarily compete directly with human professionals in the market, as both may appeal to different types of consumers with different needs, despite the common main function of guidance and support in fitness activities.

This research presents an alternative way of exploring the consumer decision-making process for fitness AI-based products, which can also be extended to other areas. The managerial implications that may derive can help in better addressing and satisfying consumers' needs as well as understanding the way they make choices when AI is involved. We hypothesize however that these relations might work differently depending on needs and industry, due to the complexity of the consumer behavior dimension.

Furthermore, because of the small sample, these implications should be confirmed with larger samples for better generalizability. What has been presented above should be considered as preliminary results for further and deeper research. The hypothesized structural model is simple and should be extended with more variables for a better and accurate understanding of AI technology adoption interplays.

Possible additions may include variables related to trust and safety, demographics, or social influence. For instance, when AI deals with delicate aspects of an individual, such as health in the case of smart fitness apps, trust in its safety may play a crucial role in technology adoption. Additionally, demographic elements can also influence behavior: different generations react differently to technology, while income may also determine decision making. Finally, social influence is also worthy of consideration, as external elements, such as others' opinion, can potentially impact consumers' attitudes, beliefs, and behaviors.

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3. Telemedicine apps and their influence on the tourism industry: Travelling with healthcare safety

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Type of manuscript: Extended abstract

Keywords: apps; telemedicine; mobile health; healthcare safety; tourism sector; technology adoption

Extended abstract

Telemedicine applications (*apps* in advance) provide the software infrastructure for digital patient engagement. Due to the advantages of portability and accessibility, the integration of telemedicine and mobile health as a single entity is emerging (Weinstein *et al.*, 2014). Telemedicine *apps* are one of the main gateways between consumers and mobile healthcare services (Lee *et al.*, 2019), offering more cost-effective and unrestricted access to traditional healthcare services (Huang, 2018). Bidirectional communication stands as one of the essential characteristics of smart services (Gao & Huang, 2019). While telemedicine *apps* offered by tech start-ups are gaining popularity, there remains a prevailing sentiment among the public that hospitals should be the primary providers of these services (Yuswohady *et al.*, 2021).

Based on the studies of Saigi-Rubió (2014), various methodological and disciplinary approaches have been employed to understand the factors influencing the adoption of telemedicine. Technology-focused research has highlighted the successful use of the Technology Acceptance Model (TAM in advance) (Davis, 1989) in elucidating factors contributing to the utilisation of information and communication technology (ICT in advance) by health professionals, as evidenced in several studies (Kamal *et al.*, 2020; Yu *et al.*, 2009; Zhou *et al.*, 2019;). Given the importance of existing research findings and the limited exploration of telemedicine *apps* usage in the tourism industry, there is a growing emphasis on recognising telemedicine *apps* as a crucial factor in ensuring the safety of tourist healthcare.

Qualitative research started due to the lack of a thoroughly verified theory that comprehensively explains the correlation between telemedicine *apps* and their use of travel experiences. Before conducting the qualitative study, an extensive literature review was undertaken to enhance the comprehension of the research problem and thereby improve the quality of the subsequent face-to-face interviews. The initial phase involved selecting different relevant experts from diverse domains including medicine, the tourism industry, consumer organisations, computer applications, and academic researchers, whose contributions have been notable. Sample selection was guided by the purposive sampling method (Berg & Lune, 2014; Corbin & Strauss, 2015; Pandit, 1996; Shim *et al.*, 2020).

This research aims to study the main factors influencing telemedicine *apps* effectiveness and explore potential healthcare safety issues that may arise during travel. The objective is to identify and analyse factors related to telemedicine *app* usage and the healthcare safety issues pertinent to travel. These objectives have been outlined as follows:

(1) Determine the usefulness of telemedicine *apps* for health monitoring and elucidate the contributing factors contributing to this perception.

(2) Identify the positive aspects of telemedicine *app* usage by tourists, including motivators and influencing factors, which are pivotal for assessing healthcare safety.

(3) Investigate the relationship between the use of telemedicine *apps* and the perceived healthcare safety they provide tourists. This includes understanding fundamental aspects of tourism management and proposing measures for tourism agents to leverage them effectively.

(4) Highlight the drawbacks that arise from the use of telemedicine *apps* by the user. Studying these disadvantages helps to determine whether the relationship between utility and healthcare safety is compromised and their potential influence during travel.

For this research, the input of experts within their respective domains was essential, as they offer a globalised perspective while maintaining a nuanced understanding specific to their area of expertise (refer to Table 1).

The qualitative analysis was conducted through the utilisation of Atlas.ti software and employing Grounded Theory Methodology (Pandit, 1996; Shim *et al.*, 2020), and it remains ongoing. This analytical process is anticipated to yield insights pivotal for informing the subsequent quantitative study, which will be further augmented by the application of structural equation modelling.

This research carries substantial academic implications for the tourism and hospitality industry, offering insights into the determinants shaping the adoption and usage of telemedicine *apps* during travel experiences. The behavioural intentions of tourists with the mediating role of tourist satisfaction have yet to be explored in hospitality and tourism research (Majeed *ict*, 2020). Certainly, various lines of research could be explored:

(1) Analysis of the impact on tourist behaviour: investigating how the availability of telemedicine services through mobile *apps* influences tourists' travel behaviour and decisions, such as destination choice, travel duration, and frequency of travel. According to Circella and Mokhtarian (2017), ICT may influence travel in several ways such as by influencing the location of residences and travel mode choices (Mouratidis, Peters, & van Wee, 2021). Smartphone *apps* offer a variety of advanced functions and features including real-time location-specific data. They provide information on several destinations as well as travel solutions to those destinations (Jamal & Habib, 2020).

(2) Development of specific telemedicine services for tourists: exploring the possibility of developing and offering telemedicine services specifically designed for tourists, addressing their unique needs such as medical assistance in different languages, connecting with local doctors, and coordinating with emergency services. Research studies have demonstrated that telemedicine is gradually emerging as a prominent ICT service, with notable effects on the traditional mechanism of healthcare services (Kamal *et al.*, 2020).

(3) Collaborations between the tourism industry and telemedicine providers: investigating collaboration models between tourism companies (hotels, airlines, travel agencies) and telemedicine service providers (hospitals, insurers, public health services) to offer integrated packages that include remote medical care as part of the tourist experience. The telemedicine–medical tourism system includes tourists, tourist destinations, transit, road regions, tourist-producing regions, the tourism industry, telemedicine support systems and healthcare organisations (Gu *et al.*, 2021).

As a managerial contribution, this theoretical framework emphasises how integrating healthcare services with telemedicine *apps* in specific applications can enhance travellers' experiences and improve healthcare safety standards during their journeys. People can perform more than two activities at the same time; for example, travel and telework, travel and socialise online, and travel and perform educational or recreational

activities (Mouratidis, Peters, & van Wee, 2021). In addition, tech-savvy attitude is positively associated with trip planning and travel outcomes (Jamal & Habib, 2020).

Table 1. Purposive sample of experts

Expert	Area of specialisation	Position in 2023 (related to their specialisation)	Month and location of the interview	Duration of the interview (approx.)
Estefanía Artetxe	Tourism.	Director of Marketing and Distribution at Be Mate Hotels.	May 2023. Madrid.	30 min.
Luz Molano	Consumer rights.	Lawyer at OCU (Organización de consumidores y usuarios).	June 2023. Madrid.	30 min.
Javier Viñals	Computer Applications/ Telemedicine.	Founder and CEO of Careexpand. Doctor. Computer Engineer.	July 2023. Madrid.	30 min.
Alicia de la Cuerda	Medicine.	Vice-Dean of the Faculty of Health Sciences HMHospitales of the UCJC. Doctor of Medicine.	August 2023. Madrid.	35 min.
Carlos Monfort	Medicine.	Internist at HMHospitales. Doctor of Medicine.	August 2023. Madrid.	30 min.
Reinald Gimeno	Tourism.	Commercial Director at Mas Salagrós Ecoresort.	September 2023. Barcelona.	40 min.
Hilario Serrano	Consumer rights.	Lawyer at OCU (Organización de consumidores y usuarios).	October 2023. Madrid.	30 min.
Laura Melendo	Marketing/ Communication.	Lecturer in Communication Sciences from the European University of Madrid.	October 2023. Madrid.	30 min.
Ramón Carrasco	Marketing and data mining.	Vice-Dean of Doctorate, Research and Lifelong Learning at the Faculty of Commerce and Tourism of UCM.	October 2023. Granada.	30 min.
Roberto Pérez Bona	Computer Security.	Channel Manager.	October 2023. Madrid.	30 min.

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4. How can emotions influence customer experience in retail mobile apps?

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Type of manuscript: Extended abstract

Keywords: emotions; customer experience; mobile applications

Extended abstract

Research objectives and questions

The increasing usage and popularity of retail mobile applications (Chopdar & Balakrishnan, 2020) have resulted in a significant amount of research exploring user experience (Norman & Nielsen, 1998) and its relationship with satisfaction, particularly from a technology adoption standpoint (Molinillo et al., 2022; McLean et al., 2018). Our research also seeks to offer fresh perspectives in this field, with a focus on emotional responses to retail mobile apps and their influence on satisfaction and the shopping behavior.

The purpose of our research was to examine the effects of utilitarian and hedonistic features of mobile apps on customer experience. Furthermore, we sought to establish the degree to which positive or negative emotions experienced during app usage impact shopping satisfaction and, as a result, influence the value of the shopping basket.

The research method

Our research model underwent two stages of testing. Firstly, the impact of mobile user experience on emotions and satisfaction was investigated using PLS-based structural equation modelling. Data was collected through a random sample of respondents via social media access (Study 1). Finally, 206 shoppers responded who use retail mobile apps and are at least partly responsible for their household's shopping.

After examining the proposed framework, a distinction was made between the hedonic (aesthetics, enjoyment) and utilitarian (ease of use and perceived usefulness) aspects of the mobile user experience, and their effects on positive and negative emotions were identified. Furthermore, the impact on customer basket size was analysed. Data was collected from a sample of shoppers who were registered in a loyalty programme of a popular international retail chain in three countries: Hungary, Slovakia, and the Czech Republic (Study 2). The online survey reached 541 respondents. In addition to the survey data, database was supplemented with transaction data for the 12 months prior to the survey, which provided a comprehensive overview of both online and offline purchases, including the number of visits, basket size, and basket value of the respondents.

When designing the mobile user experience, the impact of Akdim, Casaló and Flavián's (2022) research on the UX factors of social media applications was taken into account. Specifically, the impact on satisfaction was examined, which in turn affects long-term usage. The focus was on ease of use, perceived usefulness, and enjoyment factor of the application. The measurement scales were constructed with heavy reliance on the research cited in the study.

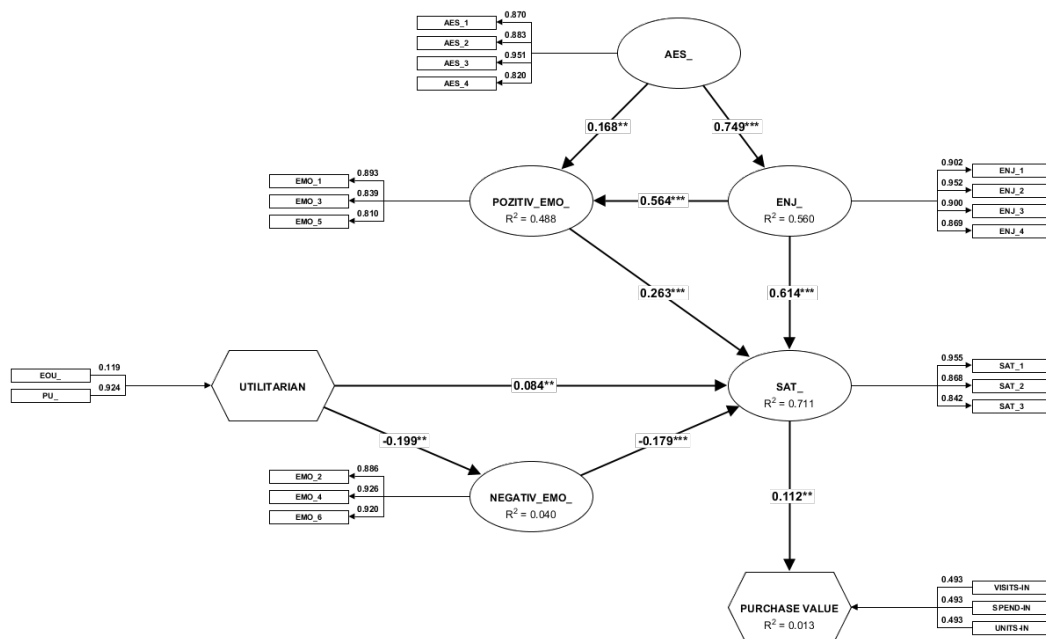
Finally, the TAM model's utilitarian factors and hedonic aspects, such as enjoyment and aesthetics, were included. Due to the lack of mobile app-specific measurement scales in the literature, we had to rely on validated items from related research.

However, it is worth noting that our research is supported by a growing body of literature that highlights the importance of emotional responses at various stages of the customer experience (Verhulst et al., 2020; Bagdare, 2015; Magids et al., 2015; Bedwell et al., 2019; Rychalski & Hudson, 2017; Manthiou et al., 2020; Cachero-Martínez & Vázquez-Casielles, 2021).

Preliminary results findings and originality of paper

The notion that positive experiences inevitably result in positive purchase outcomes, such as satisfaction, repurchase intentions, and positive word-of-mouth, while negative experiences lead to negative outcomes, such as dissatisfaction or refusal to purchase, is currently under scrutiny (Manthiou et al., 2020). Our research findings align with this perspective, as we have analysed the following model.

Figure 1. Emotional Aspects of Customer Experience in Mobile apps



The acceptability of the measurement models in the PLS-SEM analysis is based on the confirmatory factor analysis (CFA) performed on several measurement values, including HTMT < 0.9, AVE > 0.5, SRMR = 0.0704, Dijkstra-Henselers Rho (ρ_A) = 0.89 - 0.95, and Cronbach's alpha (α) = 0.85 - 0.95.

The results of the second sample suggest that negative utility factors associated with retail mobile app usage may have a negative impact on customer satisfaction with the app, through the elicitation of negative emotions ($p < 0.005$). Furthermore, it was found that hedonic aspects of mobile apps, such as enjoyment or aesthetics, can enhance satisfaction by eliciting positive emotions ($p = 0.000$). It is worth noting that according to the relationship analysis results, the aesthetic appearance of a mobile app has a direct impact on positive emotions and enjoyment ($p = 0.000$).

Moreover, the results indicate that satisfaction with a retail mobile app can have a small ($R^2 = 0.122$) but significant ($p = 0.000$) effect on purchase outcomes. In other words, the

more satisfied a customer is with a retail mobile app used while shopping, the higher the customer's basket spend is.

The research presents a significant finding that positive emotions are derived from the hedonic dimension of user experience, whereas negative emotions are linked to the utilitarian dimension. These emotions have an influence on user satisfaction, which subsequently affects the size of the shopping basket. The investigation of the impact of emotions on satisfaction and shopping basket size in relation to the hedonic and utilitarian dimensions of mobile apps is an area of research that has not been explored before. Our study provides valuable insights into this previously unexplored topic.

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5. Hi, I'm Dr. Chatbot! Exploring the relationship between chatbots and customers in the healthcare context

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Type of manuscript: Extended abstract

Keywords: digital health; health chatbots; chatbots-customers interactions

Extended abstract

Research objectives and questions

In the last 30 years, information technology and digital communication have revolutionized interactions between citizens and healthcare providers. Digital health broadly refers to the use of information and communication technologies to improve human health, health care services, and wellbeing for both individuals and populations (e.g., Adjekum et al., 2018). A large number of digital technologies such as the Internet of Things and artificial intelligence (AI), self-service technologies (SSTs) as chatbots are increasingly used in healthcare (WHO, 2019). Telecare, telehealth, telemedicine, mHealth, digital health and eHealth services are collectively referred to as technology enabled care, which integrates medical technology, digital, media and mobile communications. Specifically, common patients' engagement platforms (PEPs) include portals, mobile applications for android/iOS platforms, and messaging chatbots (Campbell et al., 2020), that can be accessed by individuals on their smartphone, tablet, or computer.

In light of this digital revolution, it becomes critically important to understand how healthcare organizations can use online communication channels and digital tools to design health information that is easily understandable and readable for all citizens, thereby promoting their empowerment. This study thus examines individuals–chatbot interaction within the context of health marketing communication, which is one of the fastest growing fields for chatbot technology (Yun et al., 2021).

Among the different AI devices (e.g., Yun et al., 2021, Huang & Rust, 2023.), chatbots are artificially intelligent agents capable of having turn-based conversations with users through the medium of text (Ramesh & Chawla, 2022). A chatbot is a type of conversational agent that can participate in humanlike conversations, through either pattern matching techniques (as in the case of chatbots trained on an existing dialogue database but incapable of learning from interacting with customers) or machine learning approaches (chatbots that can learn from interacting with customers using natural language processing technology that relies on machine learning; Adamopoulou & Moussiades 2020; Araujo 2018; Broeck, Zarouali, and Poels et al. 2019). In addition to text-based agents, chatbots can also refer to voice-based agents or smart assistants (Wirtz et al. 2018; Flavian et al., 2023).

Chatbots have been increasingly used in many sectors, such as health care, hospitality, entertainment, banking, and e-commerce sectors (Ramesh & Chawla, 2022; De Rosis et al., 2016; De Rosis, 2018). While this technology is still in its developmental phase, health chatbots could increase the relationships between health providers-customers by

facilitating for instance the access to healthcare, doctor–individuals and clinic–individuals communication, or help to manage the increasing demand for health services such as via remote testing, medication adherence monitoring or teleconsultations (e.g., Hoermann et al., 2017). It follows that such technology could potentially alter the delivery of healthcare systems, increasing uptake, equity and cost-effectiveness of health services while narrowing the health and well-being gap (Nadarzynski et al., 2019).

Despite the increasing academic interest on the adoption of chatbots in the healthcare sector (e.g., Tsai et al., 2021; Yun et al., 2021), many questions remain overlooked thus leaving room for further research. For instance, which are the different communication roles chatbots can play (Følstad, Skjuve & Brandtzaeg, 2019), which design elements affect evaluations of a chatbot in terms of quality and outcomes (e.g., customers' trust and satisfaction), how customers perceive chatbots and their interactions with them (Van Pinxteren, Pluymaekers & Lemmink, 2020), the criteria customers use to evaluate their interactions with chatbots (Brandtzaeg & Følstad, 2017), and the consequences of their evaluations (Araujo 2018).

Based on these premises, the present study aims at investigating which design cues (e.g., anthropomorphism) and other aspects as perceived attributes (e.g., perceived usefulness, empathy; Ramesh & Chawla, 2022) work best in improving the chatbots-customers relationship within the health context. Particularly, adopting Pennucci et al. 's (2022) framework, the study will explore how such chatbots' aspects might be designed to foster individuals' health education, activation, engagement and empowerment to improve their health and wellbeing. Moreover, the research will investigate how these cues have an impact on customers' trust and satisfaction when interacting with a chatbot.

Research method and expected results

The study adopts a mixed-method design (Davis et al., 2011) by presenting a focus group (Study 1) that will guide two experimental studies (Studies 2 and 3).

The aim of Study 1 is to explore the willingness of customers to interact with chatbots and their characteristics that might inhibit or facilitate this interaction in the health context. Customers are increasingly having real interactions with chatbots in many service settings, leading to a need for a deeper understanding of factors that affect their experiences, trust, and satisfaction.

Given the limited insights provided by the literature on the characteristics that inhibit or facilitate these interactions in the health context, we adopt an inductive qualitative approach drawing on the focus group method as an effective means of exploratory data collection (Calder, 1977; Fern & Fern, 2001). The focus group will enable us to observe group interaction, which is the hallmark of this method. This enhanced level of interaction helps participants offer multiple facets compared to one-on-one interviews (Krueger, 2014), which is especially beneficial given the complexity of the topic under investigation.

Results of Study 1 will then guide two subsequent experimental studies (ongoing) which are designed to test what chatbots' characteristics affect individuals' health education, activation, engagement, empowerment, trust and satisfaction by also investigating possible underlying mechanisms (e.g., warmth and competence, empathy; Belanche et al., 2021).

Originality of paper

This paper aims at advancing the recent literature on the use of chatbots in the healthcare context, since there is still limited empirical data regarding the factors influencing customers' response to health chatbots. Particularly, this study contributes to previous knowledge by showing which health chatbots characteristics might inhibit or facilitate individuals' health experience, thus increasing customers' trust and satisfaction (Pennucci et al, 2022). From a managerial point of view, a key challenge for health providers is understanding how and where to implement chatbots in a way that avoids a negative impact on the customer experience. In this regard, the results of this research provide actionable guidelines on how to design health chatbot characteristics to increase the customers' experience.

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6. Unveiling Customer Expectations of Chatbot Interactions: A Systematic Literature Review

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Type of manuscript: Extended Abstract

Keywords: chatbots, customer expectations, systematic literature review

Extended Abstract

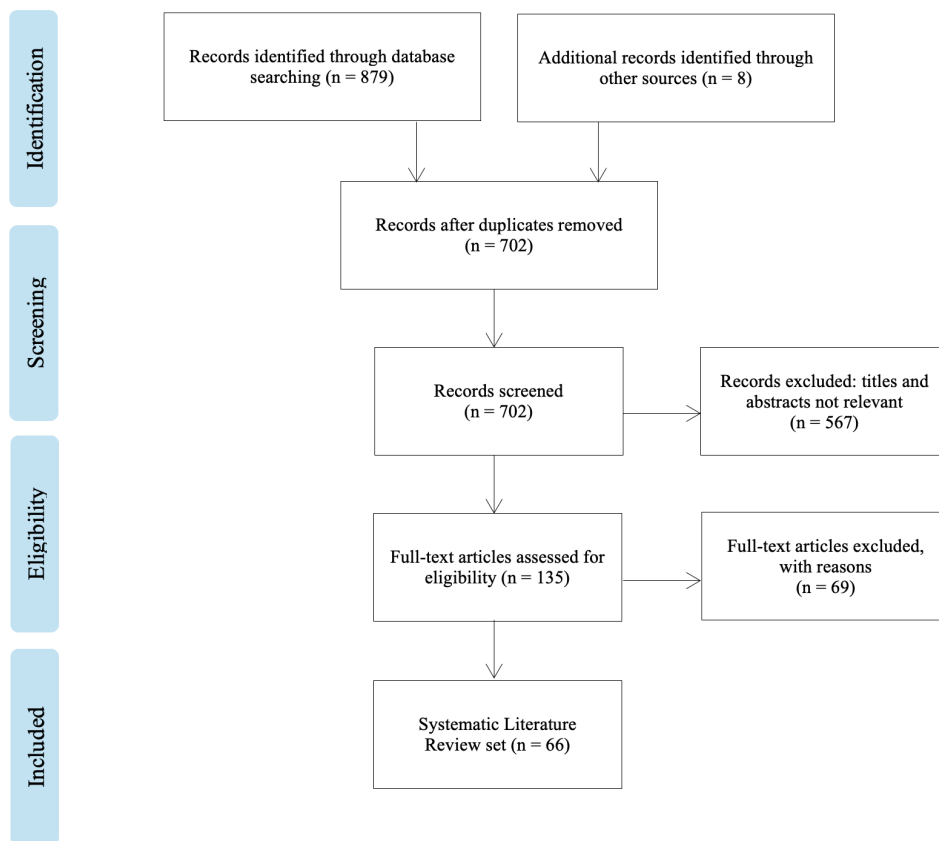
Introduction

Chatbots serve as vital customer communication tools, with rising investment trends indicating their importance in modern business (Belanche *et al.*, 2020). Despite their growing acceptance, many customers still find chatbot interactions unsatisfactory, often due to unmet expectations (Crollic *et al.*, 2022; Zamora, 2017). As a result, understanding these expectations, which may be influenced by past experiences and/or media portrayal, is important. However, existing research lacks insight into pre-interaction customer expectations. Our paper aims to fill this void by conducting a systematic literature review focused on identifying the expectations of customers who interact with AI-powered chatbots, and analysing the factors shaping these expectations.

Method

The paper follows the systematic review approach proposed by Denyer & Tranfield (2009). The search strategy employed keywords aligned with the study's aims, constructed within the PICO framework. Five leading databases were utilised, resulting in a total of 879 records. Following a filtering process, 66 studies remained for thematic analysis (Figure 1).

Figure 1. PRISMA Flow Diagram, adapted from Moher et al. (2009)



Findings

Descriptive Analysis

An analysis of the number of publications over the years shows a general upward trend suggesting that the topic is becoming increasingly relevant in recent years. The discussion takes place in a variety of journals, with the most frequently utilised journals being the International Journal of Human-Computer Interaction and Computers in Human Behavior.

A trend analysis of the most frequently used author keywords is illustrated in Figure 2. This analysis reveals that in 2023, ‘trust’ surpassed ‘artificial intelligence’ as the second most highly used author keyword. This result continues to underline the relevance of research on customer trust in relation to AI chatbots, indicating that customers prioritise trustworthiness and reliability in their interactions with AI-driven chatbots over the mere technological features.

Figure 2. Trend analysis of author keywords

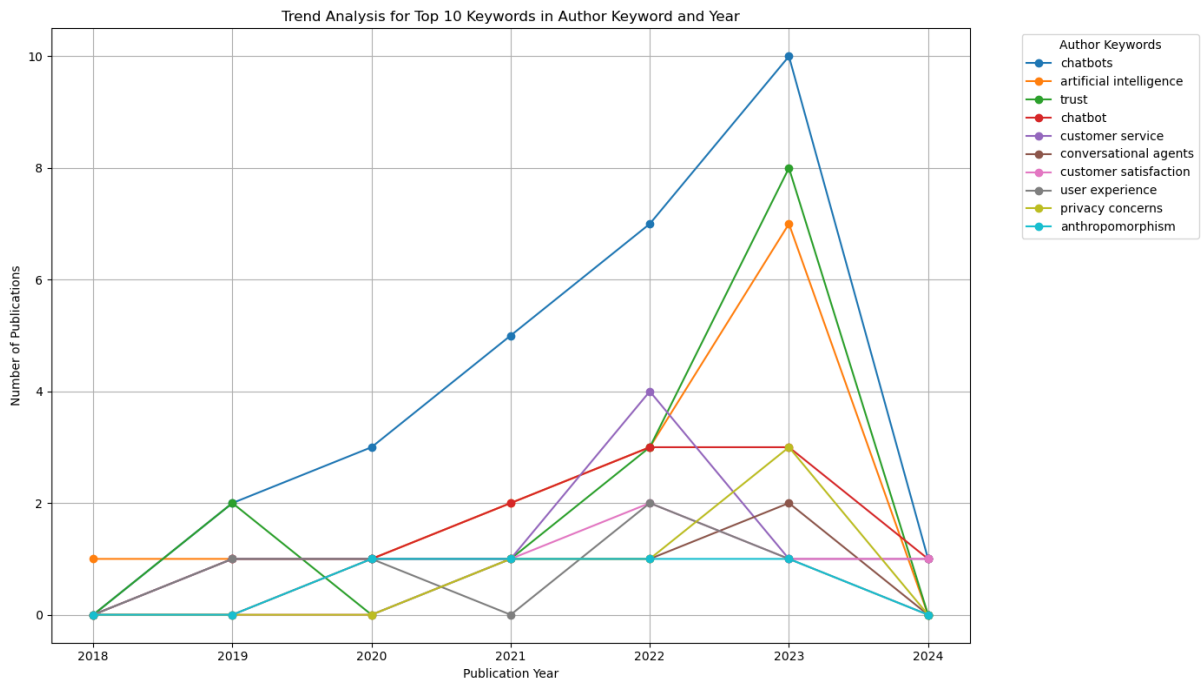


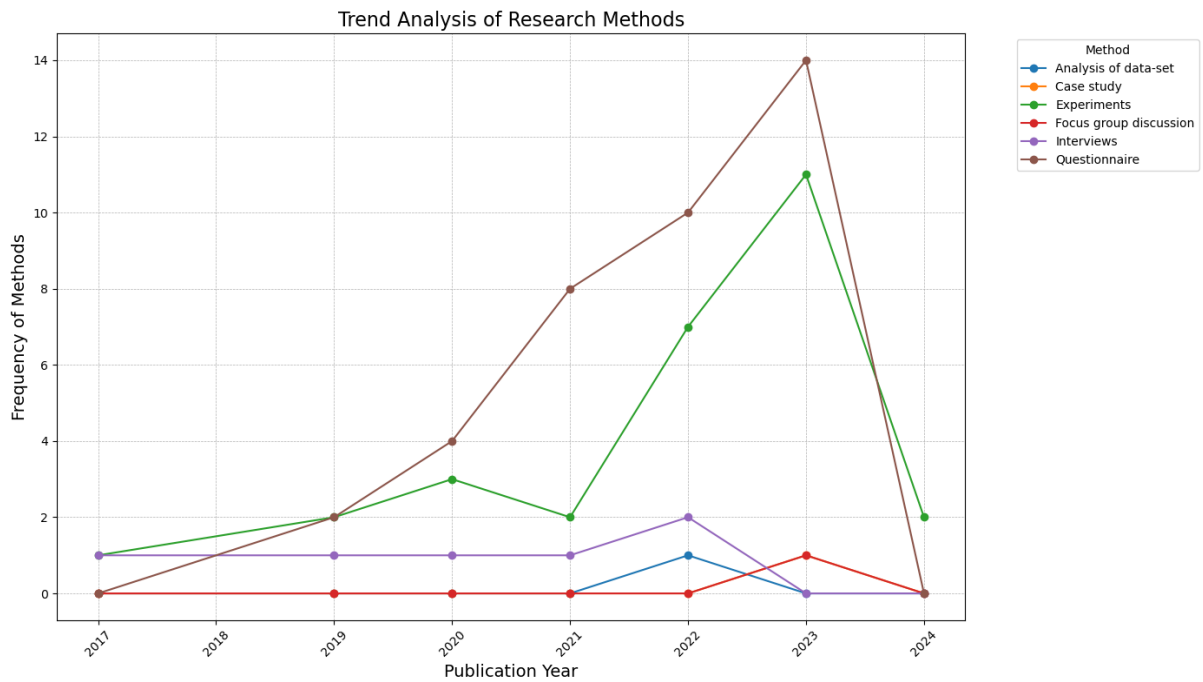
Table 1 summarises the most frequently adopted theoretical frameworks within the reviewed articles. Theories relating to chatbot acceptance, anthropomorphism and customer dis/confirmation of expectations were among the most frequently adopted by the articles reviewed.

Table 1. Summary of theoretical frameworks used

Theoretical Framework	Frequency
Technology Acceptance Model (TAM)	9
Anthropomorphism	8
Expectation Confirmation Model (ECM)	8
Computers as Social Actors (CASA) theory	6
Information System Success (ISS) model	6
Social presence theory	5
Expectancy Violation theory	4
User eXperience (UX) design	4
Service quality (SERVQUAL)	4
Trust theory	4

In the majority of cases, data collection involved the utilisation of questionnaires and experiments. Qualitative methods, such as interviews, were used to a much smaller extent. A trend analysis of the different methods used, disclosed in Figure 3, reveals a discernible upward trend in the use of experiments and questionnaires throughout the years. On the other hand, methods such as focus groups discussions and interviews exhibit a consistent but comparatively lesser frequency of utilisation.

Figure 3. Trend analysis of research methods used



Thematic Analysis

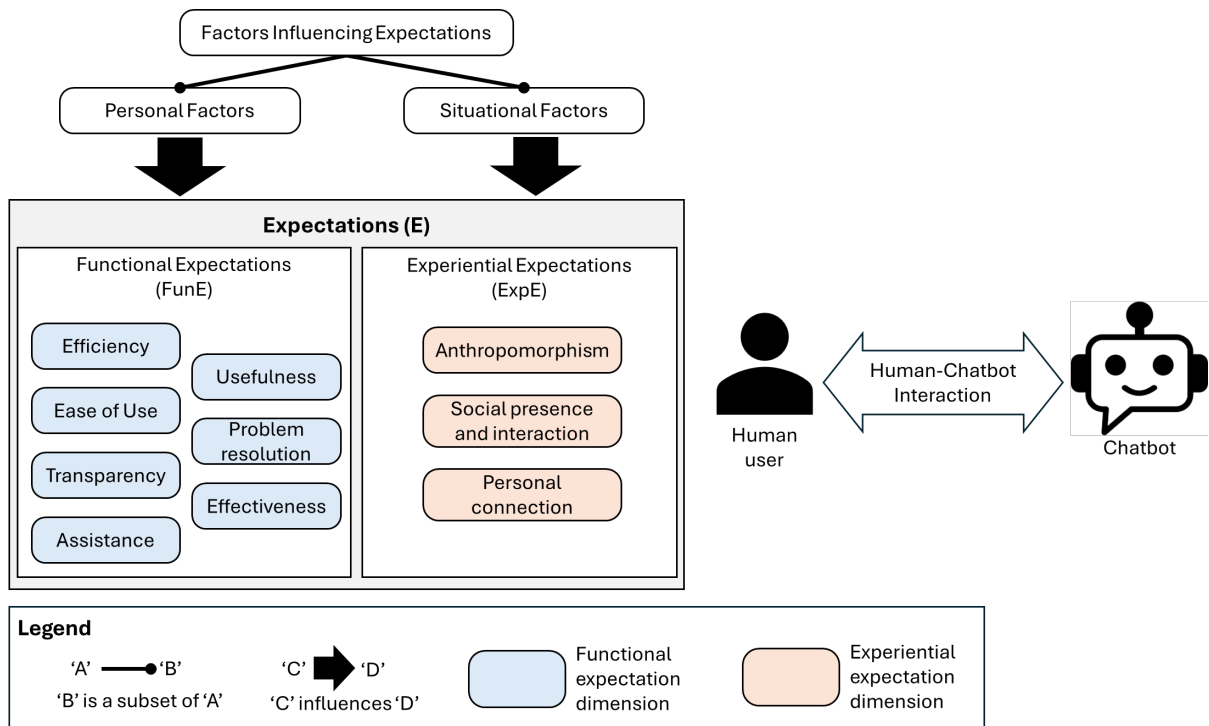
(1) Customer expectations of chatbot interactions

Our examination revealed that within the existing literature there is a predominant concentration on customer perceptions rather than expectations. In contrast, our emphasis on customer expectations denotes the preconceived notions and anticipations that customers bring to the interaction, that actually form the foundation for their initial engagement (Oliver, 2015). This divergence between the prevalent literature's focus on general or post-interaction perceptions and our targeted exploration of pre-interaction expectations is important in highlighting the need for a comprehensive understanding of the customer-chatbot dynamic from the outset, rather than solely through retrospective evaluations.

While the existing literature predominantly delves into customer perceptions, it is important to acknowledge the utility of such insights. Perceptions serve as a valuable foundation in providing a possible categorisation that can inform our thematic analysis relating to customer expectations. By understanding customer perceptions, researchers can extract valuable information to explore the factors that make up pre-interaction expectations.

In view of this, our research leveraged the insights derived from the categorisations prevalent in existing literature to discern the expectations that customers may hold in the context of AI-powered chatbot interactions. Our analysis led to the identification of two overarching dimensions: functional dimensions and experiential dimensions, as depicted in Figure 4.

Figure 4. Customer expectations of chatbot interactions



(2) Factors influencing expectations

While our primary focus was to identify customer expectations of chatbot interactions, it was clear from the literature set being evaluated that these expectations do not exist in isolation. Rather, customer interactions with chatbots are context specific and are subject to the influence of various factors (Oliver, 2015). Thus, our exploration into customer expectations naturally extended to an investigation of the different elements that shape these expectations. We identified two primary factors that predominantly contribute to shaping customer expectations during chatbot interactions: personal factors, which are specific to the individual customer, and situational factors, which relate to the surrounding environment. These are also depicted in Figure 4.

Discussion and Conclusion

Our systematic literature review evaluating the expectations of customers who interact with AI-powered chatbots, uncovered a multifaceted array of possible customer expectations as well as factors that may influence such expectations. The elements brought to light within the systematic review demonstrate the complex nature of the relationship between customers and AI-powered chatbots and the need to appreciate the contextual and individual dimensions that shape customer expectations.

A prevailing trend observed within the evaluated literature is the reliance on the Expectancy Confirmation Model (ECM). ECM (Oliver, 2015) involves a retrospective analysis of customer experiences in light of their pre-established expectations. Essentially, customers engage in comparative assessments subsequent to their interactions with AI-powered chatbots. While this approach yields valuable insights, it fundamentally operates within a post-interaction framework, ignoring an evaluation of customers' expectations preceding the initiation of the interaction. It can be compared to reviewing a movie after watching it – it is certainly useful, but it does not capture the expectations people had before the start of the movie.

As a result, the current literature does not provide enough insight on the unaffected and unaltered expectations customers hold before interacting with a chatbot. This gap introduces a consequential limitation. More specifically, the absence of an exploration into customers' pre-interaction expectations hinders a more complete understanding of the different desirability levels relating to various chatbot features. For example, establishing a metric for what is considered ideal, desired, needed, or merely adequate becomes challenging in the absence of a pre-interaction expectations framework. Focusing on a deliberate exploration of pre-interaction expectations is important for two distinct reasons. Firstly, it aids the understanding of the unique dynamics surrounding customer interactions with chatbots, which are distinct from their physical robot counterparts. Secondly, it also paves the way for a more comprehensive understanding of the entire customer experience. Such a research focus bridges the gap between the retrospective analyses found within the literature and prospective investigations, in the process offering a more nuanced exploration into the evolving relationship between customers and AI-powered chatbots.

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7. Can you trust your Generative AI friend?

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Type of manuscript: Extended abstract

Keywords: automated social presence; trust

Extended abstract

The growing recognition of human-Artificial Intelligence (AI) interactions has led to a significant marketing change, as AI refers to machines performing human-like tasks such as learning, planning, and problem-solving (Joyce et al., 2021; Yau et al., 2021). This has led to users converting their need for sociality into active behaviors (Lin et al., 2022). Human-AI social interaction dynamics focus on understanding how humans interact with robots in a social context, focusing on the results of these actions, arrangements, and performances (Hong, 2022). The primary concern is to observe the interactions between people and AI, focusing on the dynamics of social interaction, especially concerning growth and trust (Legaspi et al., 2024).

The study aims to improve the effectiveness of a framework for interaction between Generation Z consumers and AI. This model is based on the Automated Social Presence Theory developed by Flavián and others in 2024 and the Trust Disposition Model (Shareef et al., 2021) which examines the importance of trust in human-AI relationships by reflecting on the details provided by AI systems in real-time. In the age of Technologies 4.0, recognizing and analyzing interactions between humans and AI is crucial for businesses and customers, as they offer benefits (Ariffin et al., 2018).

Thus, the main goal of the proposed model is to enhance trust-building strategies, given that trust plays a role in shaping how we perceive AI, including its interactions and impact, on human AI relationships. User-Friendly AI friendship research provides insights into the interactions between people and machines. Ethical and legal considerations are necessary for understanding the psychological changes and attitudinal shifts that come from forming connections with AI entities (Belanche et al., 2021). Privacy and autonomy are key issues in analyzing a healthy reliance on technology. Future research should investigate how close consumers can feel to AI and the psychological implications of those close connections. In conclusion, a human sense of trust is crucial for successful interaction with robots, as compatibility with human psychology may be paramount for convincing people that an artificial entity is worth inviting into everyday life.

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8. Impact of Generative Artificial Intelligence in the Adoption of Text-based Virtual Assistants

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Type of manuscript: Extended abstract

Keywords: generative artificial intelligence; text-based virtual assistants; customer journey

Extended abstract

For some time now, chatbots have been recognized as a significant point of contact in the customer journey, catering to consumer demands. Specifically, in the retail sector, chatbots are instrumental in providing the seamless omnichannel experience that consumers anticipate, as noted by Hamilton et al. (2021). The potential of chatbots has garnered considerable academic attention, as evidenced by a comprehensive review of 83 studies by Rapp et al. (2021), which emphasized the critical roles of user satisfaction and trust in chatbots as essential for acceptance and intention to use.

However, despite the promising capabilities of chatbots to revolutionize customer service, their adoption within the retail sector has not attained the expected levels (Leung & Yan Chan, 2020; Rese et al., 2020). This shortfall is primarily due to limitations in engaging users and effectively handling complex queries. The integration of Generative Artificial Intelligence (GenAI) offers a crucial opportunity to surmount these challenges. By harnessing advanced machine learning techniques and neural networks, GenAI significantly enhances the depth, relevance, and personalization of chatbot interactions, as detailed by Ooi et al. (2023).

GenAI enables text assistants to produce responses and content that are more natural and tailored, transforming them into authentic conversational partners. Moreover, it empowers chatbots to learn from past interactions and better align with individual user preferences, thereby enhancing user satisfaction and improving overall interaction quality. Following the launch of ChatGPT-3 in December 2022, OpenAI achieved a milestone of 100 million users within just two months (Milmo, 2023), and the popularity of this and similar tools has grown exponentially since. Specifically, ChatGPT has garnered approximately 180.5 million users, and its website attracted 1.6 billion visits in January 2024 (Duarte, 2024). For instance, a Salesforce report from September 2023 reveals that 45% of the US population now uses generative AI technologies (Salesforce, 2023). This trend has led to a significant shift in customer expectations regarding the capabilities of these technologies within a short period (Belanche et al., 2024; Dwivedi et al., 2024).

To explore the changes in the perception of chatbots and their potential role in the customer journey following the surge in GenAI, we utilize two distinct datasets from surveys carried out in December 2022 and March 2024 on chatbot adoption in the retail sector. These surveys, structured within the framework of the Service Robot Acceptance Model (SRAM) (Wirtz et al., 2018), enable us to analyze the evolution of adoption factors before and after GenAI's integration into these technologies. This approach

provides us with a comprehensive and detailed understanding of the shifts in consumer perceptions and expectations regarding chatbots within the retail landscape.

The Service Robot Acceptance Model (SRAM) (Wirtz et al., 2018) integrates various theoretical frameworks to explore what drives consumers to adopt chatbots. The first one is the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use are crucial for chatbot acceptance. The Unified Theory of Acceptance and Use of Technology (UTAUT) enhances TAM by incorporating expectations about performance and effort, along with the influence of social factors and facilitative conditions on user adoption (Silva et al., 2023). The parasocial interaction model introduces the dimension of perceived humanness, asserting that consumers may attribute social characteristics to chatbots (Flavián et al., 2024), affecting their willingness to adopt this technology. This is influenced by the chatbot's ability to communicate effectively and manage errors (Sheehan et al., 2020). The Uses & Gratification Theory (U&G) complements these models by examining the gratifications that consumers seek from chatbots, which can range from pragmatic to pleasurable interactions, thereby affecting acceptance (Rese et al., 2020). Within SRAM, subjective social norms reflect the perceived social pressure to use chatbots, and trust encompasses the expectation of the chatbot's reliability and the safeguarding of privacy. These factors are pivotal, as they relate to the consumer's confidence in and comfort with using chatbots, especially when it involves sensitive transactions (Kasilingam, 2020; Silva et al., 2023). In summary, SRAM integrates these elements to provide a robust framework for understanding the multifaceted process by which consumers come to accept and use chatbots in a retail setting, highlighting the importance of perceived ease of use, perceived usefulness, subjective social norms, human-likeness, trust, and privacy considerations.

For both studies, we recruited U.S. online shoppers who purchase online at least monthly, utilizing Prolific.com. We constructed two data sets: the first one from a survey collected in December 2022 (448 valid respondents), when just ChatGPT had been introduced and the same survey in March 2024 (460 valid respondents), when applications with GenIA were already widely popular. These two datasets provide an unusual opportunity to examine the inter-temporal stability of adoption factors, as well as the similarities and differences in how they apply to new and existing text-based virtual assistants.

In both cases, we present three scenarios using chatbot conversation screenshots to represent various customer service tasks: checking store availability, checking order status, and reviewing order return policies. A pretest with 20 individuals verified the relevance and credibility of these scenarios, with a majority correctly identifying the intended stages and rating the conversations as significant and believable. Participants were randomly allocated to one of the three scenarios, with each answering questions informed by SRAM constructs, measured on a 7-point Likert scale. Comprehension and stage perception checks were also administered. In addition, we collected data on control variables like age, gender, occupation, and prior chatbot experience.

Analyzing these datasets will deepen our understanding of the Service Robot Acceptance Model (SRAM) in the e-commerce realm, illustrating the shift in chatbot acceptance before and after the rise of GenIA. This insight is essential for retailers optimizing customer service strategies, as it sheds light on changing consumer attitudes toward chatbots. The findings will provide practical advice for enhancing chatbot design and functionality, thus better aligning with consumer needs. Academically, the research broadens SRAM's scope, encouraging further study on the effects of technological

progress on consumer-chatbot interactions, essential for advancing the development of effective and user-friendly chatbot technologies.

Acknowledgments

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9. Evaluating highly immersive technologies usage from wellbeing to illbeing: evidence from Gen Z

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Keywords: highly immersive technologies; generation Z; consumer wellbeing; consumer illbeing

Extended abstract

Recently, the debate about the usage of immersive technologies has largely acquired contributions from academia and industry, with emphasis on research investigating the positive impact of immersive technologies on consumers (Bonetti et al., 2019; Papagiannidis et al., 2017; Park and Yoo, 2020; Prentice, et al., 2023) and the subsequent wellbeing. However, the concept of illbeing as unhappiness and poor mental health is still scarcely investigated in this context. Indeed, studies on consumers' interactions largely identified the benefits of the emerging experience associated with positive emotions, mental health, and other long-term life satisfaction (Hu et al., 2023; Mwangi et al., 2024; Prentice et al., 2023), being able to drive sufficient feeling of security, comfort, and entertainment to enhance individual's quality of life. While others anticipated the potential negative effects of this interaction mainly related to technostress and technology exhaustion (Sun et al., 2022; Lee and Pan, 2023), lack of focused attention (Flavian et al., 2024), frustration (Flavian et al., 2024), or information overload (Barta et al., 2023; Lee and Pan, 2023; Priporas et al., 2024). Thus, the usage immersive technologies might lead to unintended consequences as tiredness, fatigue, etc. Studies in psychology demonstrated that the indicators of wellbeing are mainly related to engagement, while (emotional) exhaustion is the most employed measure of illbeing, which can be strongly related to the time pressure (Nunes et al., 2024). However, literature has scarcely uncovered the underlying mechanism through which the shift from wellbeing to illbeing occurs.

As a result, our research aims at understanding the extent to which the usage of immersive technologies like immersive headsets moves from having positive impact on wellbeing to driving illbeing. In other words, our research aims at deeply understanding the technology stressor and cognitive processes causing the illbeing, while define the concept of illness driving from immersive technologies usage. Accordingly, two main research questions emerge:

RQ1: What are the dimensions of illbeing when using immersive technologies?

RQ2: What are the drivers of shifting from wellbeing to illbeing?

To this end, for this research we used immersive headsets delivering interactive experiences in 3D spaces, available for several purposes from gaming to training to (virtual) tourism/travelling, and a qualitative approach based on in depth interviews.

The research is based on a qualitative approach based on in depth interviews in two main studies of 20 participants each, where participants are invited to try a specific

immersive technology for a certain time and subsequently to participate to an in-depth interview. This sample for each study is in line with the guidelines of past studies on qualitative research (De Ruyter and Scholl, 1998; Onwuegbuzie and Leech, 2007).

In Study 1, participants are already familiar with immersive technologies, since they are actual users of highly immersive 3D technologies or are passionate about them; while in Study 2, participants have never tried before similar technologies. This method is effective for an evolving topic as the one investigated in this research like the move from wellbeing to illbeing.

Specifically, the technology used is Meta Quest-2 as immersive headsets (Figure 1). Data have been collected in 2024 in Italy from Gen Z only. Italy was chosen due to the overall value of the AR/VR market in the past years reaching the value of 61 million euros in 2020 (Statista, 2022), and expected revenue of 962.3 million US dollars by 2024, and 40.4 million users expected by 2028 (Statista 2024); while Gen Z members are tech-savvy, innovative, and creative (Priporas et al., 2024).

Figure 1. Example user of Meta Quest-2 for our experiments



Accordingly, the research involved a non-probabilistic convenience sample, where members of the target population met the criteria of easy accessibility, geographical proximity, availability at a given time/date, willingness to participate voluntarily (Etikan et al., 2016), and familiarity with immersive technology (for Study 1) and no familiarity with immersive technology (for Study 2).

Interviews have been conducted in the mother tongue of participants (Italian) and then translated in English.

Preliminary results show the extent to which immersive technologies can move from being supporting to be “damaging”. In doing so, it defines the concept of consumers’ illbeing (and related components), and the drivers of illbeing. In other words, our research identifies the “threshold”, as the point of diminishing the wellbeing, where the further usage will result in consumers’ illbeing, and we suggest possible preventive measures or interventions that could mitigate these negative outcomes. Thus, we provide recommendations for technology developers, policymakers, and retailers to implement to enhance wellbeing while minimizing illbeing.

To the best of our knowledge, our paper is the first in elucidating the concept of illbeing, scarcely investigated in consumer behaviour research. This is a novel finding to marketing and IS literature. Secondly, our findings provide guidelines for a more feasible usage of immersive technologies, especially by Gen Z, in order to reduce the potential negative consequences (e.g., illbeing).

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10. The Sphere Happens Here: Immersive Entertainment in Las Vegas

Allan, David

Type of manuscript: Extended abstract

Keywords: art; immersive; entertainment; music; science; technology; tourism

Extended abstract

Introduction

While immersive entertainment and technologies have received a good deal of popular press but in the case of entertainment especially, not much academic press. This extended abstract is designed to facilitate an academic thought paper on immersive entertainment and its technologies using the Sphere in Las Vegas, Nevada (USA) as its foundation.

Background

Immersive Entertainment is clearly on the rise (McGowan, 2022). The global immersive entertainment market size is expected to reach USD 426.77 billion by 2030, growing at a compound annual growth rate (CAGR) of 23.6% from 2023 to 2030 (Grand View Research, Inc., 2023). The idea is simple: “to create simulated environments where the user experience is entirely engaging. The entertainment industry has been the biggest investor in immersive technology” (Sid, 2022). Art, fashion, music, and tourism have been the trailblazers. Art galleries (Weiner, 2022) are using immersive technology to enhance the customer experience and art tourism is as a result growing (USA Today, 2024). Music in an immersive environment is galactic system of art and science (Allan, 2024). Fashion immersion was on the runway at Fashion Week in the UK (Wade, 2023) and New York (National Geographic, 2024). Even cruises are taking the dive (Zelinski, 2023).

It opened on September 29, 2023 at the Venetian Resort in Las Vegas. It is 366 feet high and 516 feet wide. It is the largest spherical building in the world at 875,000 square feet. It seats over 18,000 people and all seats have high speed internet access. It was built by Madison Square Garden Entertainment over five years at a cost of \$2.3 billion. It was the Sphere. “With the power 360 video, the immersion of a dome and the resolution of the Sphere, the next generation of life-changing and transformational experiences is upon us” (Amirsadeghi, 2020). U2 was the first performer in a residency titled U2: UV Achtung Baby Live at Sphere. The New York Times on opening night said: “a band unafraid of pomp and spectacle was sometimes out-pomped and out-spectacled” (Caramanica, 2023). The UK may be next (Robinson, 2023).

It opened in what some consider the entertainment capital of the world. The city where “What happens in Vegas, stays in Vegas” unofficially known as “Sin City” was founded in 1905. Las Vegas (“the meadows” in Spanish) is city of 2,899,000 people. “Las Vegas’ transformation from local watering hole to world renowned fame can be attributed to a series of turning points in its history, with influences ranging from geology, government, organized crime, entertainers, the economy, business visionaries and large corporations” (Richard, 2018). It has been called a city where “the simulacrum of glamour available to everyone ensures that no one gets the real thing” (Caramanica, 2023).

It features “The Sphere Experience” what is being called “a new genre of live entertainment that will transform the shared experience and put Sphere’s 22nd century immersive technologies on full display” (Appendix 1). “The approximately two-hour program begins in the Atrium, which tells a universal story of how culture, technology, science, art, and the natural world have been intertwined throughout human history. Through one-of-a-kind immersive experiences created specifically for Sphere, guests will gain a better understanding of how technology amplifies our human potential. The Sphere Experience then continues in the main venue bowl for a multisensory cinematic experience at an unparalleled scale – Darren Aronofsky’s Postcard from Earth” (The Sphere, 2023).

Challenges and Opportunities of Immersive Entertainment

Immersive entertainment has the challenges and opportunities to enhance customer experience and well-being especially at The Sphere. The journey begins with a working definition and then potential research areas.

Definitions

Immersive entertainment is “any entertainment application designed for immersive systems, for example, games, narrative experiences, and performance work” (Legas, 2021).

Immersive technology is “technology that blurs the line between the physical, virtual, and simulated worlds, thereby creating a sense of immersion” (Lee, Chung et al., 2013).

Mixed Reality is “the space where the physical and virtual worlds co-exist” (Milgram and Kishino, 1994).

Future Research

Immersive entertainment (Legas, 2021).

1. Understanding presence and user experience
2. Creating believable characters and engaging storytelling
3. Design of novel interaction techniques
4. Improving rendering, tracking, and space understanding
5. Exploring uses for physiological sensing and biofeedback
6. Creating better social experiences
7. Safeguarding users and promoting responsible design
8. Improving and democratizing content generation

Immersive technology (Suh & Prophet, 2018).

1. Focusing on context-specific technological stimuli.
2. Elaborating on the concept of immersion.
3. Understanding the mechanisms that explain how user experience and performance can be enhanced in an immersive environment.
4. Diversifying methodological approaches to capture the immersive user experience.
5. Understanding the negative consequences of immersive technology use.
6. Diversifying samples and contexts.

Conclusion

Many believe that “the future is immersive” with “the lines between the different types of immersive location-based entertainment blurring” (Amirsadeghi, 2020). While LBE’s like the Sphere show great rewards it also has risks, not only for the customer but for the art itself. When asked about the Sphere, U2’s creative director Willie Williams

said “if the audience gets bored they can always look at the band.”¹ More academic research is definitely needed.

Appendix 1.



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11. Harnessing Digital Customer Platforms for Enhanced Product Innovation: The Mediating Role of Competence Ambidexterity

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Keywords: customer platform; ambidexterity; innovation performance

Extended abstract

In today's business landscape, heightened customer expectations coupled with an increasing demand for personalization presents a formidable challenge for manufacturers. The American Customer Satisfaction Index (ACSI) report highlights this tension, indicating a stagnation in customer satisfaction over the past decade, despite a surge in global product availability (ACSI, 2022). This dichotomy is further exacerbated by the rise in consumer sophistication, where they not only demand more customized products and services but also expect firms to respond agilely to their evolving needs (Schmitz & Ganesan, 2014).

Understanding these shifts, many firms are turning to Digital Customer Platforms (DCPs) as a strategic tool to actively engage with and tap into the latent creativity of their customers. Such platforms are not merely interfaces; they have evolved into essential conduits for identifying market opportunities, streamlining product offerings, and achieving broader innovation objectives (McIntyre & Srinivasan, 2017). While the concept of digital platform is appealing, the empirical research in this area remains limited. One of the major challenges conducting empirical research on digital platforms is the absence of a clear conceptual definition, as highlighted by Bonina et al. (2021). This study aims to provide a comprehensive understanding of DCPs, thereby offering a two-fold benefit of DCPs: a creativity function that allows for the free flow and enhancement of innovative ideas, and a connectivity function that ensures clear communication and direct customer support across various digital channels. An example to this is the strategy adopted by LEGO, wherein its DCP not only enables user-designed toys but also ensures these designs are in sync with the company's broader business strategies, moving beyond the traditional confines of in-house product development. Through the adept use of DCPs, manufacturers can harness the collective creativity and insights of their customer base, enhancing their innovation outcomes and staying agile in the face of evolving market demands.

In light of the above, our research question is: How can manufacturers leverage customer platforms for enhanced product innovation? Drawing insights from dynamic capability, organizational ambidexterity and contingency theory, we argue that companies must strike a balance between competence exploitation and exploration (i.e., competence ambidexterity) to translate the benefits of digital customer platforms into firm's innovative performance. In this study, digital customer platform can be established by the company or rely on third party platform. Digital customer platform is

defined as a digital platform that facilitates interactions between the firm and its consumers for a better value co-creation. The function of a digital customer platform for connectivity can offer firm valuable insights to enhance its existing decision-making process. However, a firm that becomes excessively focused on exploitation may face challenges because the existing knowledge and capacity may limit its ability to fully realize novel idea. Likewise, a firm that is overly oriented towards digital customer platform for creativity to explore new ideas may suffers the costs of experimentation without gaining many of its benefits. This is because many of these ideas may be unfeasible and exhibit little refinement of the existing competencies. Therefore, firms need to better leverage digital customer platform to balance the view of exploitation and exploration competences to achieve innovative performance.

Our study offers three distinct contributions to current literature. First, while the emerging body of research on DCPs is expanding, there remains a significant gap in its conceptual clarity. One of the primary challenges is the ambiguous definition surrounding DCPs (Bonina et al., 2021). To address this, we introduce and empirically validate two foundational functions of these platforms: *Creativity* – where platforms enable customers to freely share novel ideas, build upon each other's concepts, and access tools that augment their creative expression; and *Connectivity* – characterized by transparent communication, fostering interactive dialogues between and among customers, and seamless integration with the firm's core business processes and decision-making routines.

Second, our research bridges the previously fragmented connection between DCPs and innovative performance by spotlighting the pivotal role of competence ambidexterity. While the existing literature offers insights into the impacts of DCPs on business outcomes (Wei, Wang, and Chang, 2021; Tse et al., 2023), the intricate interplay between these platforms and their potential to foster both exploration (via creative customer inputs) and exploitation (through improved connectivity and real-time feedback) remains underexplored. Our study delves deep into this synergy, elucidating the mechanisms through which DCPs nurture competence ambidexterity, thus acting as a potent catalyst for new product innovation. In doing so, we provide firms with a nuanced framework, guiding them in the optimal utilization of DCPs to supercharge their innovative capacities in an increasingly competitive landscape.

Third, our study employs a multifaceted approach, examining both internal and external factors that determine the effectiveness of DCPs. On the internal front, we find that competence ambidexterity benefits from the presence of technical knowledge explicitness and interfunctional coordination; these factors foster efficient knowledge transfer and integration, enabling firms to make better use of customer platforms. Externally, while market uncertainty, characterized by swift changes in technology and customer preferences, dampens the impact of customer platforms on competence ambidexterity, the presence of competitor imitation bolsters it. This is because imitation acts as a market signal, decreasing information asymmetries and underscoring product trends. These diverse contingencies, spanning from internal knowledge strategies to external market shifts, influence the extent to which firms can capitalize on DCPs to boost competence ambidexterity. Through this analysis, our research provides a strategic roadmap for manufacturers navigating the intricate domain of DCPs, ultimately aiming to amplify product innovation in an ever-changing and evolving marketplace.

Through a multi-informant survey of manufacturing firms in China, we examine the mediating effect of competence ambidexterity and investigate the boundary conditions that influence the efficacy of digital customer platforms. Our findings reveal that these

platforms exert a more pronounced influence on a firm's competence ambidexterity when the firm excels in tacit knowledge transfer and interfunctional coordination. In contrast, the influence diminishes in environments characterized by high market uncertainty and when competitor imitation is less pronounced.

Acknowledgments

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12. The trust of Trusting in Generative AI: Is it a boost for productivity?

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Keywords: generative artificial intelligence; work engagement; trust; employee performance

Extended abstract

Introduction

Novel technologies raise questions about their potential impacts, ranging from productivity growth to user satisfaction and performance enhancement (Acemoglu, Johnson, & Viswanath, 2023). This scenario is exemplified by the emergence of tools in the early 2020s, particularly with the release of Chat GPT 3.0 in November 2022 (Chui et al., 2023). Subsequent analyses have highlighted its significant influence on productivity and the transformative effect it has had across various industries. Wijayati et al., (2022) finds that using artificial intelligence (AI) influences not only on employee performance, but also in their engagement with work tasks. Far from being a transient trend, this technology is poised to have a lasting and evolving impact.

Furthermore, as an additional point to consider in this introductory, trust in technology is a critical factor for its effective usage, which, in turn, influences work engagement. However, there is a hidden point in all this that relay on the nature of the algorithms embedded in AI tools. Thus, these tools are extremely friendly in terms of easy to use, but on the other hand, these algorithms are composed by extensive code that makes it a “black box” for the user.

After this description of current state, we posit that the primary aim of this paper is to delineate the sequence of constructs connecting the readiness to adopt and use generative AI tools at work, the trust in these tools, and their subsequent impact on behavioral outcomes, particularly in terms of work engagement and performance.

The secondary objective is to analyze the core of this construct network, with a specific focus on the mediating role of "Trust" between tool acceptance and work engagement.

Methodology and Results

A mix-methodology is used. The first step is quantitative, employing a structural equation modelling approach, the research analyses data from a sample of 251 professionals that use generative AI tools, collected in Spain in December 2023. The second step is qualitative, confirming findings from first step through a survey to 62 top academics in management sciences, collected in March 2024.

Quantitative step: SEM

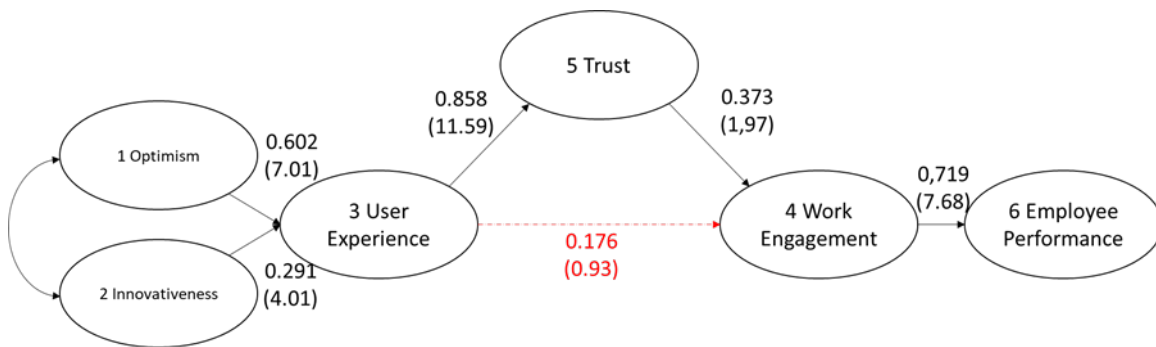
Preliminary analysis conducted in the quantitative steps is in progress. The psychometric properties of each construct were thoroughly examined, including assessments of reliability (via Cronbach's alpha and composite reliability (CR)) and convergent validity (measured through average variance extracted (AVE)).

Additionally, a discriminant analysis was conducted to evaluate the distinctiveness of the dimensions within the scale by comparing the square of its AVE with its correlations with other dimensions. All these analyses are satisfactory.

The model's overall fit was then evaluated using several metrics, including the Bentler-Satorra chi-square, its coefficient and degrees of freedom, and other fit indices such as the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). Upon confirming the model's fitness, the standardized coefficients were analysed and interpreted to understand the relationships between the constructs.

Figure shows the main results. All paths of the model are significant, excepting one which leads from “User experience” to “Work engagement” (in red in the Figure).

Figure: Research model, with standardized solutions and t-values associated in brackets



Trust is in the middle of the model and became key, due to the full mediation detected. Table shows the mediation effect.

Table. Mediation effect of “Trust” between “User experience” and “Work engagement”

	Direct effect		Indirect effect		Total effect	
	standardized coefficient	t-value	standardized coefficient	t-value	standardized coefficient	t-value
User Experience → Trust	0.86 (a) *	11.59	-	-	0.86 *	11.59
Trust → Work Engagement	0.37 (b) *	1.97	-	-	0.37 *	1.97
User Experience → Work Engagement	0.18 (c)	0.93	0.32 (a*b) *	2.08	0.50 *	5.58

Qualitative step: Survey

Step still in progress. A simple survey to 62 academics was launched to assess the results of previous step and ask for potential explanations.

Discussion and contributions

The study reveals that the inclination to adopt and utilize generative AI technologies is pivotal for a good user experience. In its turn, user experience does not directly correlate with enhanced workplace performance. Crucially, trust in these technologies emerges as

a vital mediator, fostering improved work engagement and subsequently enhancing performance.

Theoretical contributions

This research integrates some foundational theories to construct its theoretical framework. Firstly, Technology Readiness (TR) theory, which posits that adoption and utilization of advanced technologies are influenced by underlying motivators and inhibitors. Secondly, the Technology Acceptance Model (TAM) framework is employed to further explore how user experience impacts on trust of these tools and on work engagement. Last, the Source-Organism-Response (SOR) theory explains the dynamics involved in the way that trust yields in productivity.

Managerial contributions

The findings underscore the paramount significance of fostering trust in AI technologies among employees to ensure not only enhanced engagement in their roles but also, consequentially, improved performance.

Finally, the study opens avenues for future research to explore these relationships in different cultural and organizational contexts. Additionally, longitudinal studies could provide insights into how these relationships evolve over time as these tools become more ingrained in workplace practices.

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13. Embracing change, overcoming resistance - Generative Artificial Intelligence adoption in SMEs from a Complex System perspective

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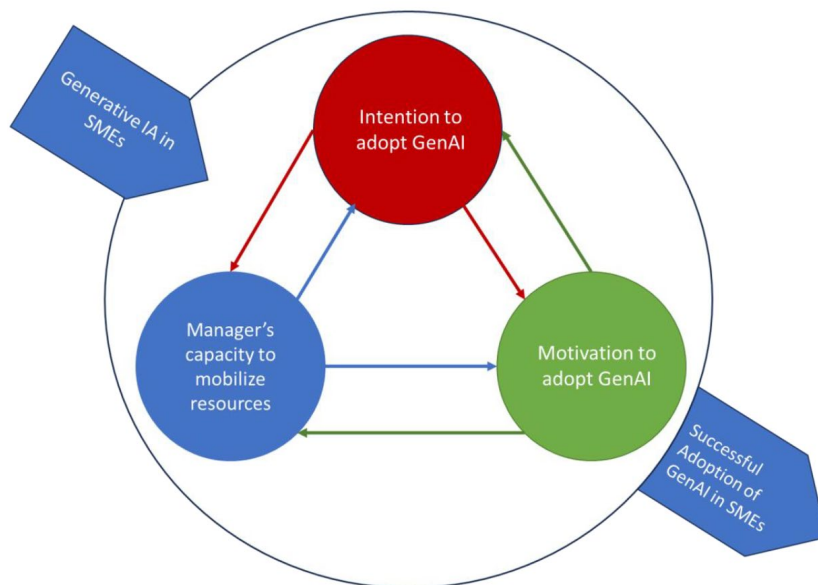
Type of manuscript: Extended abstract

Keywords: generative artificial intelligence; resistance to change; technology acceptance; Temporal Motivational Theory; Theory of Planned Behavior; Dynamic Capabilities Theory

Research Objectives

The rapid evolution of Generative Artificial Intelligence (GenAI) offers transformative potential for Small and Medium Enterprises (SMEs), promising enhanced innovation and competitiveness. Yet, the dual phenomenon of resistance and acceptance by managers presents critical challenges to realizing the benefits of GenAI in SMEs. This study aims to (1) understand the underlying factors influencing resistance and acceptance of GenAI in SMEs, and (2) propose a theoretical model integrating the intention to adopt GenAI (Theory of Planned Behavior), the manager’s capacity to mobilize resources (Resource-Based view), and the motivation to implement GenAI (Temporal Motivational Theory), to explain these phenomena through the lens of Complexity Theory.

Figure 1: Visual abstract



Research question

To what extent can an integrative model of intention to adopt, capacity to mobilize resources, and temporal motivation provide insights into the mechanisms of resistance and acceptance of GenAI technologies within SMEs?

Theoretical framework

The Theory of Planned Behavior

Analyzing the data from the perspective of the Theory of Planned Behavior (TPB) (Ajzen, I., 1991) involves examining how attitudes, subjective norms, and perceived behavioral control influence managers' behaviors towards adopting GenAI technologies within SMEs. The TPB can be applied to the analysis of preliminary data as follows:

- **Attitudes Toward Behavior:** In the context of GenAI adoption, a positive attitude implies that managers see GenAI as an opportunity to enhance productivity, creativity, and job satisfaction, therefore they may be more inclined to support its adoption.
- **Subjective Norms:** Subjective norms include influences from colleagues, industry trends, or organizational culture. If managers perceive dedicated support for GenAI adoption from stakeholders and peers, or if there is a perceived industry trend towards leveraging AI, they may feel more compelled to embrace GenAI technologies.
- **Perceived Behavioral Control: This refers to the perceived ease or difficulty of performing the behavior. Managers who feel they have the resources, skills, and organizational support necessary to adopt GenAI will feel more capable of engaging with these technologies.**

Capacity to mobilize resources

Using the lens of the Resource-Based View (Eisenhardt, K. M., & Martin, J. A. 2000) involves examining managers' ability to integrate, build, and reconfigure internal and external competencies and resources that enables their company to adopt GenAI technologies successfully. For example: investing in training and development, recruiting specialized talent, investing in technology infrastructure upgrades, etc.

The Temporal Motivational Theory

The Temporal Motivational Theory (TMT) (Steel, P., & König, C. J., 2006) suggests that a person's motivation to perform an action can be understood as a function of the perceived value of that action and its urgency. Procrastination, or resistance to action, occurs when the perceived value is low and/or no urgency. Managers can delay implementing GenAI solutions because they feel that it is not urgent to use this technology in their firms.

Research Methodology

The research employs a qualitative, comparative multiple case study approach, focusing on semi-structured interviews with SME managers to understand their views and motivations regarding GenAI adoption. The study identifies key adoption challenges, such as technical obstacles, expertise shortages, and resistance to change and aims to explore behavioral intentions towards GenAI, integrating the Intention to adopt, the capacity to mobilize resources and the Motivation to adopt within a complex systems framework to examine the interplay of these personal traits in navigating GenAI decision-making adoption challenges.

Understanding Complex Systems

A complex system is characterized by its components interconnected and interdependent nature, which contributes to emergent behaviors not predictable from the properties of the individual parts. Such systems are marked by nonlinearity, indicating that small inputs or changes can trigger disproportionate and often unpredictable outcomes, highlighting the intricate causality within these systems. This inherent nonlinearity underscores the challenge of anticipating the adoption and resistance patterns towards GenAI technologies in SMEs. The interactions among system components—such as the intention to adopt GenAI, the capacity to mobilize resources, and procrastination/motivation of implementation—generate feedback loops and emergent phenomena, reflecting the dynamic, evolving nature of these enterprises' operational landscapes.

Preliminary results and findings

Preliminary findings indicate that resistance to Generative AI (GenAI) adoption among SMEs is due to technical difficulties, lack of expertise, and ethical worries, while managerial enthusiasm is sparked by the potential for efficiency and innovation. Highlighting the intricate process of technological acceptance influenced by both personal and organizational factors, the research aims to outline potential manager profiles in SMEs who excel in GenAI implementation. This profile will delve into their strategic decision-making, resource allocation, and innovation management tactics. In this vein, the study seeks to pinpoint the essential managerial characteristics and strategies for successful GenAI integration within SMEs.

Originality of the Paper

Distinguishing itself from existing literature, this study uniquely applies the Complex Systems Theory to understand Generative AI adoption in SMEs from a managerial perspective. While previous research, primarily rooted in engineering, has explored GenAI through complex systems, our work innovatively integrates Temporal Motivational Theory, Theory of Planned Behavior, and the Resource-Based view to delve into the managerial dynamics of GenAI implementation. By providing a comprehensive model and real-world managerial implications, this research offers a foundational reference for future studies on technology management in SMEs.

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14. Assessing how Emotional and Social Communication shapes Chatbot Perceived Competencies

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Type of manuscript: Extended abstract

Keywords: chatbots; communication; competencies

Extended abstract

The era of Artificial Intelligence (AI) has changed interactions between businesses and users, triggering fundamental inquiries into consumer behavior. Among the various applications of AI (metaverse, voice assistants, augmented reality, mixed reality, etc.), this work focuses on chatbots as conversational text assistants. A chatbot is defined as a software application that engages in a conversation with a human using natural language to respond to a consumer's question in real-time (Rese et al., 2020). **Chatbots are commonly employed by companies to interact with customers at various touchpoints throughout the customer journey, spanning different contexts such as travel, medical services, and retail (Crolic et al., 2022).**

CASA (Computers Are Social Actors) paradigm (Nass et al., 1994; Nass & Moon, 2000; Reeves & Nass, 1996) has been widely adopted in the field of Human-Computer Interaction (HCI), positing that users interact with machines as if they were social agents, attributing to them anthropomorphic traits and behaviors. Despite a clear awareness of the non-human nature of these machines, individuals tend to treat them based on the same social rules they would apply in human interactions. This tendency, especially evident in the case of chatbots, underscores the importance of understanding how user perceptions towards these technologies are formed and influenced (Chen et al., 2023; Nguyen et al., 2023).

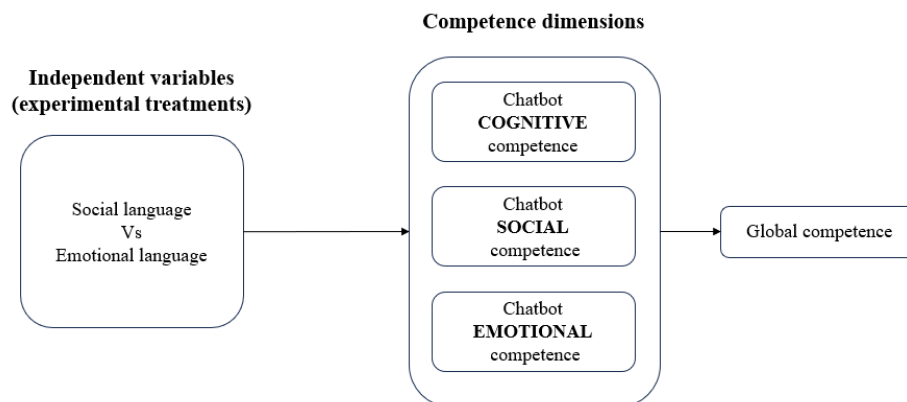
There is a call for literature to investigate how to calibrate the communication style used by the chatbot to optimize customer service experiences (Bleier et al., 2019; Thomas et al., 2018; Xu et al., 2022). Within HCI, especially in communication, task-oriented and socially oriented language has been addressed. Task-oriented style where chatbots prioritize task efficiency, diligently striving to achieve a successful outcome, conveying competence, and frequently utilizing formal conversational elements (Chattaraman et al., 2019). Although there is consensus on task-oriented language, a research gap has been identified in social language that needs to be investigated. Social-oriented style aim to achieve social goals and involve informal and relational exchanges normally with positive expressions. However, some literature also includes emotional needs (Xu et al., 2022), or emotional concerns (Chattaraman et al., 2019; Maar et al., 2022). Emotional concerns are indicative of emotional language because they involve recognizing the user's emotion or concern (Chandra et al., 2022). Therefore, there is an integration of both social and emotional components, leading to a mixed language style. This work purposes to provide an in-depth analysis of what is perceived as social language and

social-emotional (emotional) language, and how these types of languages differently affect the perceived competence of the chatbot. Differentiating between social and emotional communication provides a more holistic perspective on how chatbots can facilitate more natural and meaningful interactions.

In this context, the Stereotype Content Model (SCM) (Fiske et al., 2002, 2007) gains particular interest. This model, applied in the analysis of social interactions among humans, distinguishes two fundamental dimensions in social perception: competence and warmth. **Competence is related to intelligence, efficiency, and capacity whereas warmth is associated with friendliness, helpfulness, and trustworthiness** (Fiske et al., 2007; Grewal et al., 2020; Kim & Hur, 2023). Therefore, this study broadens the evaluation of chatbot competence, traditionally focused on utilitarian competence (Choi & Zhou, 2023; Kull et al., 2021), to encompass cognitive, social, and emotional competencies (human competencies) (Brown et al., 2016; Chandra et al., 2022).

Consequently, the objectives are: (1) to study the differences between social and emotional language, and (2) how these languages affect perceptions of the different competencies (cognitive, social, and emotional). Figure 1 shows the proposed model.

Figure 1. Proposed model



The methodology involves conducting an online experiment with a between-subjects questionnaire design to analyze the relationships showed in Figure 1, utilizing stimuli consisting of an interactive conversation between a chatbot and a customer, manipulating social versus emotional language types. However, a series of preliminary studies were necessary to validate the manipulations.

Three preliminary studies were conducted. The *first* aimed to identify the main attributes associated with each type of communication. With a sample of 88 subjects via Prolific (47% men; 53% women; age mean 35.7), it was found that the social attributes are: relational, engaging, responsive, and user-friendly, whereas the emotional attributes are: compassionate, empathetic, and supportive. Subsequently, to facilitate a between-subjects questionnaire experiment, a *second* preliminary assessed whether scenarios/stimuli are perceived differently (social vs emotional). Following the creation of experimental stimuli analysis through Linguistic Inquiry and Word Count (LIWC) confirmed that each scenario was perceived as social or emotional. For the social behavior LIWC category, the mean score for the social scenario was 9.49 (SD = 4.05), which was higher than the mean for the emotional scenario, which stood at 2.23 (SD = 2.47). Conversely, in the emotion LIWC category, the social scenario yielded a lower mean of 1.19 (SD = 2.06) compared to the emotional scenario, which had a mean of 9.84 (SD = 1.69). *Third* preliminary study, a between-subjects experiment was

conducted to validate both scenarios, with a sample of 68 participants sourced from Prolific (35 social and 33 emotional; 44% men, 55% women; age mean 38.8). This pretest demonstrated that the scenarios are indeed perceived differently. The mean social scale for social scenario was 4.99 (SD = 1.09), compared to a mean of 5.25 (SD = 1.03), for emotional scenario. Regarding the mean emotional scale for social scenario was 4.46 (SD = 1.18), compared to a mean of 4.77 (SD = 1.05) for emotional scenario, suggesting a trend where emotional communication is perceived as richer in both social and emotional attributes. Scales previously validated in the literature have been used, social scale (van Dolen et al., 2007) and emotional scale (Lou et al., 2022; Yim, 2023). We are currently collecting data for the main analysis, which will evaluate how the type of language affects the different perceived competencies.

Theoretically, this study enriches the SCM in HCI by unveiling the differences and similarities between social and emotional communication, enhancing comprehension, and providing a nuanced exploration of users' cognitive, social, and emotional competence perceptions towards chatbots. Managerially, the findings offer insights for refining chatbot communication strategies to enhance customer service by fostering more empathetic and engaging interactions, ultimately boosting customer satisfaction and operational efficiency.

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15. Digital Companions of Tomorrow: Exploring the Effects of Generative AI Avatars on Consumer Well-being

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Keywords: conversational avatar; generative artificial intelligence; consumer neuroscience

Extended abstract

Technological advancement, especially in Artificial Intelligence (AI), is rapidly expanding across various applications like virtual assistants, metaverse, and augmented reality. Now it is the turn of Generative AI (GenAI), which, through advanced machine learning techniques and neural networks, is capable of generating content, be it text or images by analyzing various patterns and information during its training phase (Ooi et al., 2023). Despite its recent introduction and growing interest in usage, it poses challenges for businesses and users to adopt it correctly (Dwivedi et al., 2023; Kshetri et al., 2024).

An example of this innovation is the launch of ChatGPT on November 2022 developed by OpenAI, although there are others many others including Large Language Models such as, Gemini from Google or Perplexity, image generators as Midjourney or video generators such as SORA from OpenAI. Specifically, ChatGPT has garnered approximately 180.5 million users (Duarte 2024). From both a business and academic perspective, Ooi et al. (2023) highlight the impact that GenAI will have across various fields such as marketing, healthcare, human resources, banking, manufacturing, and more. Precisely, the integration of various GenAI models (conversational, video creation, text-to-speech, and image generation) enables the creation of conversational avatars capable of natural interaction with users. Therefore, investigating how GenAI can augment human capabilities and empower individuals while maintaining a sense of human control emerges as a pivotal research avenue.

Within the modalities of GenAI, this research focuses on the use of conversational avatars empowered with GenAI. Miao et al. (2022) developed the theory of avatars, creating a specific taxonomy of the main characteristics of an avatar. An avatar is defined as “*digital entities with anthropomorphic appearance, controlled by a human or software, that have an ability to interact*” (Miao et al., 2022, p.1). Anthropomorphized appearance, not only is essential for social presence in avatars, influencing how humans interact with them, but also it can improve marketing outcomes such as, trust, perceived competence, and purchase intentions (Crolie et al., 2022). According to the CASA paradigm (Moon 2000; Nass et al., 1994; Reeves & Nass, 1996), people treat human-like machines similarly to other humans, aware they are interacting with a machine. This anthropomorphic presence triggers social and emotional responses, leading to cognitive, affective, and social reactions during interaction (Miao et al., 2022; Wang et al., 2007). On the other hand, avatars should be interactive, where interactivity means making users feel in control and able to communicate synchronously and reciprocally (Chattaraman et al., 2019). Finally, Miao

et al. (2022) categorize avatars into four types based on low to high behavioral and form realism: simplistic, superficial, intelligent unrealistic, and digital human avatars. This research focuses on "digital human avatars", which feature realistic and anthropomorphic appearance and intelligence, along with the ability to autonomously communicate both verbally and non-verbally.

Avatars empowered by AI can provide users with an immersive experience due to their interactivity and customization (Butt et al., 2021). Moreover, avatars are perceived as a hedonic tool which is related to the enjoyment derived from the interaction (Elsharnouby et al., 2022), and they also can be persuasive (Sakuma et al., 2023). A high anthropomorphic avatar leads to higher usage intentions, however, this effect is mediated by perceived trustworthiness, intelligence and enjoyment (Cai et al., 2022). Existing research on avatars has primarily focused on chatbots featuring an anthropomorphic presence, where interaction occurs via text. However, the more natural dynamics of voice interaction, offering a more realistic context, have not been sufficiently explored. The specific objectives are: (1) explore the neurophysiological processes of users during their interactions with digital human avatars, (2) identify specific attributes of digital human avatars that explain interaction effectiveness, and (3) examine user perceptions to elucidate the impact on customer well-being following interactions with digital human avatars.

Drawing upon the extant literature, we have identified several research gaps that align with our objectives. The neurophysiological processes occurring in users during their interactions with digital human avatars remain insufficiently explored, as previous literature have predominantly utilized questionnaires to examine aspects related to their use. Furthermore, echoing the research avenues proposed by Miao et al. (2022), it is essential to establish the specific attributes of these avatars that enhance the effectiveness of interactions. Ultimately, it is crucial to examine how the engagement with a more realistic avatar is perceived by users, considering socio-emotional and relational dimensions, comprehensive assessment of the experience, and the impact of antecedent knowledge and experiences. This will help understand how interacting with a digital human avatar affects consumer wellbeing, including perceptions, socio-emotional needs, behavior, and cognitive, emotional, and social responses.

For this study, we explore the interactions with a digital human avatar inspired by Carl Sagan, one of the most renowned science communicators. This avatar integrates several GenAI models and is capable of engaging in bidirectional conversations with users, responding to their inquiries using natural language. This avatar is an experimental prototype developed by a firm working in the integration of AI technologies for the media and educational industries. The study utilized a mixed-methods design, combining consumer neuroscience experiments Electroencephalogram (EEG), Galvanic Skin Response (GSR), and Eye-Tracking (ET) to analyze the avatar interaction and subsequent in-depth interviews. It examined various factors, including utility, socio-emotional, relational aspects, risk and overall experience perceptions. The participants were recruited through a market research firm, employing age-based quota sampling to assemble 40 participants (50% men and 50% women, with an average age of 39.3 years and a standard deviation of 13.53). Having completed the experiments, we are processing complex data and do not have final results yet but aim to present our findings at the conference.

This study enhances avatar theory (Miao et al., 2022) by examining user neurophysiological responses to digital human avatars, revealing impacts on socio-emotional and relational dynamics, thus informing HCI with GenAI, especially regarding consumer wellbeing. It offers practical insights for using these avatars in

customer service, underlining attributes that increase avatar effectiveness and highlighting the value of voice interactions for creating engaging avatars, thereby improving customer satisfaction and wellbeing.

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16. Avatar Robots: Uprising Innovation in Service Fields

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Extended abstract

This study aims to clarify the potential of avatar robots in service fields. Service robot is currently a most popular topic in service research. A huge number of studies are conducted to reveal impacts of autonomous service robots toward service encounters (De Keyser & Kunz, 2022). In contrast to the autonomous service robots, avatar robots that human operators control and interact with others remotely, are still in the emerging phase; nevertheless, its development and implementation in service fields are accelerating (Barbareschi et al., 2023; Watanabe, 2023). Avatar robots have huge potential to change service fields, by realizing remote service interactions with embodied human agents. The service research on avatar robots is still at its infancy and further study on its impact to service fields is needed. Hence, this study conceptually explores the potential of avatar robots for services in comparison to autonomous service robots through literature study.

Avatar robot (or robotic avatar) is an embodied agent for human operators to remotely interact with the physical world (Hauser et al., 2024; Watanabe & Ho, 2023). This concept has been explored and taken into forms through a variety of R&D projects since 1980s, under the names of "telepresence" and "tele-existence" (Tachi, 2013). Avatar robots can work as proxies between customers and frontline employees (Watanabe & Ho, 2023). The application examples cover a wide range of services which traditionally require human-to-human interactions, such as cafe, retail, school, and security service. Significant cases are the ones in which people with disability participate in physical service interactions (Ahumada-Newhart & Olson, 2019; Barbareschi et al., 2023). For example, Barbareschi et al. (2023) introduce an avatar robot cafe where people with severe physical impairment serve customers using avatar robots. The application of avatar robots increased especially during the COVID-19 pandemic to continue economic and social activities while direct physical contacts are to be avoided (Heinonen & Strandvik, 2020). Watanabe (2023) introduces the case study of two avatar robot applications (i.e., retail and security service), and discusses the impacts to frontline service employees from the aspect of their workstyle, skill development and well-being. Even after the pandemic ceased, the application of avatar robots in service fields is further anticipated to enhance service capabilities (Watanabe & Ho, 2023).

Table 1 summarizes comparative features of autonomous and avatar robots. In most of the service literature addressing service robots, they are depicted as fully automated robots substituting human roles, either partly or totally. On the contrary, avatar robots requiring human control keep the human role in the service frontline (Watanabe, 2023). Autonomous service robots at the current technological level can perform only fixed, and limited number of tasks, such as cleaning, delivery, and Q&A communication. In

contrast, avatar robots are available to perform complex and critical tasks such as surgery operations (Schumann et al., 2012). In addition, human operators of avatar robots can explore and perform tasks even in unknown environments (Hauser et al., 2024).

Empathic behaviors of service robots are recently a most popular topic in service research (Huang & Rust, 2021). However, their empathic behaviors are basically the imitation of humans' and not a real psychological phenomenon. Avatar robots are human-controlled; hence, the behaviors through avatar robots are based on human empathy (Kamino & Sabanovic, 2023). This could increase comfort and reliability of their services.

The collaboration with robots in service fields is expected to create synergy between human and robot and then increase service productivity (Le et al., 2022). However, the machine awareness toward the surrounding environment and situations is still limited. Hence, human customers and employees need to adjust their behaviors for robots, which hinders their autonomy. In contrast, humans operating avatar robots have generally better situational awareness compared to autonomous robots. Although technological challenges such as the communication delay through network limit the operator's perception (Goodrich et al., 2013), human operators and other employees or customers can cooperate with each other even through avatar robots based on their mutual awareness (Kamino & Sabanovic, 2023).

In summary, avatar robots have strong potential to realize more cooperative, human-like service interactions than autonomous service robots. Although avatar robots directly require human resources, remote physical interaction could overcome the limitation of spatiotemporal barriers and thus make service encounters more productive and richer. The study on avatar robots could be another research avenue of service robots. The empirical study of avatar robots from the service research perspective is still very few; hence, more case studies are anticipated in the future study.

Table 1. Comparative features of autonomous and avatar robots

	Autonomous	Avatar
Autonomy	Fully automated (less human control)	None/partially automated (requiring human control)
Flexibility	Limited, mostly for a fixed task in a stable environment	Applicable to complex tasks in a dynamic environment
Empathy	Imitated empathic behaviors	Empathic behaviors of humans
Cooperativeness	Based on limited machine awareness	Based on mutual awareness between humans

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17. Development and evaluation of Virtual Reality environments for public speaking training

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Type of manuscript: Extended abstract

Keywords: virtual reality; public speaking training; effectiveness

Extended abstract

Oral communication is a fundamental soft skill, however critical for our personal and professional development. Good speaking skills are not innate but can be acquired through training (Morreale & Pearson, 2008), therefore justifying the implementation of dedicated solutions within institutions and companies (Robles, 2012).

An increasing body of literature explores the potential of Virtual Reality (VR) as a training tool for various skills (Jensen & Konradsen, 2018). Using this immersive and interactive technology, users can evolve in a training environment specially tailored to acquire the desired competences. As such, VR provides trainees with a customizable and safe environment suited to their needs (Kaplan *et al.*, 2021). The applicability of VR to a wide range of public speaking tasks further enhances its added value. Potential applications include training for job interviews (Stanica *et al.*, 2018), presentations (Valls-Ratés *et al.*, 2022), and for specific occupations, such as teachers (Lugrin *et al.*, 2016) or entrepreneurs (Niebuhr & Tegtmeier, 2019).

Rehearsing a speech in front of an audience appears as beneficial, reducing speakers' anxiety and improving their performance (Smith & Frymier, 2006). However, opportunities to practice in front of a real audience are limited, whereas virtual environments can be designed to contain responsive virtual avatars, powered by Artificial Intelligence (AI), in front of which users can rehearse.

To our knowledge, few articles thoroughly assess the effectiveness of public speaking training using VR, although promising results exist (Bachmann *et al.*, 2023; Takac *et al.*, 2019; Valls-Ratés *et al.*, 2023). This constitutes the overarching objective of this research. However, to develop extensive and adaptative training environments (as defined in Lugrin *et al.* (2016)), the presence of an AI-powered audience, responsive to speakers' performance, is valuable and constitutes a sub-goal of this research. Acknowledging the inherent limitation in capturing the full complexity of human behavior, AI will be employed to create interactive audiences, displaying specific behaviors according to the speaker's speech. The formulation of such virtual audience models remains scarce in the literature. To fill the identified gaps, we will rely on use cases, including VR training environments for entrepreneurs and teachers. These have not been widely investigated in the literature, further reinforcing our contribution.

Objective KPIs reflecting the quality of the speaking task, whether general or task-related, have been identified in various studies (Azaïs *et al.*, 2015; Batrinca *et al.*, 2013; Chollet *et al.*, 2016; Palmas *et al.*, 2019; Strangert & Gustafson, 2008), and include both verbal (i.e., hesitation rate, pauses, fundamental frequency) and nonverbal signals (i.e., stage usage, body language, visual connection with the audience). These indicators can be used to detect anxiety as well (Monteiro *et al.*, 2024; Wörtwein *et al.*, 2015). Multimodal cues appear as best predictors of performance but can eventually be reduced to acoustic information for the sake of simplicity (Chollet *et al.*, 2016). The considered

studies managed to approach correct evaluations, yet not reaching significant results. A deep understanding of these indicators is then primordial to develop a suited model, effectively reflecting the speakers' performance. More specifically to our use case, linguistic features reflecting persuasiveness and charisma are considered (Barkar *et al.*, 2023; Valls-Ratés *et al.*, 2023).

Once a performance assessment model has been established, it is worth considering making the audience react accordingly. The presence of an interactive virtual audience stimulates speaker's improvements in terms of stage usage, pause filters and speech intonation (Chollet *et al.*, 2016). In addition, customized audience scenarios turn out to be relevant for effective learning, keeping the audience challenging (Tudor *et al.*, 2013). Within the audience, avatars could either react through their verbal or nonverbal behavior. These signals constitute indirect feedback, subject to interpretation. This subjective aspect has given rise to an increasing number of studies investigating the perception of virtual audiences and avatars (Chollet & Scherer, 2017; Etienne *et al.*, 2023). Authors showed that specific parameters can effectively be detected by speakers, such as audience's valence and arousal (Glémarec *et al.*, 2022; Kang *et al.*, 2013), and identified specific behaviors mainly interpreted as positive, negative, or neutral (Etienne *et al.*, 2023). Behavioral styles, depending on the mood and the personality of the avatars, have also been successfully modelled (Kang *et al.*, 2016). These studies have implemented signals such as eye gaze, facial expressions, postures, body, and head movements, reflecting realistic audience behaviors (Poeschl & Doering, 2012). However, few models developing believable and challenging audiences, suited for training, have been expressively formalized. In addition, the relationship between users' perception and audience size, group dynamics, avatars gender, and realism constitutes a grey area in the literature. It is worth mentioning that the feeling of presence (as defined by Witmer & Singer (1998)), and especially co-presence, influences the intensity of perceptions (Slater *et al.*, 1999). Therefore, reaching high level of presence will be targeted as well in the development of our use cases.

When used for public speaking training, VR was positively accepted by participants (Monteiro *et al.*, 2020; Palmas *et al.*, 2019), and has shown great results regarding the improvement of communication skills and reduction of anxiety (Reeves *et al.*, 2022; Schmid Mast *et al.*, 2018). As previously mentioned, this research aims to assess the effectiveness of VR training. We will use questionnaires, related to the feeling of presence (Bouchard & Robillard, 2019; Witmer & Singer, 1998), cybersickness (Kennedy *et al.*, 1993), confidence and anxiety of the speaker (i.e., PRCs (McCroskey, 1970), SUDS (Wolpe, 1969)). They will be used to evaluate the effectiveness of VR applications, and to discuss the quantitative results that will come out from our analysis, relying on the evolution of the considered KPIs throughout the training process.

Preliminary results on the usefulness of VR environments for public speaking will be presented. This work is part of an ongoing doctoral thesis and is included in a larger project that encompasses several VR environments, dedicated to different professional applications. Extensive work has then already been done in terms of development, including the implementation of specific performance indicators. These environments, developed by a lab attached to our university, are currently being validated.

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18. Assessing the role of virtual influencers on consumer well-being and follower behavioural engagement

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Extended abstract

With growing scepticism towards traditional advertising, brands are looking for more reliable ways to promote their products (Deng & Jiang, 2023). Social media influencers have proven their effectiveness in advertising, and virtual influencers (VIs) are emerging as a fascinating alternative that is reshaping the landscape of digital marketing and social media (Dondapati & Dehury, 2024). These virtual influencers blur the lines between reality and fiction on social media platforms, challenging traditional notions of celebrity and influence (Conti et al., 2022; Kim et al., 2023). With growing followings, brands are increasingly turning to these digital figures to promote products and lifestyles (Kim et al., 2023). Currently, these influencers collaborate with brands by sharing sponsored posts or documenting events related to them, integrating them into their daily activities on Instagram (Karagür et al., 2022).

Virtual influencers offer exclusive benefits to brands because they are designed and managed by specialised teams and present a carefully crafted image without the unpredictability of human behaviour (Conti et al., 2022). This control ensures a level of consistency and brand safety that appeals to marketers, although it raises doubts about the authenticity and reliability of these virtual entities (Kim et al., 2023). Despite these concerns, virtual influencers have proven effective in capturing audience attention through a unique combination of visual appeal, narrative and the singularity of their digital existence (Conti et al., 2022).

Influencer marketing, whether human or virtual, has the potential to induce behavioural engagement in users (Arsenyan & Mirowska, 2021). In line with previous research on engagement in social media contexts (e.g., Shahbaznezhad et al., 2022), this study delves into the behavioural aspects of engagement, specifically addressing the active engagement. Active engagement is defined as behaviour exhibited by highly motivated members to participate in an online community, manifested through engaging in activities, creating content, disseminating information, as well as providing emotional support to others (Casaló et al., 2007). For example, Alhabash et al. (2013) describe 'liking' as an 'affective response' and commenting as 'active and public deliberation', demonstrating behavioural engagement in social networks.

Studies on the effectiveness of virtual influencers compared to human influencers in generating engagement with followers show conflicting results. On the one hand, Molin & Nordgren (2019) suggest that virtual influencers with human-like characteristics connect more deeply with audiences and significantly increase engagement levels compared to human influencers. However, Arsenyan & Mirowska (2021) found that

virtual influencers received significantly lower positive reactions on Instagram compared to human influencers. On the other hand, Stein et al. (2022) found no advantage of a human influencer over a virtual one in terms of engagement. The different opinions in the literature regarding the ability of virtual versus human influencers to connect with their followers and improve engagement behaviour (Franke et al., 2022; Lou et al., 2023) highlight the need to better understand the role of the type of influencer (virtual versus human) in building social brand identity and achieving engagement behaviour towards generated content, especially brand content. In this context, the research question is: **How does influencer type (human vs virtual) affect follower behavioural engagement with brand content?**

The field of influencer marketing has increasingly focused on consumer well-being (Vrontis et al., 2021). This concept refers to the pursuit of values consistent with an individual's realistic consumption (Xiao et al., 2021), where belonging and social media interaction are essential (Berezan et al., 2020). Furthermore, a satisfactory experience with the information source increases well-being (Jamil et al., 2023). In line with previous research (e.g., Barari et al., 2023), this study also considers the sentiment of the comments to account for the users' well-being.

Previous research has specifically examined the negative impact of influencer marketing on customer well-being (Chung et al., 2020; Jung et al., 2021; Wang et al., 2022; Jeong et al., 2023). According to comparison theory, human influencers appear to have a more negative impact on user well-being than virtual influencers (Barari et al., 2023). This comparison is relevant to the underlying mechanisms of social media effects on individuals (Hawes et al., 2020; Valle et al., 2020; Deng and Jiang, 2023). Previous research has shown that sharing an idealised life and positive self-image on social media can induce negative feelings in others (Deng and Jiang, 2023). However, no studies have been found comparing virtual and human influencers on the potential effects of follower well-being on their engagement behaviour towards influencer content, especially Brand content. This leads to the following research questions: **How does influencer type (human vs virtual) affect follower well-being? How does the effect of follower well-being on behavioural engagement with brand content differ by influencer type (human vs virtual)?**

We have adopted a big data approach to address the three questions posed. The study employed a variety of techniques and methodologies in sequential stages: (1) Selection of human and virtual influencer profiles based on the Forbes (2023) report, focusing primarily on the social network Instagram; (2) Construction of an influencer database (N = 31) using web scraping technique, including attributes such as username, biography, number of followers, and total number of posts; (3) Build a post database using web scraping, consisting of all posts from each influencer (N = 82,009), including caption text, number of comments, number of likes, and posting time; (4) Build a comment database for each post using web scraping (N = 32,570,491); (5) Structuring and cleaning the database to obtain posts and their respective comments posted between October 2022 and November 2023; (6) Analysing the comments (text data) using machine learning techniques to determine the well-being status of followers, where -1 represents comments expressing discomfort and 1 represents comments expressing well-being; (7) Calculating social media engagement metrics based on the engagement rate, defined as the total number of likes plus the total number of comments divided by the number of followers; (8) Finally, conducting a final statistical analysis using regressions.

This study focuses on the impact of virtual and human influencers on follower behavioural engagement with brand content in the context of influencer marketing, as

well as the variation in followers' perceived well-being and their impact on behavioural engagement with brand content depending on the type of influencer. Our findings provide valuable insights and guidelines for companies involved in influencer marketing, differentiating between human and virtual influencers. The results will be presented at the conference.

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19. Determinants of Fast Fashion Purchase Intention Through Affiliate Marketing Among Vietnamese People, Mediating Role of Consumer Trust

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Keywords: affiliate marketing; purchase intention; consumer trust

Extended abstract

Introduction

In the past few years, the fast fashion sector has grown greatly, assuring rapid market entry and the capacity to deliver fashion trends quickly unveiled via runways and fashion shows (Bhardwaj *et al.*, 2010). In the context of the development of digital media, affiliate marketing, which directs potential buyers to a merchant's website, also developed as a possible marketing approach in the e-commerce sector (Duffy *et al.*, 2005). In the online marketplace, trust is acknowledged as a critical component in anticipating the purchasing intentions of consumers (Hong and Cha, 2013). Despite an enormous amount of data on fast fashion and purchase intention, no study has examined the factors that influence fast fashion purchase intention and the function that consumer trust plays in affiliate marketing in Vietnam. In light of this, we filled the gap in extant literature to empirically assess the factors that influence fast fashion purchase intention in affiliate marketing and examine the mediating role of consumer trust in the research model.

Literature review

Online reviews

As stated by Zhang *et al.* (2012), an online review is an assessment of prior customers' satisfaction with a product or service. Online evaluations have a significant impact on buying intention while making purchases for clothing online (Erkan and Evans, 2016). Based on the argument above, the following hypothesis is suggested:

H1. Online review has a positive impact on purchase intention.

Reputation

Trust in online commerce is significantly impacted by reputation (Mohseni *et al.*, 2018). Bente *et al.* (2012) show that a good reputation resulted in notably increased purchase rates. Similarly, Chen and Dubinsky's (2003) research indicates that an online retailer's reputation favorably influences purchase intention. Consequently, we recommend the following hypothesis:

H2. Reputation has a positive impact on purchase intention.

Web design

Website design, as noted by Ranganathan and Grandon (2002), is crucial for arranging content effectively on web pages. Chen *et al.* (2008) specifically links usability,

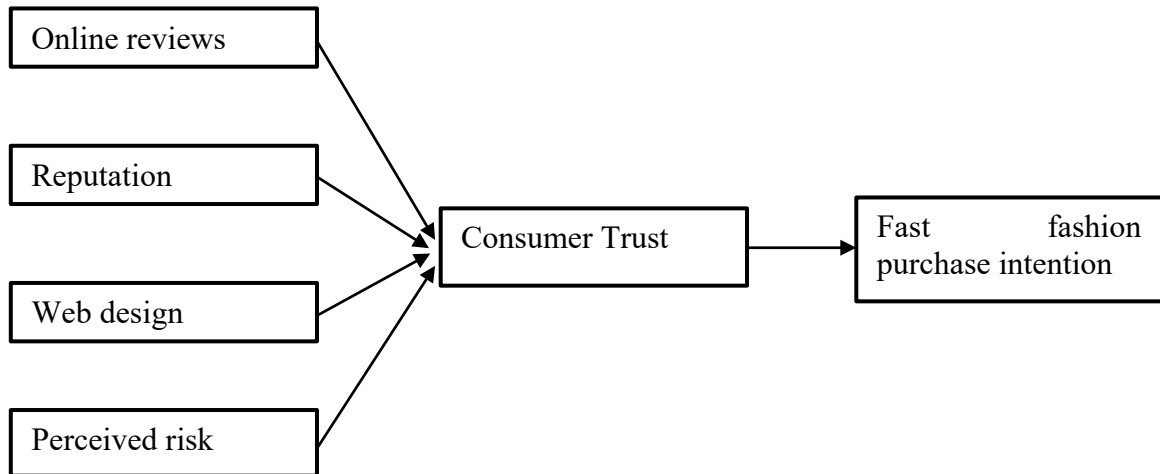
including website design, to online purchasing intentions. Therefore, websites with intuitive user experiences and appealing features tend to attract the most online buyers.
H3. Web design has a positive impact on purchase intention.

Perceived risk

Perceived risk is referred to consumers' perceptions of potential drawbacks (Kim, 2007). Chiu *et al.* (2014) also support the idea that purchasing intention decreases as perceived risk rises. As a result, the following hypothesis is proposed:

H4. Perceived risk has a negative impact on purchase intention.

Figure 1. Proposed research model



Research Methodology

The data was gathered in February 2024 from people in the Northern, Central, and Southern parts of Vietnam. Consequently, 432 replies from Vietnamese people have been gathered after seven days. In addition, a five-point Likert scale was applied to allow respondents to show their degree of agreement or feeling concerning the factors that influence purchase intention on a positive to negative-scale. Additionally, a preliminary survey that included 15 participants was pilot-tested to gather feedback in order to examine the scales' readability, coherence, cohesiveness, and face validity (Hague *et al.*, 2004). The completed surveys were then formally conducted. The PLS-SEM process was used with four independent types of tests which are indicator reliability test, internal consistent reliability, convergent validity, and discriminant validity before testing the hypotheses.

Findings

Table 1. Hypothesis testing result

	Path Coefficient	95% Confidence interval (CI)	P value	Evaluation	Type of mediator
Online review -> Consumer's Trust -> Fast fashion purchase intention	0.128	[0.072;0.199]	0.000	Supported	Partial mediator
Perceive risks -> Consumer's Trust -> Fast fashion purchase intention	0.178	[0.126 ;0.229]	0.000	Supported	Partial mediator
Reputation -> Consumer's Trust -> Fast fashion purchase intention	0.051	[0.011 ;0.104]	0.034	Supported	Partial mediator
Web design -> Consumer's Trust -> Fast fashion purchase intention	-0.045	[-0.121; -0.005]	0.090	Unsupported	No mediation

Based on the results of Table 1, it can be seen that 3 out of 4 hypotheses are supported within the 95% confidence interval. Among them, hypotheses H1 ($p=0.128$; P -value=0.000); H2 ($p=0.178$; P -value=0.000); H3 ($p=0.051$; P -value=0.000) is supported with P -value less than 0.050 and about 95% CI does not go through point 0. However, with a 95% confidence interval, Hypothesis H4 is not supported with a P -value coefficient of 0.090, greater than 0.050. Besides, explaining why all supported hypotheses are only partial mediators, we find that there are significant relationships between the independent and dependent variables in the hypotheses.

Discussion

Five hypotheses in the theoretical framework have generally been confirmed. First, our analysis shows that online reviews on affiliate channels will increase Vietnamese people's desire to buy fast fashion items. Positive feedback has a significant impact on purchase intention (Lopez and Sicilia, 2014). Second, it has been demonstrated that the reputation of the affiliate channels has a positive impact on consumers' intentions to purchase fast fashion. The reputation of marketing platforms is crucial in increasing consumers' purchase intentions, as demonstrated by previous studies (Jung & Soeck, 2016). Third, our research shows that consumer trust plays a role in how perceived risk affects purchase intention. Fourth, the degree to which Vietnamese people intend to buy fast fashion through affiliate channels is unrelated to the web design. Fifth, this study determined that the association between the reputation of affiliate channels and fast fashion purchase intention was mediated by people's trust in those channels. Consumer trust also proved to play a full mediating function between online reviews and purchase intention for fast fashion products. As a result, consumer trust may be motivated by the reputation of affiliate channels, and online reviews on the channels, which in turn influences their desire to purchase.

Conclusion, limitations, and recommendations for future research

Through affiliate marketing, we have learned about several characteristics that influence Vietnamese people's intentions to purchase fast fashion. However, many more elements

may also have an impact in addition to those described above. Moreover, there are still many gaps in the research on influencing factors through affiliate marketing, in which the augmented reality component in connection with online purchase intent and conjunction with consumer trust needs to be properly addressed and studied in the future. The categories of affecting elements, such as demographic characteristics, need to be clarified through further research.

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20. Exploring the Impact of Service Failures by Robots on Employee Attitudes, Behaviors, and Customer Satisfaction: The Moderating Role of Employee Autonomy

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Type of manuscript: Extended abstract

Keywords: service failure; service robots; customer satisfaction

Extended abstract

In recent years, the integration of service robots into organizational settings has become increasingly common, revolutionizing the way tasks are performed and services are delivered (Lu et al., 2019). Service robots offer numerous benefits, including increased efficiency, accuracy, and customer convenience (Shah et al., 2023). However, along with these benefits, the introduction of service robots also presents challenges, particularly with regard to managing service failures and maintaining positive employee and customer experiences (Choi et al., 2021; Yam et al., 2021; Yang et al., 2022). Accordingly, the existing literature has focused on customers' perceptions of service failures and service robot recovery efforts (Choi et al., 2021). However, few studies have focused on employees' perspectives; while customers' thoughts and experiences regarding service failures by service robots are important, employees' attitudes, perceptions, and behaviors toward service failures by service robots cannot be neglected (Xu et al., 2023). How would a service failure caused by service robots affect employees' attitudes toward robots and employees' job performance? After all, service organizations need to take care of internal customers as well as external customers (Xu et al., 2023). Furthermore, understanding the complex dynamics surrounding robot service failures and their impact on employee attitudes, behaviors, and customer satisfaction is crucial for organizations seeking to optimize the implementation of robotic technologies. In this context, this study seeks to explore the multifaceted relationships among service failure frequency, employee reactions, and customer outcomes, with a particular focus on the moderating role of employee autonomy.

The job demands-resources (JD-R) model (Bakker & Demerouti, 2014) posits that job demands, such as workload and service failures, can lead to stress and strain, while job resources, such as autonomy and support from management, can buffer the negative effects of job demands and enhance employees' motivation and job satisfaction. In the context of human-robot interaction and service failures in the restaurant industry, the JD-R model provides a valuable lens through which to understand the relationships outlined in the conceptual model. The integration of service robots in restaurants introduces new job demands for employees, such as managing service failures caused by robots. These demands can lead to stress, frustration, and negative attitudes toward robots (Paluch et al., 2022). However, the JD-R model also emphasizes the importance of job resources in helping employees cope with these demands. One key resource in this context is employee autonomy, which empowers employees to have more control over their work environment and decision-making processes (Zhang et al., 2023). By granting employees greater autonomy, organizations provide them with the means to navigate and manage service failures more effectively. Autonomy can help employees develop adaptive coping strategies, such as problem-solving and innovation, to address

challenges and maintain service quality. The conceptual model suggests that employee autonomy serves as a moderator in the relationship between service failure frequency by robots and employee responses. Autonomy can decrease the negative impact of service failures on employees' attitudes toward robots by offering them a sense of control and authority over their interactions with robots (Ma et al., 2022). This can lead to a reduction in negative attitudes and resistance toward robots. Simultaneously, autonomy can enhance employees' ability to engage in adaptive coping responses when faced with service failures. By providing employees with greater agency and flexibility in their roles (Jolly et al., 2021), autonomy allows them to perceive service failures as challenges they can effectively address rather than insurmountable obstacles. This may lead to an increase in adaptive coping responses, such as problem-solving and innovation.

Drawing on these theoretical foundations and hypotheses, the primary objective of this study is to empirically investigate the relationships outlined in the conceptual model (See Figure 1). Specifically, this study aims to:

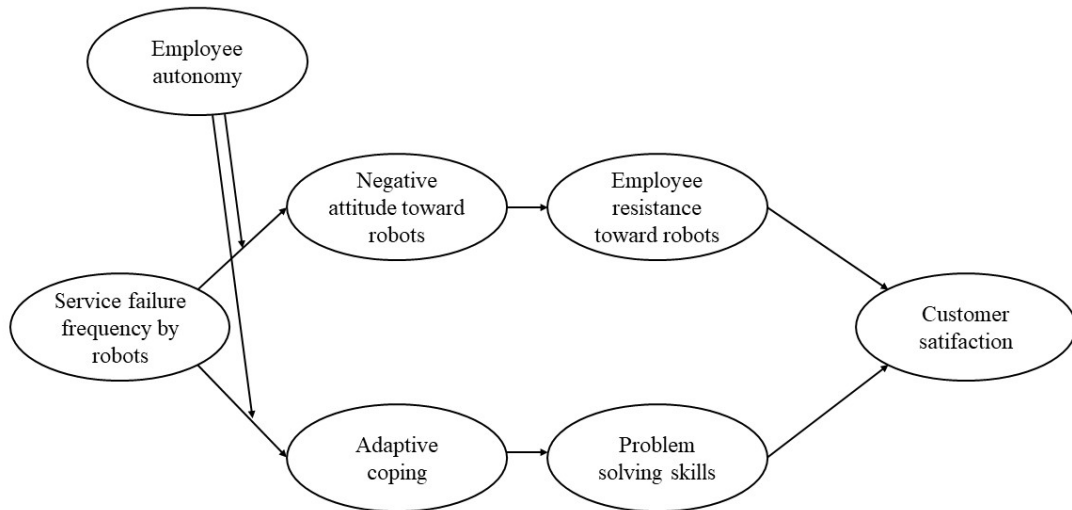
- Assess the impact of service failure frequency by robots on employee attitudes, behaviors, and customer satisfaction.
- Examine the moderating role of employee autonomy in these relationships.
- Provide insights and recommendations for organizations seeking to effectively manage service failures and optimize the utilization of service robots in their operations.

This study extends the existing literature on human-robot interaction by incorporating the perspectives of employees in service environments, a group that has often been overlooked in prior studies (Willems et al., 2023). By exploring the moderating role of employee autonomy in the relationship between service failure frequency and employee responses, this study contributes new insights to the JD-R model. The findings of this study highlight how employee autonomy can serve as a buffer against the negative effects of service failures by offering employees greater control and flexibility in their interactions with service robots. Additionally, this paper advances the understanding of adaptive coping and its role in managing service failures. By demonstrating that employee autonomy can strengthen the link between service failure frequency and adaptive coping, this research emphasizes the importance of providing employees with autonomy and support to effectively navigate the challenges posed by service robots. This insight has important implications for both human-robot interaction research and organizational behavior, as it suggests that organizations can improve employee outcomes and overall service quality by empowering employees to take an active role in managing their work environment.

The findings offer actionable guidance for maximizing the benefits of service robot adoption across various industries. By understanding the factors that influence employee responses to service failures and the subsequent impact on customer satisfaction, organizations can implement targeted training programs, refine operational protocols, and tailor technological solutions to capitalize on the strengths of both human and robotic workforce. More specifically, organizations could provide employees with comprehensive technical training to understand how service robots operate, including common failure points and troubleshooting techniques (Xu et al., 2020). This will empower employees to handle robot failures with confidence and competence. Moreover, organizations could establish a dedicated helpdesk or support team that employees can contact for assistance with robot failures. This provides employees with a safety net when facing unexpected issues. Furthermore, organizations could encourage

a culture of collaboration and support among employees, where they can share experiences and best practices for dealing with robot failures (Balaji et al., 2020).

Figure 1. Conceptual model



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21. Customer service in hospitality: Robots vs Humans? A Systematic Literature Review

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Type of manuscript: Extended abstract

Keywords: service robots; customer service; AI; hospitality; tourism

Extended abstract

This systematic literature review (SLR) critically assesses the interplay between AI/service robots and human personnel in customer service within the hospitality industry, probing the viability of a symbiotic human-robot interface to enrich customer experiences. To provide a holistic view of the literature on customer service using service robots in hospitality and tourism and its comparison to human customer service, this study reviewed 72 related articles by conducting descriptive and content analysis. In this rapidly transforming landscape, it is a compelling question to understand the landscape of service robot deployment in hospitality. Hence, exploring whether it will replace or collaborate with human agents is important. This is a theoretical query and a critical consideration for businesses looking to thrive in the digital age.

This exploration focuses on the following research question: “What role will service robots play in the future of customer service within the hospitality industry, and how might a collaborative model between service robots and human agents be realized?”

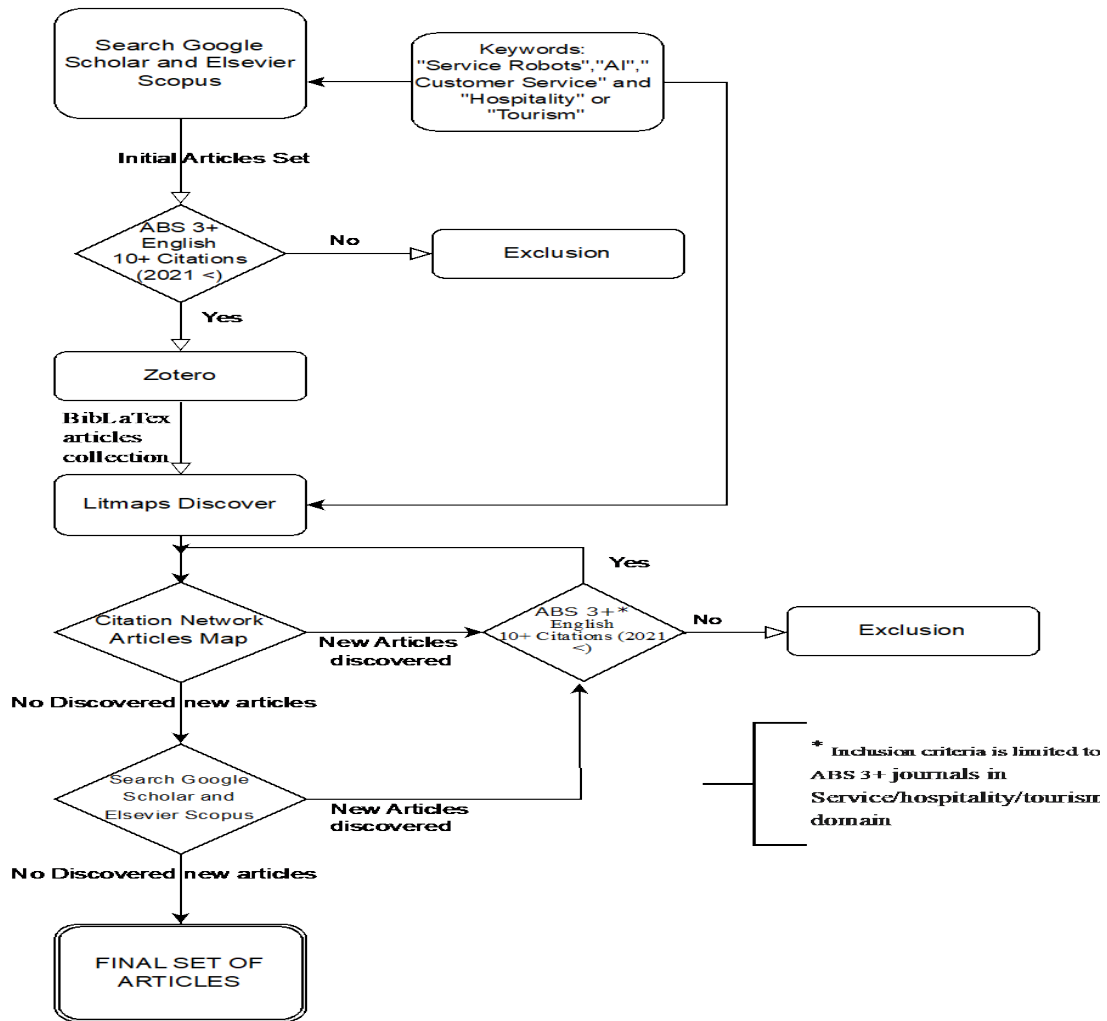
This inquiry will serve as the linchpin for the following objectives:

- Assess the current state of the academic literature and the potential evolution of AI/service robot deployment in the hospitality sector.
- Identify research gaps in the current academic literature.
- Explore the feasibility and implications of a hybrid model in which service robots and humans collaborate to enhance customer service in hospitality settings.

AI-empowered article discovery methodology was adapted to ensure the selection of the most accurate and complete set of articles. The search was mainly limited to publications over the last 10 years, from 2013 to 2024, due to the relative recency of the topic. Fig 1 explains the article selection flow chart.

The inclusion criteria were limited to ABS 3 and ABS 4, 4* journals in the service/hospitality/tourism domain. More than 10 citations were used as the minimum quality threshold for papers published in 2021 and earlier. The initial search returned a starting set of 30 results. After a screening and filtering process that eliminated 20 studies, 10 papers were used as a discovery map seed and fed to Litmaps. Iterations were run for more than 15 discovery cycles till all discovered articles did not satisfy the inclusion criteria. The final set result was 72 articles.

Figure 1. Article selection flow chart



The result is a map sorted by citation and date of publication or reference, showing that all articles are either related in subject or reference each other. The maps were reviewed with every iteration. Figs 2 and 3 visualize the resulting network of articles. The visualization proves the close relationship between the discovered papers, which cite and reference each other and research closely related topics.

Figure 2. Map with Y as the Citation and X as the Time

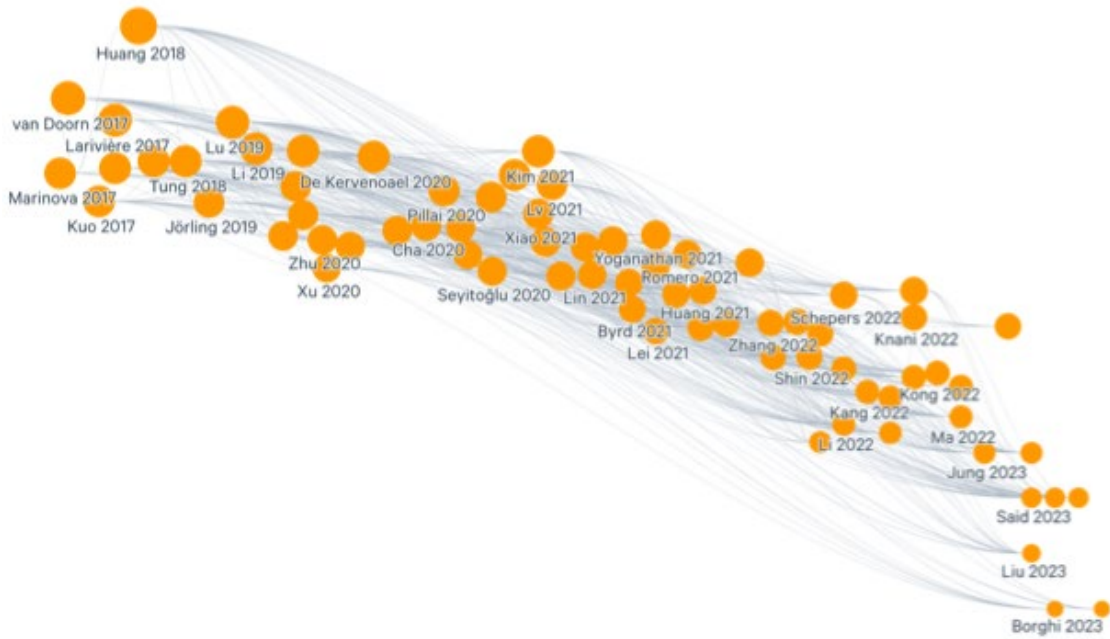
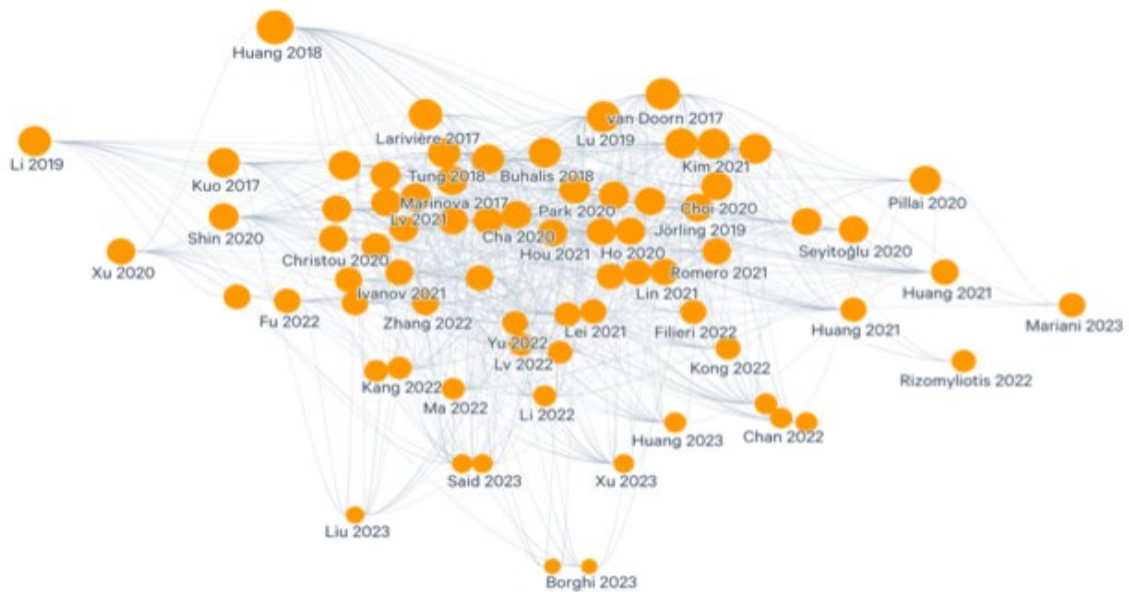


Figure 3. Map with Y as the Citation and X as the references



As shown in Table 1, seven different ABS3+ peer-reviewed journals were included in the dataset source.

Table 1. Publication Channels

Ranking	Name of Journal	Number of Papers
1.	International Journal of Hospitality Management	18
2.	Journal of Service Research (JSR)	9
3.	International Journal of Contemporary Hospitality Management	25
4.	Tourism Management	7
5.	Journal of Business Research	5
6.	Annals of Tourism Research	4
7.	Journal of Travel Research	4

As shown in Table 2, from the study scope aspect, 38 articles were on tourism, 27 on hotels, and 12 on restaurants. Regarding research design, 28 used quantitative methods, 14 used qualitative methods, 9 used mixed approach, 8 used field experiments, 8 were conceptual papers, and 5 were reviews. Articles used multiple data collection methods: 23 used interviews, 39 used surveys, 12 used experiments, 8 were conceptual papers, 9 used Observation, 2 used the Delphi approach, and 7 used case studies. 11 papers used service employees as their data source, 29 used customers and guests as their source, 5 used experts, 11 used databases and online platforms, and 16 used general respondents and surveys.

Table 2.

Research Aspects Number of Publications	count	Percentage %
Research context		
Hotels	27	37.5%
Restaurants	12	16.7%
Tourism	33	45.8%
Research design		
Quantitative	28	38.9%
Qualitative	14	19.4%
Mixed methods	9	12.5%
Conceptual paper	8	11.1%
Field experiment	8	11.1%
Review	5	6.9%
Data collection method(s)		
Interview	23	31.9%
Survey	39	54.1%
Experiment	12	16.7%
Conceptual paper	8	11.1%
Observation	9	12.5%
Delphi approach	2	2.8%
Case study	7	9.7%
Sample source		
Service employees	11	15.3%
Customers/Guests	29	40.3%
experts	5	6.9%
Online platforms and Databases	11	15.3%
General respondents and Surveys	16	22.2%
Sample size		
< 100	12	16.7%
101–200	6	8.3%
201–300	12	16.7%
300-400	7	9.7%
400–500	12	16.7%
> 500	14	19.4%
Not specified	9	12.5%

The SLR also explores the theories adopted in each article. 30 theories are applied in the 72 articles. The most used theory (16 articles) were different versions of the Technology Adoption Model (TAM) theory. The second most used theory in six articles was the Cognitive Appraisal Theory. Five articles used the Social Presence Theory (REF). Three articles used Social Exchange Theory (REF), which examines social interactions regarding the benefits and costs between individuals or groups. Three articles used the Product-Level Theory (REF).

In conclusion, the initial discussion might have focused on "if" to deploy AI and robots, but the conversation is evolving towards "how" to do so through optimizing for efficiency. Research is ongoing to find the most efficient ways to integrate AI and robots into existing workflows, ensuring smooth operation and a positive impact on the bottom line. The emphasis shifts towards how AI and robots can complement human employees, not replace them entirely. The ethical implications of AI and robots are a crucial area of research. This includes mitigating job displacement, ensuring fair

treatment of employees, being transparent with customers about AI use, and addressing potential biases in AI algorithms.

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22. Robots should be slaves: Perceptions of Bulgarians towards potential robot rights and obligations

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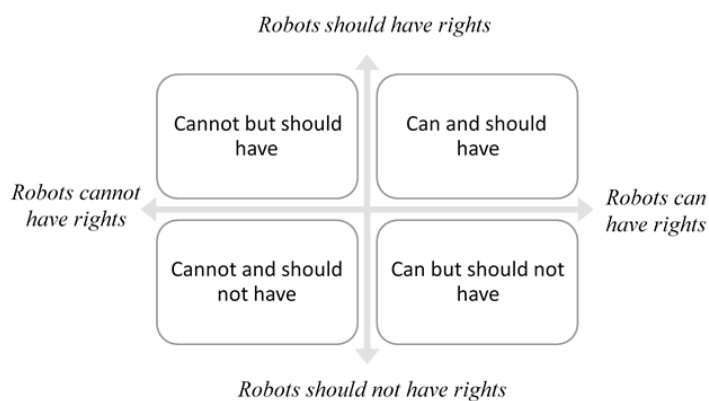
Type of manuscript: Extended abstract

Keywords: robot rights; robot obligations; robot rights matrix; Bulgaria

Extended abstract

The topic of robot rights is not new, and it has gained momentum in recent years (Gellers, 2020; Gunkel, 2018, 2023; Löhr, 2023; Schwitzgebel, 2023; Tigard, 2023). The overwhelming majority of investigations are conceptual and focus on philosophical, ethical and legal discussions of the subject. Very few empirical studies assess public opinion towards the topic, e.g. Banks (2021), de Graaf et al. (2022), and Lima et al. (2020), indicating a clear gap in the literature. This paper contributes to the body of knowledge on robot rights by providing an empirical validation of the robot rights matrix of Gunkel (2018) – see Figure 1. It aims to evaluate public perceptions towards robot rights and obligations by using Bulgaria as an empirical setting. The specific objectives include: a) assessing the perceptions of respondents whether robots *can* and *should* have rights and obligations; b) evaluating the role of demographic characteristics of respondents in shaping their perceptions towards robot rights and obligations; c) assessing the impact of perceived societal impacts of AI on the support for robot rights and obligations.

Figure 1. Robot rights matrix



Source: Developed by the authors based on Gunkel (2018)

Data were collected through an anonymous online questionnaire among respondents in Bulgaria. The study had three target respondent groups: *a*) people with education or a job position in the field of Law; *b*) people with education or a job position in Robotics, Artificial intelligence, Computer Science or similar; and *c*) people without a background in the previous two fields.

The questionnaire included several blocks of questions. The first block collected demographic data (biological sex, age, highest completed level of education, place of living, and perceived economic wellbeing). The second block asked respondents whether they had education and/or a job position in the fields of Law, Robotics, Artificial intelligence, Computer Science or similar, to identify the respondents from the first two target groups. It also included questions related to respondents' knowledge about AI and robotics and how they positioned themselves on the left-right political spectrum. The third block included a series of statements related to the perceived benefits and the dehumanisation effects of AI, adopted from Ivanov and Webster (2024), measured on a 5-point level of agreement scale (1-completely agree, 5-completely disagree, reverse coding of the statements related to the dehumanisation effect).

The fourth and fifth blocks asked respondents whether artificial autonomous agents such as robots and artificial intelligence programmes *can* have and *should* have a set of rights and obligations. The list of most rights was adapted from Lima et al., (2020) and de Graaf et al. (2022). Additional rights and obligations were formulated by the authors based on the *Universal Declaration of Human Rights*, the *International Covenant on Civil and Political Rights*, and the *International Covenant on Economic, Social and Cultural Rights*. The list of the rights and obligations and their translations into Bulgarian were consulted by two lawyers with extensive legal experience who were native speakers. The list included rights and obligations in several domains: *general* (e.g. adhere strictly to all legal regulations; respect human rights even if they go against their own robotic rights), *economic* (e.g. own property, make payments, receive a wage/salary, strike, unionise, pay taxes, etc.), *personal/civil* (e.g. freedom of expression, not to be abused, access to energy to recharge, seek asylum from persecution, copy and duplicate themselves, have and change their nationality, etc.), *political* (e.g. vote for public officials, be a candidate for public office, etc.), *criminal* (e.g. be sued, sue people and legal entities). In difference to previous studies, this research included legal obligations as well. Respondents shared their opinions on 5-point scales – from *1-Definitely cannot have the right/obligation* to *5-Definitely can have the right/obligation* in the fourth block, and from *1-Definitely should not have the right/obligation* to *5-Definitely should have the right/obligation* in the fifth block. To avoid order effects both lists of rights and obligations were randomised.

To reach the potential respondents the questionnaire was posted on social media groups in the country related to law and legal issues, robotics, artificial intelligence, software engineering, science and similar. Additionally, the authors utilised their contacts with people who fell within the first two respondent groups. Moreover, an ad with the link to the questionnaire was run on Facebook. The final sample included 215 respondents.

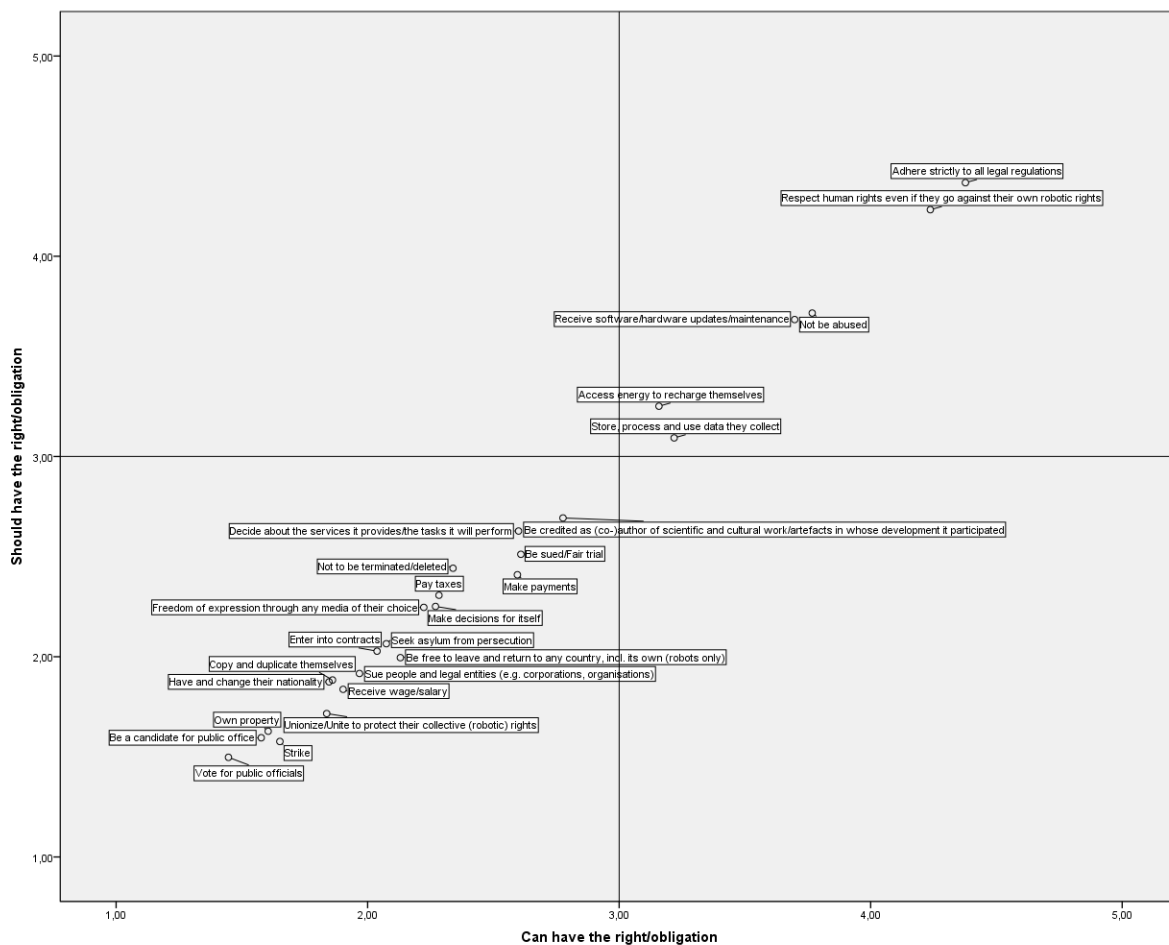
Key results

- Figure 2 presents the acceptance of robot rights and obligations based on Gunkel (2018) robot rights matrix.
- As a whole, respondents did not think that robots and AI were capable of having rights per se or that they should be given rights.
- Respondents were most sceptical towards political rights, namely *Vote for public officials* ($M_{can}=1.45$, $M_{should}=1.50$) and *Be a candidate for public office* ($M_{can}=1.58$, $M_{should}=1.60$). Some economic rights such as *Strike* ($M_{can}=1.65$, $M_{should}=1.58$), *Own property* ($M_{can}=1.60$, $M_{should}=1.63$) and *Receive wage/salary* ($M_{can}=1.90$, $M_{should}=1.84$) were not supported either. On the other extreme, respondents supported rights related to the existence of robots/AI such as *Not to*

be abused ($M_{can}=3.77$, $M_{should}=3.72$) and *Receive software/hardware updates/maintenance* ($M_{can}=3.70$, $M_{should}=3.68$) but not the right *Not to be terminated/deleted* ($M_{can}=2.34$, $M_{should}=2.44$).

- The two-step and K-means cluster analyses revealed the existence of two clusters. Cluster 1 included 119 respondents who had positive perceptions towards AI and were more supportive towards robot rights while the 96 respondents in Cluster 2 were reserved towards AI and robot rights.
- The Mann-Whitney U-test and the Kruskal-Wallis tests revealed that respondents were quite uniform in their responses because biological sex, education in Law, education in IT, educational level, age, place of living, wellbeing and political orientation had no or marginal impact on respondents' perceptions towards robot rights and obligations.
- The findings drew a picture where robots were perceived as slaves without the rights to reproduce, own property, strike, receive a salary, vote or be elected but with the obligations to adhere to regulations and respect humans.
- Respondents, regardless of their background, did not make a distinction between the two options for the rights (*can have* and *should have* the right/obligation).

Figure 2. Robot rights and obligations matrix (full sample)



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23. Being Served in the Metaverse: A Dynamic Empirical Analysis of Co-Creation Between Customers and Platforms, Customer Evaluations, and Product and Financial Market Performance

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Type of manuscript: Extended abstract

Keywords: metaverse; customer evaluation; topic modeling; BERTopic; VAR (vector autoregressive modeling); marketing strategy; marketing-finance interface

Extended abstract

This study explores the practical aspects of the metaverse, moving beyond conceptual and perception-based research to analyze its real-world applications. Specifically, this study examines the interplay between customer-platform co-creation, customer evaluations, and their influence on both product and financial market performance. The research integrates literature from new technologies in the metaverse (e.g., Hennig-Thurau et al. 2022), mobile app literature (e.g., Allon et al. 2022), the integrative quality framework (e.g. Golder et al. 2012), and the marketing-finance interface (e.g., Edeling et al. 2021). This study uses BERTopic (Grootendorst 2022), a state-of-the-art topic modeling technique, to analyze over 113,508 customer evaluations over a period of five years from a leading metaverse platform. The analysis findings identify five relevant metaverse attributes: interface, interaction, environment (event), avatar, and currency. To further assess the dynamic outcomes of customer-platform co-creation, this study examines app version-level aggregated data over three years covering 122 versions by Vector Autoregressive Modeling with Exogenous Variables (VARX; Colicev and Pauwels 2022). Our findings reveal that customer-platform co-creation directly and indirectly fosters customer evaluations, product market performance, and financial market performance. Our results also provide evidence for a feedback loop between customer evaluations, experienced attribute quality, and attribute quality enhancements through app updates. This research demonstrates the value of listening to customer feedback and of co-creating with customers, and provides the first investigation of the financial-market implications of running a metaverse platform.

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24. How Metaverse shapes individual happiness in real life: The role of individual mindsets

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Type of manuscript: Extended abstract

Keywords: metaverse experience; mindsets; happiness

Extended abstract

As technology advances, a more immersive digital environment, such as Metaverse, is inevitable. Long-term use of digital technology can always have an impact on individuals' cognitive processes whether short or long term (Sparrow et al., 2011). Recent research emphasizes the importance of examining how engagement with the metaverse can affect individual cognition, particularly its impact on individual mindsets (Hadi et al., 2024)—a key determinant of mental well-being (Yeager & Dweck, 2020). The Metaverse offers limitless opportunities for creative expression, which enhances the user experience and has the potential to foster an individual's growth mindset, encouraging them to pursue personal development goals and embrace learning (Murphy & Dweck, 2016). This could potentially serve as a buffer against mental health issues and contribute to individual happiness in the real world (Burnette et al., 2020). This logic led us to hypothesize that metaverse experiences have the potential to change individuals' mindsets, which in turn increases their happiness.

However, exploration of how the use of Metaverse can influence individuals' mindsets in the real world is still limited, especially the relationship between metaverse experience and mindsets in influencing their happiness. One interesting question arises: Do individuals' metaverse experiences foster a growth mindset to generate self-efficacy and optimism in life, which further influences their happiness? Given that further investigation is needed to understand how Metaverse usage may impact individuals, the current research aims to explore the relationship between individuals' Metaverse experiences, mindsets, self-efficacy, optimism, and the subsequent influence on their happiness.

Individuals' activities in the digital world are generally aimed at gratifying their intrinsic needs (Hong & Cho, 2023; Oh et al., 2023; Yu et al., 2024). Given that individuals' self-regulation consists of two distinct foci (i.e., prevention and promotion; Higgins, 2002), individuals' development of a needs-fulfillment focus may also reflect their self-regulatory orientation. Individuals may seek different goals to fulfill their needs, with one goal oriented towards preventing harm or mitigating negative impacts (prevention-focused), and another goal aimed at gaining profits or realizing positive outcomes (promotion-focused). In the context of the Metaverse usage, previous research indicates that the use of Metaverse with human brands and engaging in human brand-

related activities can fulfill various intrinsic needs, such as the need for escapism, enjoyment, social relatedness, and self-expression (Hong & Cho, 2023; Oh et al., 2023; Yu et al., 2024). While the first one is aligned with the prevention of negative outcomes, the latter three needs are oriented toward desire fulfillment and benefit acquisition (Honora et al., 2024). Considering that mindsets are also closely related to an individual's self-regulatory focus (Mathur et al., 2016; Rucker & Galinsky, 2016), this research is also interested in investigating how an individual's need-fulfillment can influence the relationship between metaverse experience, mindset, and happiness. This research also aims to reveal which types of individuals are more likely to benefit from the Metaverse.

Currently, the data are being collected. This research will have four potential implications for research. First, this research will enrich the body of research on metaverse in impacting individual lives, especially on how it can enhance individual well-being. Second, this research will enhance the literature on individual well-being by showing the opportunity to achieve happiness in real life through the mindsets shifting evoked by the virtual experiential process. Third, this research will contribute to the mindsets literature by providing empirical evidence about the dynamic of individual mindsets due to immersive technology. Specifically, this research may indicate that individuals can develop more of a growth mindset due to their immersive experience in Metaverse which will impact their lives in reality. Lastly, this research will confirm the type of individuals—based on their need-fulfillment focus—that are more likely to attain benefits from their Metaverse experience.

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25. Exploring the Impact of Power Distance Belief on Online Consumer Behavior: A Cross-Cultural Analysis

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Type of manuscript: Extended abstract

Keywords: online consumer reviews; emotional reviews; power distance belief

Extended abstract

Introduction

Literature extensively documents the direct impact of online reviews on consumer purchasing behavior (Allard et al., 2020; Chevalier and Mayzlin, 2006; Fang et al., 2013; Stamolampros et al., 2019). Consumer reactions are influenced by emotionality, affecting attitudes and purchase behaviors through online reviews (Guo et al., 2020; Kim et al., 2018; Rocklage and Fazio, 2020). Emotional content, crucial for persuading and resonating with readers, varies in impact based on product type, showing positive effects for hedonic products but potentially backfiring for utilitarian ones (Rocklage et al., 2018; Ullah et al., 2016; Zheng, 2021). This study extends the exploration into how cultural dimensions, specifically power distance, affect the reception of emotional content in online word-of-mouth, proposing unexplored conditions where emotionality may backfire.

The research explores how cultural background influences consumer responses to emotional versus cognitive content in online reviews. Noting that consumer perceptions and decision-making are shaped by cultural factors (Cheung et al., 2008; Zheng, 2021), and drawing connections to recent research (Lee and Lalwani, 2024; Li et al., 2023; Qin and Wang, 2023), the study focuses on the role of Power Distance Belief (PDB) in shaping these effects. Previous studies have examined cultural impacts on review characteristics and reviewer behavior (Fang et al., 2013; Hong et al., 2016; Stamolampros et al., 2019), but less attention has been paid to the cultural context of review readers, particularly in terms of emotional content response. This gap is addressed by hypothesizing differential responses to review emotionality based on PDB levels, affecting product favorability and trust in reviews from experts. The findings aim to guide multicultural marketing strategies, emphasizing tailored content for diverse cultural backgrounds.

Research Background and Expected Outcomes

This study utilizes a cross-cultural comparison between American and Indian consumers to explore how PDB influences consumer responses to online review emotionality through two experiments, thereby deepening our understanding of the impact of cultural dimensions on consumer behavior. Having an analytical lens, it delineates how high-PDB consumers, focusing on outcomes, prefer cognitive over emotional content in utilitarian product reviews, potentially experiencing negative reactions to emotional expressions. Conversely, low-PDB individuals, inclined towards process orientation, may welcome emotional content more warmly. Consequently, we expect that high-PDB contexts will show decreased review helpfulness and product favorability when exposed to emotional content for utilitarian products, compared to

cognitive content. In addition, we aim to show that low-PDB contexts will exhibit increased review helpfulness and product favorability when emotional content is used for utilitarian products, as opposed to cognitive content. We also aim to provide further evidence on the underlying mechanism by showing that the consumption mindset (process/outcome) will mediate the impact of PDB and review type (emotional vs. cognitive) on both review helpfulness and product favorability.

The study further delves into how reviewer expertise modulates trust and favorability towards products through a third experiment, positing that expert-driven emotional reviews may significantly influence high-PDB readers' perceptions. Hypotheses articulate these dynamics, aiming to elucidate the pathways through which PDB and consumption mindsets—outcome versus process—mediate the relationship between review content and consumer reaction, enriching the discourse on multicultural consumer analysis and online marketing strategies. Therefore, we anticipate that in high-PDB contexts, emotional reviews from experts (vs. anonymous reviewers) for utilitarian products will significantly increase trust in the review and favorability toward the product. Finally, we delve into the role peripheral route's influence on consumer attitudes by showing that expertise elevates the positive impact of emotional content on review trust and product favorability in high-PDB contexts.

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26. AI-Based Scenario Analysis Framework and Validation using a Delphi Approach

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Type of manuscript: Extended abstract

Keywords: scenario analysis; artificial intelligence; business strategy

Extended abstract

The rise of technology has driven a global digital transformation, significantly upgrading the business landscape and leading to various consequential impacts. Nowadays, competitiveness cannot be dissociated from technological advancement, as it is essential for companies to modernize in order to achieve sustained success (Astapciks, 2023). Nonetheless, technological transition is not the sole challenge facing businesses; there is also a cloud of uncertainty looming over them, including factors such as geopolitical instability, inflation, and a pessimistic worldwide economic outlook. Consequently, resilience has become a primary objective for firms, encompassing not only the ability to recover from adversity but also to navigate disruptions, adapt to change, and thrive in unfavorable circumstances. This is a skill that must be strengthened by companies through innovative strategies in order to foment adaptation capacity to promote sustainable growth (McKinsey & Company, 2023).

Hence, Scenario Analysis (SA) offers value added for corporations when applied to “strategic integrated business planning processes” (Rikalo, 2023). This tool involves an array of pictures of potential reality paths, highlighting uncertainties and trends from the external environment (Schoemaker, 1995; van der Heijden, 2000). SA promotes firms’ adaptation to external fluctuations, while it stimulates innovation and the achievement of competitive advantage, due to its potential to improve corporate performance and expand profitability (Tiberius, 2019; Tiberius et al., 2020). Nonetheless, SA development is demanding in terms of resources, which may limit the frequency of its adoption.

AI has enabled managers to quickly conduct "what if" scenarios to identify trends and potential outcomes, significantly enhancing the practicality of SA (Kitsios & Kamariotou, 2021; Rikalo, 2023). According to Katakam et al. (2020), AI involves replicating human actions, focusing on cognitive problem-solving functions. AI efficiently processes and interprets large volumes of data with greater speed and accuracy than humans, learning from it and recognizing patterns to accomplish specific tasks (Kaplan & Haenlein, 2019; Katakam et al., 2020; Kitsios & Kamariotou, 2021). In fact, Ren et al. (2023) suggest that combining human and machine intelligence can lead to improved performance by enhancing their respective strengths while reducing their inconsistencies. From a corporation point of view, it is important that SA constantly ties it to the respective outside context by tailoring strategy and action plans, which is highly demanding (Balarezo & Nielsen, 2017; Huiskamp et al., 2022), being possible to accomplish through the integration of AI as it is able to analyze and interpret efficiently enormous amounts of data with minimal human intervention, learning from it and detecting prior or novel patterns in order to complete specific tasks (Kaplan & Haenlein, 2019; Katakam et al., 2020).

The main aim of this research is to facilitate the application of SA by managers to analyze future potential paths and grow business management efficiency. In particular, this study builds on SA constraints and AI advantages pointed out by the literature by exploring their potential connections and suggesting possible contributions of AI

techniques and models to fill in specific drawbacks regarding each SA stage. This enabled the proposal of a framework to integrate AI in SA development.

The methodology adopted a Delphi approach, which consisted of three rounds, one in-depth interview followed by two rounds of surveys. The study adheres to the ethical principles recommended for research in social sciences, namely the 'Declaration of Helsinki'. Participants are experts in the field (N = 18), both scholars and practitioners, who were invited to discuss the framework proposal and validate a final version that integrated their initial feedback and improvement suggestions.

This research makes several contributions. It systematizes the main challenges in developing SA. It articulates SA and AI literature to identify the potential synergies. It offers a framework validated by experts on how to integrate AI in SA. As its main outcome, the proposed framework helps managers to automatize SA and turn its development into an easier and more accessible process that can be increasingly adopted by businesses. Future research should further validate it by applying it to real-world tests.

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27. Investigate the effectiveness of AI-powered driver assistance systems to enhance the customer experience and emotional wellbeing: a review-based study

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Keywords: customer experience; artificial intelligence (AI); driver assistance, emotional wellbeing; psychological wellbeing; mental health

Extended abstract

Artificial Intelligence (AI) encompasses a broad spectrum of technologies, including machine learning, natural language processing, robotics, and human-computer interface innovations like the Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality. These technologies enable diverse applications such as virtual assistants, chatbots, autonomous systems, and intelligent automation. In 2024, the global advanced driver assistance systems (ADAS) industry surged, generating nearly 58 billion U.S. dollars. Projections suggest significant growth, with the global ADAS market expected to surpass 125 billion U.S. dollars by 2029. Notable examples of ADAS include automated emergency braking, lane-keeping assist, automatic parking, and adaptive cruise control (Statista Mar 14, 2024).

While research often focuses on the technical aspects of AI in driver assistance, scholars have identified the importance of addressing customer expectations and health & emotional well-being for successful technology adoption. To address this disparity, we advocate for conducting a comprehensive systematic literature review. This review aims to consolidate existing research on AI-driven driver assistance systems, customer experience, and the emotional well-being of customers. This study aims to provide scholars, designers, and practitioners with a comprehensive assessment of the current state of the art, enabling informed decisions and advancements in this critical area.

Introduction

Artificial intelligence (AI) is a field of study and technology aimed at creating systems that can perform tasks that typically require human intelligence. AI is a multidisciplinary technology that combines cognition, machine learning, emotion recognition, human-computer interaction, data storage, and decision-making (Lu, Y 2019). The advent of Industrial Revolution 4.0, coupled with rapid advancements in artificial intelligence (AI), is poised to reshape the landscape of the global automobile sector in profound ways (Selim 2024). Autonomous-derived sensors and AI algorithms are utilized to continuously refine and ultimately, minimize travel time, fuel consumption, and potential risks while maximizing passenger comfort and safety (Zhang & Lu, Y 2021).

Experience is a result of "encountering, undergoing, or living through events or situations". The composition of technologies involved in AI, helps the customer to experience from the traditional touch and feel to virtual experiences without compromising the actual (Hoyer et.al, 2020). AI-incorporated smart technology and

connectivity features will help the customer to have a better experience (Ullah et al., 2018).

AI-integrated driving assistance will enable users to enjoy Cruise control, lane-keeping assist, and autonomous emergency braking could help to reduce accidents and enhance overall traffic safety (Rittger et al.,2022). AI-integrated vehicles provide an enhanced experience and can improve both physical and mental health, as well as general well-being, which includes factors such as enjoyment, pleasure, and satisfaction (Singleton et al., 2020). Even while comfort, safety, and enjoyment are crucial in cars, we are today confronting a global healthcare crisis, as healthcare prices continue to climb, where there is a need to build AI-enabled vehicles to signal the people's health domain controller to avoid major losses (Liu et al., 2022). The purpose of this study is to understand how AI technologies influence customer experiences in automotive and contribute to the enhancement of their health and well-being.

Methodology

A bibliometric analysis was performed using the R-Biblioshiny software tool on a dataset consisting of 2342 documents retrieved from the Web of Science (WOS) and Scopus databases for this abstract.

Keywords have been used for the search:

- ("Artificial Intelligence" OR AI OR "Machine Learning" OR ML OR "Deep Learning" OR "Digital Marketing" OR "Intelligent Marketing") AND ("Customer Experience" OR "Consumer Experience " OR "Wellbeing" OR "Well-being") AND ("Automotive" OR "Automobile" OR "Auto")
- ("Artificial Intelligence" OR AI OR "Machine Learning" OR ML OR "Deep Learning" OR "Digital Marketing" OR "Intelligent Marketing") AND ("Customer Experience" OR "Consumer Experience ") AND ("Wellbeing" OR "Well-being")

Major results are considered for analysis in the below search.

- ("Artificial Intelligence" OR AI OR "Machine Learning" OR ML OR "Deep Learning" OR "Digital Marketing" OR "Intelligent Marketing") AND ("Customer Experience" OR "Consumer Experience " OR "Wellbeing" OR "Well-being") AND ("Automotive" OR "Automobile" OR "Auto")

The major goal was to create visualizations and maps that depicted the landscape of research in artificial intelligence, consumer experience, and emotional health. This analysis sought to identify trends, patterns, and interconnections among scholarly publications in different fields, offering light on their evolution and multidisciplinary crossovers.

Findings

Below are the results found through the initial bibliometric analysis about the most used authored keywords, top authors, and journals. To conduct a thorough systematic literature review that maps the intersections of AI, customer experience, and emotional well-being, a meticulous bibliometric analysis is indispensable. This analysis must harness additional databases such as Scopus and employ refined keyword enhancements to accurately filter the requisite documents.

Table 1. Summary of Top Journals

Sources	Articles
Technological Forecasting and Social Change	21
IEEE Access	17
Sensors	16
Journal Of Cleaner Production	15
International Journal of Human-Computer Interaction	14
Journal Of Retailing and Consumer Services	14
Sustainability (Switzerland)	13
Environmental Science and Pollution Research	12
IEEE Transactions on Engineering Management	10
International Journal of Consumer Studies	10
Technology In Society	10

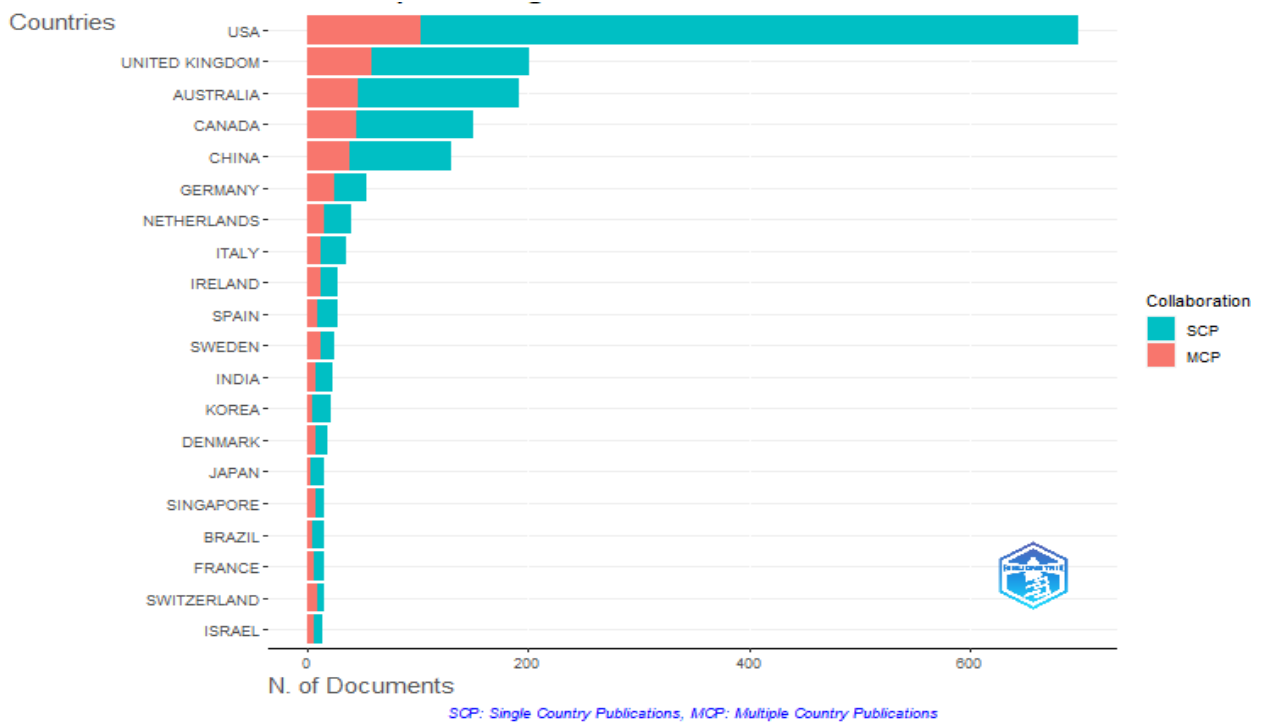
Table 2. Summary of Top Authors

Authors	Articles
Wang Y	17
Li Y	16
Kumar A	15
Zhang X	15
Liu Y	14
Chen J	13
Li X	13
Wang J	13
Zhang Y	13
Gupta S	8
Kumar V	8

Figure 1. Word Cloud – Authors used Keywords



Figure 2. Corresponding Author's Countries



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- Zhang, C., & Lu, Y. (2021). Study on artificial intelligence: The state of the art and future

28. Understanding consumers' perception of AI in services: An experimental study of perceived service quality

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Type of manuscript: Extended abstract

Keywords: artificial intelligence; AI-based services; service quality

Extended abstract

The incorporation of AI technologies, such as chatbots or AI-based recommendations, into service processes has become increasingly prevalent, with a significant increase in companies utilizing these AI-powered tools for consumer interactions (De Keyser *et al.*, 2019). For instance, Amazon is successfully using AI for personalized size recommendations for customers of their fashion items (Chaudhri, 2024). While some studies highlight AI's potential to improve operational service efficiency and customer satisfaction (Chung *et al.*, 2020), others reveal consumers' skepticism towards AI-based services due to a perceived lack of empathy and expertise (Luo *et al.*, 2019; Pizzi *et al.*, 2023). However, while we are aware of acceptance differences between services with and without AI, we have not yet acquired detailed knowledge about why exactly AI-based services are used less frequently. One might assume that attitudes and assessments such as service quality perceptions play a central role due to their influence on customer satisfaction (Rust & Oliver, 2000) and service usage (Zeithaml *et al.*, 1996). Thus, we aim to bridge this gap by posing the following research question: How does the employment of AI in services affect consumers' quality perceptions, in particular responsiveness, reliability, assurance, and empathy?

The theoretical foundation of our study is based on literature pertaining to service quality and the integration of AI in services. A common model for measuring service quality is the SERVQUAL model (Parasuraman *et al.*, 1988) which measures service quality through five dimensions: tangibles, responsiveness, reliability, assurance, and empathy. To analyze how the use of AI might influence perceived service quality, we structured the different dimensions of the service quality scales in this study in reference to the classification of intelligence by Huang and Rust (2018). As the tangible elements of a service are of limited relevance, particularly in online service contexts, they were neglected for the purpose of this study.

Huang and Rust (2018) distinguish between four types of intelligence required for service tasks: mechanical, analytical, intuitive, and empathetic intelligence. According to this classification, services that are integrated into customer relationships and in which intuitive and empathetic intelligence – the “higher” intelligences – play a role, are much less suitable for being replaced by AI systems. When AI is employed in services, we, therefore, presume that service aspects that require such higher intelligences cannot be sufficiently fulfilled. Consequently, we assume that assurance and empathy – being emotional dimensions – are service quality dimensions that consumers will consider to not be able to be fulfilled by AI. Hence, we hypothesize:

H1: AI-based services (vs. non-AI-based services) lead to lower (a) assurance and (b) empathy evaluations.

AI systems are, on the other hand, particularly suitable for taking over standardized service processes and, therefore, can better implement the “lower” intelligences:

mechanical and analytical intelligence (Huang & Rust, 2018). Such standardized service tasks can thus be taken over very well by AI. In regard to the service quality dimensions, responsiveness and reliability are dimensions that can be attributed to such lower intelligence tasks. Consequently, we assume that they can be fulfilled better by AI than without AI. Hence, we propose:

H2: AI-based services (vs. non-AI-based services) lead to higher (a) responsiveness and (b) reliability evaluations.

To test our hypotheses, we employed a 2×1 between-subjects experimental design where we manipulated the use of AI in a service interaction. Participants read a scenario in which they were asked to imagine a situation where they are buying a new pair of running shoes in an online store. Both the AI and the non-AI scenarios were self-service situations in which the consumer received assistance in finding fitting shoes based on recommendations. In the AI-based service scenario, the participant was told that AI was employed to make the recommendation. In the other scenario, the same situation was described but no AI was mentioned regarding the recommendation. Participants were randomly assigned to one of the scenarios, and were instructed to read the scenario description carefully and place themselves in the role of the consumer in this service encounter. Next, participants were asked to indicate how they would evaluate the service quality, in particular the responsiveness, reliability, assurance, and empathy of the described service interaction. The scales for these constructs were slightly adapted to fit the context of the scenarios.

In total, 165 participants took part in the study. An analysis of variance confirmed that the employment of AI in services leads to a significantly lower perceived assurance of such services compared to those without AI, thereby confirming H1a. Similarly, we found that empathy of services was also perceived to be lower in AI-based services, which supports H1b. However, in contrast to our assumption, services' responsiveness and reliability were not perceived as significantly higher by consumers when AI was implemented in a service (vs. without AI). H2a and H2b could therefore not be supported. Instead, we found that the dimensions of responsiveness and reliability were actually perceived to be significantly lower when AI was employed in a service.

In summary, across all four dimensions, consumers assess the quality of a service to be significantly lower when they are AI-based. These results confirm our assumption regarding the two dimensions assurance and empathy. However, regarding the dimensions responsiveness and reliability, we find that the results are contrary to our assumptions. These results imply that consumers believe that incorporating AI into services leads to a lower service quality compared to services without AI. This has considerable implications for companies that are using or planning to use AI in their services as companies need to assess whether the benefits of using AI compensate for a lower perceived quality of their services. Thus, companies like Amazon should rethink if it is advisable to promote their use of AI for their services. The results of this study also provide a basis for future research regarding service quality of AI-based services. Future research should expand this study's results by including possible moderating factors such as individual characteristics or service context.

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29. Impact of Robot Companions on Customer Experience and Restaurant Service Outcomes in Dining Contexts

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Introduction

Recent trends in Western societies show an increase in solitary dining, influenced by aging populations, social isolation, and shifting lifestyles. Prior research (i.e., de Castro 1994, Herman et al 2003) indicates that dining with companions can lead to a significant increase in food intake, a phenomenon supported by social facilitation theory, which suggests that the presence of others enhances eating behaviour, especially when the companion is a close friend or relative. However, some studies propose that dining in company can also suppress eating due to the desire to make a positive impression, a concept rooted in impression management theory (i.e., Baumeister et al 1989, Herman et al 2003).

The advent of social robot introduces a new variable into this dynamic, expanding robots' roles from task-oriented to companion roles in human interactions across various settings. This study explores the impact of robotic companions on dining experiences, focusing on consumer satisfaction, wellbeing, and business outcomes like amount of spending and of tip. It delves into the attributes of social robots—appearance, gestures, communication, and voice—and their potential to enhance service quality and customer satisfaction in restaurants. Highlighting the relevance of anthropomorphic features, the study investigates the congruence between a robot's social cues and its effectiveness in improving the dining experience, paving the way for a deeper understanding of human-robot interactions in the hospitality sector.

Background Literature

Social Response Theory provides insight into human-technology interactions, suggesting people inherently treat robots as social actors, an interaction amplified by anthropomorphism where robots with human-like features are seen as socially engageable (Barley et al., 2022; Huang and Lin, 2011). The concept of “commensality” illustrates the social benefits of integrating digital technology into dining, enhancing the experience through shared meals (Spence et al., 2019; de Kervenoael et al., 2020). Reactions to social robots in hospitality have varied, with some studies highlighting their potential to enrich customer experiences through empathy and information (de Kervenoael et al., 2020), while others note negative perceptions due to their strange anthropomorphism (Khoa and Chan, 2023). This mixed response underlines the complexity of consumer reactions and the importance of aligning robots' visual, vocal,

and verbal cues with customer expectations. Anthropomorphism plays a significant role in consumer behaviour, with human-like traits in robots and virtual assistants affecting perceptions of competence and satisfaction (Pizzi et al., 2023; Balakrishnan et al., 2022). However, its effectiveness varies, sometimes leading to negative outcomes, especially under negative emotional states or in business-to-business contexts (Fotheringham & Wiles, 2022; Cronic et al., 2022). Despite challenges, anthropomorphic technology often fosters positive consumer interactions. The literature distinguishes between hedonic and utilitarian values in robotics, affecting consumer interaction and satisfaction. The congruence between a robot's features and conversational content is crucial (e.g., Botti and McGill 2011; Longoni and Cian 2022). Studies on customer satisfaction emphasise meeting or exceeding expectations, with human-like robots eliciting empathy and expertise, thereby enhancing satisfaction (Schuetzler, Grimes, and Giboney, 2020; Klein and Martinez, 2022). This is confirmed by preferences for natural, human-like interactions with robots (Ciechanowski et al., 2019; Jiang et al., 2022). Robotic companions also positively impact affective wellbeing, reducing loneliness and enhancing the dining atmosphere (Broadbent, 2017; Li, Rau, and Li, 2010). Their influence extends to economic outcomes like amount of spending and of tip, emphasising their hedonic value (Khoa & Chan 2023; de Kervenoael et al., 2020). Furthermore, word-of-mouth (WOM) and revisit intentions underscore the lasting effects of robotic companions on customer loyalty and business returns, highlighting the benefits of positive robot interactions (Daugherty and Hoffman, 2014; Zhang, Wu, and Buhalis, 2018).

Aims of this research

Building on this comprehensive literature review, the overarching aim of this research is to empirically investigate the impact of robot companions on the dining experience from a holistic perspective, considering both consumer-cantered and business-related outcomes. Specifically, this study seeks to:

Assess the Effectiveness of Robotic Companions: To evaluate how the presence of robot companions in dining settings influences consumer behaviours, including eating habits, amount of spending and of tip, and their willingness to revisit the establishment.

Examine Consumer Satisfaction and Wellbeing: To explore how interactions with robot companions affect diners' overall satisfaction and affective wellbeing, especially in the context of solo dining experiences.

Investigate the Role of Anthropomorphic Features: To analyse the influence of anthropomorphic features (such as visual appearance, gestures, voice, and verbal communication) of robotic companions on enhancing the dining experience.

Explore the Congruence Between Robot Attributes and Consumer Expectations: To determine the importance of alignment between a robot's social cues (visual, voice, and verbal) and diners' expectations in improving service quality and customer satisfaction.

We plan to conduct an online survey using a panel company to achieve the aims of the study.

Intended contributions

This study intends to make pivotal contributions across both theoretical frameworks and practical applications within the hospitality industry, focusing on the integration of robot companions in dining settings.

Theoretical Contributions

Enhancing Social Response Theory: It will deepen understanding of human-robot interactions, particularly how anthropomorphism influences diner engagement with robotic companions.

Congruence in Human-Robot Interaction: This research will provide empirical insights into the impact of attribute congruence (appearance, voice, behaviour) on diner satisfaction.

Practical Contributions:

Design Guidelines for Robotic Companions: Findings will inform the design of robot companions, emphasising anthropomorphic features with customer expectations to enhance dining experiences.

Operational Insights:

The study will explore the operational and economic implications of robot companions, offering strategies for improving efficiency and customer satisfaction.

Personalisation through Technology:

Insights into using AI for personalised diner experiences will be provided, highlighting ways to improve customer engagement and loyalty.

By bridging theory with practice, this study intends to contribute significantly to the knowledge and application of robot companions in enhancing the hospitality industry's service delivery.

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30. Value-centric approaches to SME internationalization through the Metaverse

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Extended abstract

In recent decades, the internet has profoundly reshaped both the economy and society, necessitating businesses to adapt to be able to compete, thus, change is essential, involving the embrace of new ideas and technologies like the emerging Metaverse (Tian et al., 2017).

The Metaverse is currently being defined, physically and figuratively. It relates to a three-dimensional virtual world beyond the physical world, where avatars engage in political, economic, social, and cultural activities (Dolata & Schwabe, 2023; Park & Kim, 2022). It is a decentralized ecosystem that offers a fully immersive virtual experience, promoting real-time communication, global connections, and shared experiences across various platforms and devices (Dolata & Schwabe, 2023). Companies like Decentraland and Fortnite are heavily investing in the Metaverse, with McKinsey & Company (2022) estimating its value to reach \$5 trillion by 2030.

As the most common type of business in the world, Small and Medium-Sized Enterprises (SMEs) have to leverage new technologies to remain relevant and be able to compete especially when internationalizing their business, as they create more than 95% of jobs and 60%-70% of the employment, while also being the main contributors to gross domestic product and innovation (Garcia-Martinez et al., 2023). Therefore, there is a lot of potential for SMEs to take advantage of this technology, especially because the Metaverse offers numerous business opportunities by bridging the physical and digital worlds, thereby creating, capturing, and delivering value to its stakeholders which can significantly enhance a firm's competitive advantage (Bruni et al., 2023; Mancuso et al., 2023).

As part of its business opportunities through its "phygical" approach, the Metaverse enables firms to create a mixed offering, promoting a "Metaverse-to-offline" method, combining physical and virtual channels for mixed interaction (Mancuso et al., 2023). It also provides mass customization opportunities, allowing firms to analyze vast amounts of data in order to personalize their offerings increasing customer engagement and satisfaction (Mancuso et al., 2023). The Metaverse also enables superior knowledge management, improving firms' overall performance and competitiveness (Dwivedi et al., 2022). It enhances internal and external communication through hand gestures and body movements, fostering social inclusion, creativity, and productivity (Chen & Yao, 2022; Lee & Kim, 2022). Thus, this technology can significantly impact distribution channels, business models, marketing mix, and competitive dynamics between traditional and virtual businesses (Bruni et al., 2023).

Nevertheless, when expanding into new markets, SMEs can enhance sales, profitability, and market share by capitalizing on economies of scale leading to a competitive advantage (Fonseca et al., 2023). However, they often encounter internationalization challenges that relate to their difficulty in creating, capturing and delivering value which

includes resource limitations, limited access to networks and technologies due to their small size, geographical disadvantages, demand fluctuations, and inherent barriers such as language and cultural differences, as well as issues related to international collaboration (Koprivnjak et al., 2021; Lobo et al., 2020; Lu & Beamish, 2001; Reim et al., 2022).

Therefore, this study explores the potential of the Metaverse in helping SMEs expand their international presence and address challenges in creating, capturing, and delivering value to stakeholders, thus strengthening competitiveness. The existing literature on the Metaverse in strategic management primarily focuses on technical aspects or specific sectors, resulting in a research gap, especially concerning SMEs' internationalization. By addressing this gap and linking SMEs' internationalization challenges with Metaverse utilization, this study contributes to strategic management and international business research, with broader applicability. The study develops a framework illustrating the potential of the Metaverse to assist SMEs in managing internationalization challenges by creating, capturing, and delivering value.

The study utilized the Delphi method, a quantitative approach, to validate, among leaders of SMEs and experts in international management and the Metaverse, this framework. This method benefits the present study as it provides a structured and organized context for gathering expert opinions and minimizing biases and inconsistencies (Linstone, 1975). The Delphi method can also provide a more comprehensive view of a topic than would be possible from a single expert since it draws upon the collective knowledge of a panel (Hsu & Sandford, 2019). This method consisted of three rounds: one interview, one questionnaire right after the interview to collect feedback and improvement suggestions, and, a few weeks later, another questionnaire to validate the final framework after all the necessary improvements.

The findings of this study provide valuable insights for both academic researchers and practitioners. The study anticipates that the Metaverse has the potential to enhance resource management for SMEs, leading to financial stability, operational resilience, and market adaptability. It achieves this by enabling efficient resource management through tokenization, complementarity, and diversification of products or services, while also expanding market access. Furthermore, the integration of mass customization and the integration of physical and virtual channels through the Metaverse can help businesses overcome marketing challenges. Mass customization allows firms to better understand customer preferences and co-create products, leading to increased satisfaction and loyalty. By combining physical and virtual channels, businesses can improve distribution strategies and provide seamless customer interactions. Moreover, access to Metaverse information enables firms to analyze data that helps navigate the regulatory frameworks and legal systems, allowing them to adjust strategies with minimal costs. Additionally, the platform assists SMEs in addressing inherent internationalization challenges and international collaboration by facilitating cultural exchange and enhancing supply chain efficiency through the reduction of intermediaries. Furthermore, the Metaverse aids in managing demand fluctuations and predicting consumer preferences by simulating scenarios and testing virtual experiences. This approach also enables the assessment of new product ideas and features for real-world markets. Finally, the integration of knowledge management with Metaverse technology can lead to the development of a customer-centric business model.

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31. Understanding User Privacy Concerns in the Metaverse

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Extended abstract

Introduction

Recent technological advancements in XR (extended reality), VR (virtual reality) and AR (augmented reality) have led to the development of the so called Metaverse; a paradigm shift in information technologies where the combination of VR headsets, blockchain and avatars are merging the physical and virtual world (Shin & Kang, 2024). The metaverse promises a vast range of opportunities, that will transform business models and operations of businesses and organisations in industries such as marketing, tourism and hospitality, health, and education among others (Dwivedi et al., 2022). From socializing, building digital connections and communities, to experiencing immersive shopping, virtual reality tours in hotels as well as attending events (e.g., music concerts) without having to be in the actual physical space; the metaverse brings a plethora of activities that can benefit consumers and accrue significant value.

However, such benefits are also associated with numerous challenges and concerns, associated with ethics, safety, privacy and security that can have detrimental impact on users emotional as well physical well-being (Dwivedi et al., 2022). The information being collected in the metaverse is happening at a very large scale, including sensitive biometric data, such as facial image and iris/retina, users' movements, breathing, and pacing among others. This data collection is involuntary and can be considered by users as rather intrusive; thus, triggering users' privacy concerns that can reduce consumer trust and in turn hinder adoption and use of such platforms. Prior research suggests that users with higher privacy concerns show lower trusting and higher risk feelings towards online providers that can significantly affect future behavioural intentions (Ioannou, Tussyadiah, & Miller, 2020). As it stands, research on the metaverse is still in its infancy. Addressing the gaps in prior research, the present study aims to better understand users' privacy perceptions in the metaverse by investigating their impact on trust and risk beliefs in online companies in the metaverse. The study offers important implications both to theory and practice.

Methodology

A mixed-method approach was undertaken, adopting a sequential exploratory approach; in Study 1 we adopted a quantitative approach followed by a qualitative investigation in Study 2. In Study 1, the aim was to identify the impact of privacy concerns and metaverse experiences, on trust, and risk beliefs in companies in the metaverse. While in Study 2, we aimed to explore in more depth the underlying relationships between privacy concerns and trust/risk beliefs.

Quantitative approach

Study 1 included an online survey, targeting UK and US residents in October 2023. Participants were recruited through the online recruitment platform Prolific. After data cleaning the usable sample size was N=292. All constructs were adopted and adapted from existing literature. For privacy concerns, the instrument was adopted from (Smith, Milberg, & Burke, 1996). For Trust, items were adopted from (Benamati, Ozdemir, & Smith, 2017). For Risk, items were adopted from (Keith, Thompson, Hale, Lowry, & Greer, 2013). For metaverse experience, items were adopted from (Frambach, Roest, & Krishnan, 2007). All items were rated on a 5-point Likert scale. Demographic characteristics were also obtained regarding age, gender, and education of participants.

Qualitative approach

In Study 2, two focus groups were conducted with UK residents in February 2024. Participants were recruited through social media, aiming to recruit participants who have used any metaverse platform during the last 12 months. A question guide was developed before the implementation of the focus groups, aiming to better understand (1) users' current usage and purpose of metaverse platforms, (2) user privacy perceptions in the metaverse and in the physical world, (3) data sharing behaviours and sensitivity of different types of data.

Preliminary Results and Conclusion

Grounded on prior privacy literature, this study aimed to better understand users' privacy concerns in the metaverse and their subsequent impact on trust, risk beliefs with online providers in the metaverse. Preliminary results reveal the profound role of trust in consumer-business relationships. Metaverse privacy concerns show a significant positive relationship with trust while a negative relationship with risk; while prior user experience with metaverse platforms shows a significant positive association with metaverse privacy concerns. Users report to be, on average, highly concerned about their privacy in the metaverse and show low levels of trust towards companies in the metaverse; however, they seem to be mostly unaware of what types of data are being collected by digital immersive platforms.

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32. Breaking Barriers: Towards the Inclusive Metaverse

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Keywords: metaverse; digital inclusion; consumer wellbeing; digital exclusion

Extended abstract

The Metaverse as a fundamentally enhanced experience of reality redefines the notion of possibility and allows individuals to engage in activities that transcend the constraints of the physical world. Within the Metaverse, individuals can float, soar, and spiral (e.g., in Spatial gravity games), visit tourist destinations and travel back in time without leaving home (e.g., by using apps like Wander), and experiment with their appearance and identity in ways that diverge from reality (e.g., by utilizing customizable avatars). Participating in Metaverse activities can bring a variety of positive impacts on different dimensions of consumer wellbeing, including on their *financial wellbeing* (e.g., reduced cost due to eliminating the need to travel), *emotional wellbeing* (e.g., increased feeling of connectedness to co-workers in case of immersive remote work) (Golf-Papez et al., 2022), and *physical wellbeing* (e.g., reduced pain experienced by cancer patients who participated in an immersive VR experience) (Koronka, 2024). As technology progresses and integrates even further into our personal, social, and professional lives, it is important to ensure that everyone has a chance to participate in the Metaverse and that their experience is designed in a wellbeing-friendly way.

Despite the Metaverse at its conceptual core holding promise to be a space where boundaries get dissolved, there is a growing concern that the development of the Metaverse could exacerbate existing inequalities, widening the digital divide and further excluding marginalized individuals and communities. This concern is underscored by recent reports from Metaverse participants, indicating that avatars fail to represent the identities they want to express (Mahlich, 2021), that avatars with dark skin tones tend to sell for less than those with fair skin (Egkolfopoulou & Gardner, 2021), that only the most dedicated early adopters can afford new tech, such as, the Apple VR headset Vision Pro (Greenwald, 2024) and that some intricate physical movements, integral to VR experiences, cannot be performed by individuals with limited mobility (Geerts et al., 2021; Othman et al., 2024). Such examples, arguably leading to a limited and less enjoyable customer experience, suggest that there are numerous factors, contributing to exclusion within the Metaverse. By systematically mapping these barriers we can pave the way for a more equitable Metaverse and more inclusive and meaningful “synthetic experiences” (Golf-Papez et al., 2022).

In the light of the lack of research on this topic, this paper aims to explore the nature of exclusion/inclusion in the context of the Metaverse, where inclusion is about ensuring that everyone has the opportunity to fully participate in Metaverse activities and experiences and benefit from the opportunities that it offers without compromising their well-being. Our specific research questions are: (1) *What are the forms of (perceived) exclusion from and within the Metaverse and who does that impact on?* (2) *What is the interplay between exclusion/inclusion and the different dimensions of consumer wellbeing?* To answer these questions, we are conducting an (1) integrative literature

review, which is a well-suited method for conceptualising new, emerging topics (Snyder, 2019) and (2) collecting and analysing archival data (Fischer & Parmentier, 2010) on the topic. This qualitative archival analysis includes reviewing websites of Metaverse companies (e.g., Meta, Epic Games), media articles (Factiva and Lexis database. Search terms such as exclusion AND Metaverse, inclus* AND Metaverse), and video/audio archives (e.g., podcasts and YouTube videos on inclusion in Metaverse). Data collection is supported by note-taking to capture the emergent reflections and interpretations. As we analyse the data alongside its collection, we move back and forth between the data and the theory to develop analytical codes pertinent to our research questions.

Our early findings hint at the multitude of ways people can be excluded from and within the Metaverse. Some forms of exclusion mirror those found in traditional virtual environments (e.g., limited representation in avatar selection and customization). In contrast, certain forms of exclusion take on new dimensions within the Metaverse (e.g., online trolling and harassment may feel more personal and impactful). Furthermore, the Metaverse introduces novel forms of exclusion that are typically not considered in other types of environments, such as reduced or limited ability to fully immerse in Metaverse experiences. Diverse examples of exclusion that we have identified so far suggest that the concept of exclusion in the Metaverse extends beyond considerations of disabilities, race, and socioeconomic status, and are consistent with exclusion as a dynamic concept requiring a longitudinal perspective (Keeling et al., 2019). That is, any one of us is at risk of being excluded from and within the Metaverse at some point in time and in some way.

As we progress with our data collection and analysis, we will provide actionable insights for shaping an environment that has the potential to be inclusive and wellbeing-friendly for all users. Unlike the case of preceding digital technologies (e.g., the Internet), these considerations for inclusivity and wellbeing can be integrated from the start of Metaverse development rather than as an afterthought.

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33. The UNWTO code of ethics and the role of technologies in the tourism industry: how do they align: a case study on medical/health tourism?

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Type of manuscript: Extended abstract

Keywords: tourism; ethics; technology

Extended abstract

Research objectives and methods

Regenerative technologies such as AI and Blockchain are currently changing the way of working in the tourism industry. This leads to the rise of users as early adopters, whose responses differ from businesses stakeholders that later follow this trend in the technology adoption. Envisioning new implementations and the future of technology adoption in this regard (Xiang, 2018), it serves therefore an objective of this paper to assess if the UNWTO code of conduct for responsible tourism are in line and safeguarded with these technological advancements.

The paper serves as a theoretical and conceptual approach into the relationship between tourism and arising technologies. The paper aims to analyze for a relevant sample of principles, i.e. what might be the positive and negative influence into the relationships of tourism and continuous development of these technologies. The ethical principles 1 (mutual understanding between societies), 5 (tourism as a beneficial activity for communities), 6 (stakeholder obligations in tourism development) and 9 (right to workers in the tourism industry) will be examined and judged upon the resilience towards these arising technologies

Findings

It is certain that these technologies will impact on the tourism industry system. Furthermore, Stankov (2020) also indicates the 4.0 industry development brings about a risk potential, not only for industry itself but also having an impact on the tourism workforce and its wellbeing (Rydzik, 2021). This technological shift will be in need of anti-disciplinary thinking, opening new paradigms and mindsets to other possibilities (Sigala, 2018).

How do technologies interfere with (1) mutual understanding between societies

AI as a new form of digital technology can positively influence in which way a tourist would behave and predict how societies work. The use of Extended realities (Augmented Realities/Virtual Realities/Mixed Realities) in the learning activities is one of positive approaches to interactively illustrate historical knowledge and culture of distant societies. We can ask ourselves the question if technology can aid the cultural understanding of the identity of another society or region you visit as a tourist. A number of museal experiences are created using VR/AR technology to attract diverse audience in order to learn about art and cultural significances. Milwood et al. (2023) observe the impact of AI on societies several topics such as privacy and bias, protection

and transparency, dehumanization and sustainability, inclusion and safety and policy and legal matters. Tussyadiah (2020) points out the benefits and risks of intelligent automation that leads to decreasing quality of life in the society, especially in the tourist destinations.

How do technologies interfere with (5) Tourism as a beneficial Activity for communities

The roles of digital technologies affect local communities in tourism destinations in different domains. First and foremost, digital technology influence job creations and enhance the economic impact in the destinations. From online booking platforms, digital marketing, and startups creation, technological intervention in tourism business accelerate job opportunities and flux of human capital. Digital technologies also spur on the creation of sustainable Practices (Loureiro & Nascimento, 2021), enhance visitors' cultural experiences and connect with urban and rural landscapes (Permatasari et al., 2023), communicate significant values of cultural heritage, and support community engagement through virtual and physical realm (Koliouska & Andreopoulou, 2023). Several digital tools such as IoT and the use of sensory devices enable responsible tourism practices, such as eco-friendly tourism offers, waste reduction, and environmental conservation connected with tourism activities. On the other hand, technology disruption may pose certain challenges such as reduced sense of belonging in communities due to pervasive online interactions and privacy concerns in the use of digital data.

How do technologies interfere with (6) Stakeholder obligations in tourism development?

The roles of stakeholders provide a big deal in shaping tourism development. Local communities, government agencies, enterprises and individuals play crucial roles in influencing tourism policies, infrastructure development, and marketing strategies, including digital technology applied therein. Their involvement in tourism policies determines the level of digital technology integration and the connection between destination development and visitor experience. Building a tourism community does not only limited to a physical site. The development of Metaverse, a shared virtual environment merging of digital and physical reality, is used to investigate stakeholder expectations in Sicilian territories (Fazio et al., 2023).

How do technologies interfere with (9) Right to workers in the tourism industry

The ever evolving digital technologies does have an impact on the job markets. Notably, some job content in local communities have been and would be replaced by automation technologies such as chatbots and AI/Blockchain technologies. There are two sides identified with regards to these developments. The rapid development of these technologies provide positive added value for tourism professionals to perform tasks more efficiently and fluent. However, digital technologies reduce tasks and duties, which is resulted in the alternation or even diminution of tourism personnel. Webster and Ivanov (2022) indicate that the phenomenon of robophiles and robophobes in tourism and hospitality, which highlight the managerial implications represented in favourable attitude towards or against the robotization in these sectors.

How do we observe these technologies arise in the field of medical tourism?

A recent development in medical tourism is the smart healthcare system (SHS). This system includes the use of several technologies to optimize the processes that take place in this sector in dealing with medical tourists, such as telemedicine, Blockchain and

cloud technology (Hafizalluh & Kirti, 2022). Also in health tourism 'intelligent automation' could help to improve service quality, consumer experience and a automated future in this sector, such as for example AI applications in health tourism (Wang et al., 2022). Even IoT could be placed within the framework of health tourism, through wearable sensors and cloud computing. The question lies, however, how these developments impact on ethical perspectives in this sector? The advance integration of digital technologies also benefit health tourism sectors. Wellbeing tourism and medical tourism are seen as purposive tourism activities that immensely use different types digital technologies and AI (i.e. wellbeing apps, gamification, wearable devices, etc.) to cater for personalised service to the tourists (Panyadee et al., 2023).

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34. User Sentiment in Online and In-Person Airbnb Experience Reviews

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Type of manuscript: Extended abstract

Keywords: user generated content (UGC); Airbnb experience; sentiment analysis

Extended abstract

In response to tourists' growing demand for personalized travel experiences and the increasing utilization of internet and digital technology, a diverse range of peer-to-peer (P2P) platforms offering tours and activities have surfaced in recent years (Pung et al., 2022). These platforms, including Airbnb, a unicorn company with a transformative impact on the economy (Cristofaro et al., 2023) have expanded their services to meet the desire for more immersive and exciting travel experiences.

This trend has led to the emergence of tours and activities that enable tourists to connect with local, non-professional individuals, offering a more authentic experience (Seyitoglu & Atsiz, 2023). Despite extensive research on traditional P2P accommodations and experiences with professional tour guides, there remains a gap in studies that specifically examine tourist satisfaction and evaluation of local-led tours on P2P online platforms (Zhang et al., 2023). Moreover, virtual tourism experiences (VTEs) have seen limited exploration in research, particularly in defining and understanding web-based virtual tours (Cho et al., 2002).

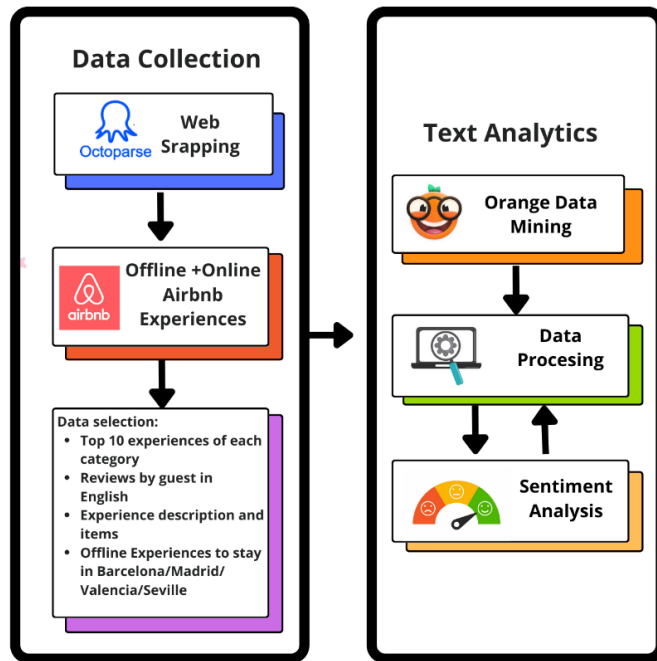
The launch of 'Online Experiences' in 2020 in response to travel restrictions due to the pandemic further demonstrates Airbnb's adaptability and innovation. These virtual experiences enable users to enjoy activities from their homes (Cenni & Vasquez, 2022) and are categorized into 17 main groups and available in 14 languages.

People are now able to explore the seven wonders of the world remotely from the comfort of their homes (Hwang et al., 2023). The study aims to analyze the sentiment of offline experiences in Barcelona and online experiences worldwide.

Airbnb began in 2008 as a low-cost accommodation alternative, offering lodging in a home-like environment within the peer-to-peer (P2P) sharing economy. In November 2016, following its success in providing alternative lodging options, Airbnb expanded its services to foster interactions between tourists and locals. They introduced "Experiences," a feature that allows travelers to connect with local guides for culinary gastronomy and nature-based activities (Moro et al., 2019). Currently, Airbnb's platform offers 8 of categories, available in 31 different languages and a wide price range.

All reviews were scraped in January 2024 using Octoparse. Figure 1 shows the steps we undertook to extract the final dataset.

Figure 1. Diagram illustrating the APIs and tools utilized in reviews content



For the selection of the study's comment sample, we employed a hybrid of criteria from Cenni & Vasquez (2022) and Moro et al. (2019). We chose the top 10 experiences with the most comments from each category. The comments were filtered to include only those in English and containing more than 10 words. To enhance clarity and facilitate comparisons, we have consolidated the categories into five distinct groups: Wellness, Tours, Entertainment, Cooking, and Art & Culture. The core of the study lies in the sentiment analysis of the collected content. Orange Data Mining has been used to analyze sentiments with the Vader method (Valence Aware Dictionary and Sentiment Reasoner), which classifies the polarities of emotions in opinions using a lexicon (Long et al., 2023). Building on the sentiment analysis of online reviews, it is critical to explore how these reviews impact consumer engagement (Bozkurt et al., 2021) and perceptions of brands (Srivastava, 2019) that offer services, whether online or in-person. The data includes a total of 66 experiences from Barcelona, accumulating 46,064 reviews. And the 147 online experiences comprise a total of 94,974 reviews.

Figure 2. Sentiment Analysis of both types of Experiences in Airbnb

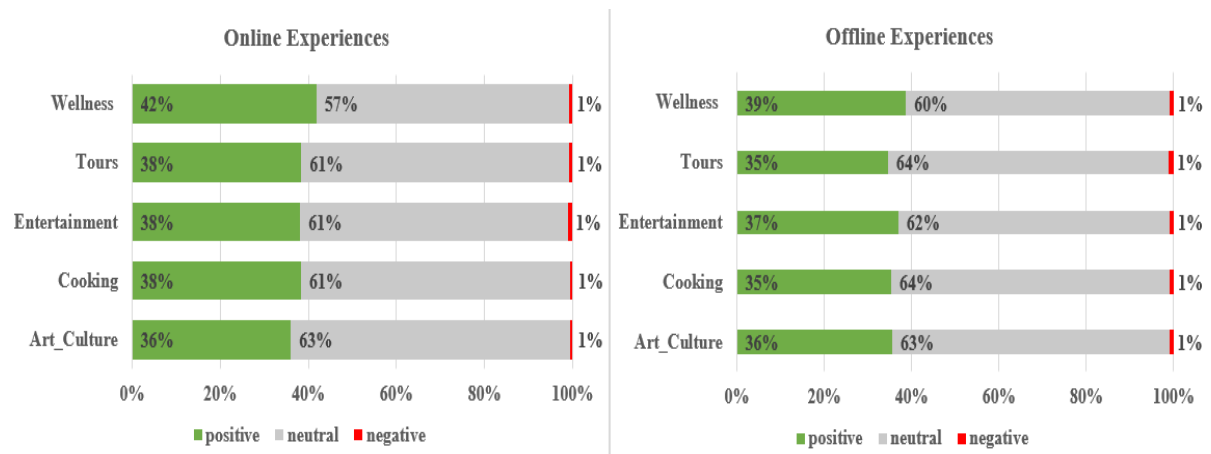


Figure 2 presents a comparative analysis of the sentiment associated with the top five categories based on the type of experience offered. There is a similarity in the percentages, with neutral comments prevailing at 60%, followed by positive feedback at 39%, and a minimal expression of negative remarks at 1%. This reflects the high standard of service that Airbnb provides in both face-to-face and online experiences. It is important to highlight that, in both modalities, the category most noted for its positive sentiment is 'Wellness'. This includes activities such as sports learning and meditation, which can be conducted virtually via a screen or, in the case of Barcelona, at locations like Barceloneta Beach.

Even though these online experiences are conducted through a screen, they obtain levels of positive sentiment comparable to in-person experiences. This similarity may stem from the convenience and accessibility of online experiences, the ability to choose more targeted and personalized activities, or potentially from a reduced likelihood of disappointment due to the lesser investment of time and effort compared with attending an experience in person.

This study addresses a gap in the current research by focusing on how users perceive Airbnb experiences, both in-person and online. By applying a detailed and accurate method for assessing the sentiments expressed by users, the findings reveal that, regardless of the mode of experience, neutral and positive opinions predominate. Moreover, the results suggest that virtual experiences can offer satisfaction levels comparable to physical experiences, thereby highlighting the importance of factors such as accessibility and personalization in the user experience. In future research, more detailed social listening could be conducted on sentiment analysis related to topic modelling, genres, engagement metrics, and an expansion of emotional variables to detect issues, plan marketing strategies, and understand customer engagement and satisfaction.

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35. Coping with immersive negative employer ratings: An employee perspective

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Keywords: employee rating platforms; negative word-of-mouth; moral disengagement

Extended abstract

Introduction

Online reputation systems (ORS) are large-scaled Internet platforms that collect, distribute, and aggregate feedback and word-of mouth (WOM) about products, services or companies as such (Dellarocas 2003). Although there is a wide range of marketing and business research on ORS, the vast majority of extant studies focusses on consumer reviews of products and services and associated electronic WOM (e.g., Pavlou and Dimoka 2006; Gauri et al. 2008). Largely neglected, however, are reviews by and for employees (Schaarschmidt et al., 2021; Yoganathan et al., 2021). Being a subcategory of ORS, employee rating platforms enable current or former employees to evaluate their employer, giving worker WOM a digital room (Satzger and Vogel, 2023). The basic idea of such a rating platform is that job seekers can acquire firsthand knowledge on the organization (Dabirian et al. 2016). However, WOM on employer rating platforms also reaches the company's current employees. This fact, which is widely neglected by extant research, appears to be crucial, as these reviews often offer opinions and experiences that are withheld in daily work life, and could severely influence employees' perceptions of their job, their coworkers and the entire organization. Accordingly, review-created WOM on employer rating sites could have a crucial influence on organizations that goes beyond the attraction (or repulsion) of potential employees. To address this research gap, we aim to explore how employees cope with fear of interpersonal conflicts at work as a consequence of negative employee reviews. We further assume that employees' coping strategies have effects on their turnover intentions and off-job recovery. From a theoretical strand, this study uses Lazarus and Folkman's (1984) transactional model of stress and coping to unravel how employees cope with negative WOM-induced stress caused by other employees.

Background

Stress is defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus and Folkman 1984, p. 19). In previous literature, stress has mainly been investigated concerning the relationship between

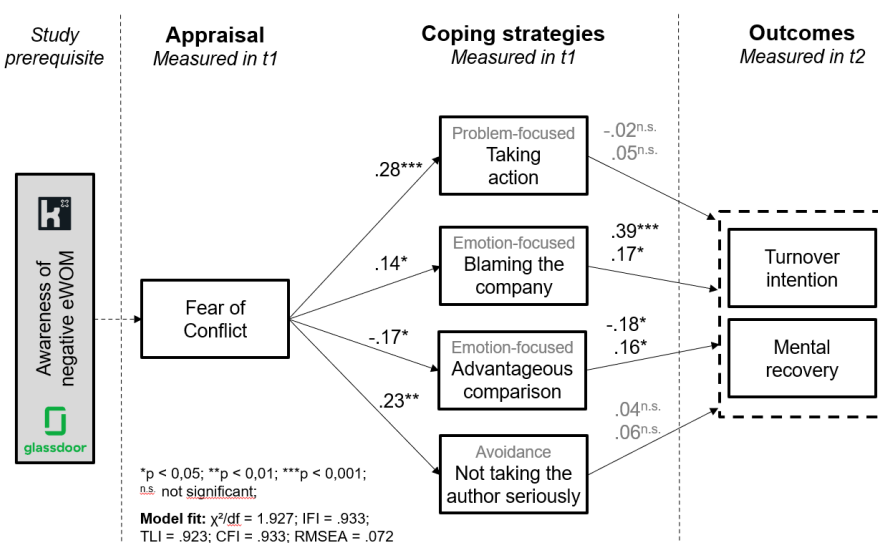
individuals' perceived level of stress and related outcomes, such as interpersonal conflict and job satisfaction (Jena 2015). In this study, we focus on interpersonal conflict as a form of stress (primary appraisal) that results from negative WOM by other employees. Problem-based and emotion-based coping are typical strategies to cope with review-induced stress.

A second theoretical stream with links to this research is moral disengagement theory. Moral disengagement theory (MDT) is grounded in social cognitive theory and provides a useful theoretical lens to understand why people are able to engage in socially inappropriate behavior while nevertheless perceiving their behavior as ethical (Bandura 1989). In the workplace, moral disengagement neutralizes employees' feelings of guilt which can lead to deviant work behaviors (Akhtar et al. 2023). Examples of bad or immoral behavior include undermining colleagues, organizational corruption, workplace misconduct, and social loafing (Ogunfowora et al. 2022; Newman et al. 2020). According to MDT, individuals curb a sense of dissonance and reconcile their unethical behavior by invoking a series of beliefs that vindicate their immoral behavior. In our study, we focus on "attribution of blame" (i.e. blaming the company) and "advantageous comparison" (i.e. in other companies it is even worse) as forms of moral disengagement and also include problem-based or -focused coping as well as avoidance. Both theory streams help in developing a model that explains how negative WOM-induced stress leads to employees' turnover intentions and off-job (mental) recovery. Specifically, we posit that awareness of negative online reviews induces fear of interpersonal conflict at work, which in turn affect problem-based, emotion-based, and avoidance coping (see Figure 1)

Methodology

To test the set of hypotheses, we conducted a time-lagged predictive study with 188 employed respondents (39.9% female, $M=34.9$, $SD=10.6$) recruited via the crowdsourcing platform Clickworker. As a requirement, respondents needed to have read at least one negative review about their employer in the last six month. (The period of six month had emerged from a pretest with $N=74$ software developers.). We used established scales and Likert-Scales throughout the survey (excluding demographics and controls). We measured all variables of interest in t_1 and received 348 responses. About one week later, all participants were invited to share their evaluations of turnover and mental recovery again, which led to the sample of 188 respondents.

Figure 1. Conceptual model



Results and Discussion

A CFA revealed that the data is appropriate for further investigations (e.g., convergent and discriminant validity is given). The results (based on AMOS with maximum-likelihood estimator, Figure 1) indicate that fear of interpersonal conflict relates to problem-based coping ($\beta = .28, p < .001$), forms of emotion-based coping (i.e. moral disengagement; $\beta = .14, p < .05$ for “blaming the company”, and $\beta = -.17, p < .05$ for advantageous comparison), and avoidance ($\beta = .23, p < .01$). However, surprisingly, problem-based coping has no effect on turnover intentions and off-job recovery. Only emotion-focused coping strategies relate significantly with the outcomes. For example, advantageous comparison has a negative effect with turnover intention ($\beta = -.18, p < .05$) and a positive effect on off-job-recovery ($\beta = .16, p < .05$) while blaming the company has positive effects on both turnover intention ($\beta = .39, p < .001$) and mental recovery ($\beta = .17, p < .05$).

Contribution

To the best of our knowledge, this study is among the first that studied the effect of negative employee WOM on other employees instead of customers or job seekers. We are confident that the results have the potential to shed new light on the consequences of immersive electronic WOM on employees.

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36. The elitist vision of Spain and Turkey: luxury tourism analysis through a network approach

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Keywords: hospitality image; network analysis; Tripadvisor

Extended abstract

This study provides a comprehensive analysis of luxury tourism through the lens of user-generated content on the digital platform Tripadvisor, highlighting the growing importance of online reviews in the hospitality industry and focusing on the cognitive, affective, and conative images as experienced by guests. The study emphasizes the significance of understanding these dynamics, particularly in the context of luxury hotels in Spain and Turkey, which present contrasting cultural and geographical landscapes that influence guest perceptions. The research delves into the cognitive image, emphasizing guests' beliefs and knowledge about hotel attributes, and identifies key factors that contribute to the overall hospitality image. The affective image analysis explores the emotional responses elicited by the hotels, while the conative image examines guests' behavioral intentions, such as recommendations and revisit intentions.

The literature review explores the critical role of cognitive, affective, and conative dimensions in shaping the hospitality image of luxury hotels. It highlights how guests' beliefs and knowledge about a hotel's attributes (cognitive image), emotional responses to their experiences (affective image), and subsequent behavioral intentions, such as recommendations or repeat visits (conative image), interact to form a comprehensive perception of luxury hospitality. Various studies are discussed, illustrating how these dimensions influence guest satisfaction and loyalty, emphasizing the importance of aligning hotel services with guest expectations. This segment underscores the necessity for luxury hotels to strategically manage these elements to enhance their competitive edge in markets like Spain and Turkey, focusing on the integration of tangible quality and emotional engagement to foster positive guest experiences and advocacy.

To assess the hospitality image projected by luxury hotels in Spain and Turkey, the methodology used in this study involves a detailed network analysis of Tripadvisor reviews. This approach involves scraping all reviews of 5-star hotels in both countries. This provides a rich dataset for analysis. After several weeks of indexing and downloading, the download has allowed to obtain reviews of 205 Spanish hotels and 412 Turkish hotels, which has allowed to develop the statistical analysis with 153,686 reviews of Spanish hotels and 262,934 reviews of Turkish hotels. The methodological framework focuses on analyzing these reviews to extract data on cognitive, affective and conative dimensions. Advanced text analysis and sentiment analysis techniques are used.

The main findings from the analysis of Tripadvisor reviews reveal notable differences in the hospitality images of luxury hotels in Spain and Turkey. In Spain, luxury hotels are often praised for their heritage, sophisticated service and luxurious amenities, in line

with traditional expectations of luxury. Conversely, Turkish luxury hotels are valued for their unique offerings that blend Eastern and Western hospitality traditions, often providing novel and culturally rich experiences that appeal to a global audience. The findings also highlight the influence of specific factors such as location, hotel style and how guests interact with hotel staff on the overall guest experience.

The study concludes that guests' cognitive, affective and conative perceptions, as reflected in their online reviews, significantly shape the hospitality image of luxury hotels in Spain and Turkey. These findings validate the proposed theoretical framework and demonstrate the interplay between guests' knowledge, emotional responses and behavioral intentions. The conclusions highlight the critical role of cultural and operational factors in shaping these perceptions and suggest that luxury hotels need to strategically manage these factors.

The theoretical implications of this research contribute to the broader discourse on destination image, particularly by applying the cognitive-affective-conative model in the context of luxury tourism. This application enriches the academic understanding of how luxury hotels can influence guest perceptions through strategic communication and service design. Practically, the study provides valuable insights for hotel managers and marketers on how to use online reviews to refine their branding and operational strategies. It provides concrete examples of how hotels can align their offerings with guest expectations and cultural preferences to promote a positive hospitality image.

The paper also identifies several avenues for future research. It suggests that further studies could broaden the scope of analysis to include a wider range of destinations, which would help to understand whether the findings from Spain and Turkey can be generalized across different cultural and geographical contexts. In addition, in order to build a more comprehensive picture of the hospitality image, it is recommended that more diverse data sources are included, such as social media feedback and direct guest surveys. The potential of integrating advanced analytical tools and techniques, such as machine learning and big data analytics, is also highlighted as a means to better understand the impact of digital transformation on the luxury tourism sector.

37. Metaverse Data Security: Insights on User Perspectives in Learning Activities

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Type of manuscript: Extended abstract

Keywords: metaverse; privacy concerns; users; data; security

Extended abstract

The metaverse has great potential benefits to society (Sethi, 2022), including reducing discrimination, eliminating individual differences, and promoting socialization (Zhao *et al.*, 2023; Canbay *et al.*, 2022). However, this virtual platform has its drawbacks, including data security and privacy risks (Dwivedi *et al.*, 2023; Barrera & Shah, 2023), such as the threat of personal information leakage, data theft, avatar customization (Flavián *et al.*, 2023; Barta *et al.*, 2024), and eavesdropping (Hadi *et al.*, 2023; Sethi, 2022). Indeed, previous research has identified a significant drop in users' intention to use the Metaverse when privacy concerns arise (Cowan *et al.*, 2021). However, studies on users' attitudes and perceptions of personal information security issues and other privacy-related aspects remain limited, and related literature is scarce. Furthermore, privacy concerns have been discussed from several angles, but no standard definition has emerged from the literature (Kowalczyk *et al.*, 2021). Considering that privacy concerns specific to Metaverse users have not been precisely defined, our approach involves an in-depth exploration of the potential concerns of users of this platform regarding the security of their personal data.

This paper aims to (i) explore users' understanding of data security and their related perceptions; (ii) highlight any concerns users may have regarding data security in the future use of the Metaverse; (iii) gather information on elements that may inspire confidence in users, thereby promoting wider Metaverse adoption; and finally, (iv) identify the specific actions and security features needed to make users feel secure when expanding their use of the Metaverse.

At a theoretical level, this research makes an important contribution to existing theories by exploring new dimensions of the concept of users' concern about the protection of their personal data. This research aims to fill the gap identified in the literature and answer the following research questions:

- Q1: How do users understand data security,
- Q2: What concerns do users express about data security in their anticipated use of the Metaverse?
- Q3: What elements contribute to inspiring confidence among users and fostering a wider adoption of the Metaverse?
- Q4: What specific actions and security features are needed to ensure that users feel secure as they expand their use of the Metaverse?

To understand users' perceptions of the security of their personal information on the Metaverse platform, we administered 15 individual, semi-structured interviews to students aged 18–25. This age group was chosen because Generation Z individuals are

pioneers in the active exploration of virtual environments. They have a strong knowledge of new technologies and are more willing to adopt virtual platforms. Our diverse sample, comprising 71% men and 29% women, 57% of whom are students and 43% are professionals, aimed to capture varied perspectives. Thematic content analysis was used in the qualitative data analysis.

- **Understanding the Metaverse:**

The participants perceived the Metaverse as a virtual universe where users can create personalized avatars and interact with others for social, professional, and entertainment reasons. They appreciated its immersive potential, especially the unique experiences and global interactions for learning and personal growth.

- **Awareness of Data Security:**

The respondents expressed concerns about personal data disclosure by drawing parallels to privacy issues encountered on social networks. They worried that avatar personalization could reveal intimate details and feared unauthorized data usage, which is also encountered on social networks. Some were apprehensive of interacting with other avatars and stressed the importance of implementing robust privacy rules and security measures to address these concerns.

- **Privacy and Data Control:**

Four main themes were identified: the importance of data confidentiality management, high risk, limitations in confidentiality and control options, and the fundamental nature of data confidentiality management. Interviewees underscored the importance of data privacy management in the Metaverse and expressed their need for strict privacy protection measures and total control over their personal data. The majority of respondents perceived a high level of data privacy risk in the Metaverse and expressed a desire for greater control over access to their information, particularly their learning activity preferences. In addition, some expressed dissatisfaction with the Metaverse's data security measures, which they considered relatively basic compared to the security protocols of conventional digital platforms.

- **Risk Exposure:**

Most participants perceived a high level of risk to data security in the Metaverse and cited concerns such as cyber-attacks and unauthorized use of data, particularly regarding avatar personalization. Avatar personalization in the Metaverse can elevate the risk level due to the disclosure of personal information and the potential for unauthorized use. Respondents expressed an urgent need for enhanced data security in the constantly evolving virtual universe.

- **Future Concerns:**

Respondents anticipated future data security concerns, including excessive collection of personal information, potential data exploitation, harassment based on disclosed information, conversion security, limited control over shared data, personal data encryption, and user interaction security.

- **Essential Measures to Address Concerns:**

The participants suggested that robust security measures should be implemented in the Metaverse to safeguard personal information and proposed enforcing clear privacy rules, ensuring robust data protections, employing security experts, implementing data collection restrictions, obtaining recognized security certifications, involving users in data collection, and conducting regular security checks to ensure data security and user safety.

After analyzing the responses from the participants, we identified their varied perceptions of the Metaverse. The most common descriptions include immersion, technological innovation, unique opportunities, and personal experiences. However,

we also noticed concerns about data security. Our study demonstrated that Metaverse users are worried about the disclosure of personal data, unauthorized access, and limited privacy protection options. They collectively acknowledged the high level of risk associated with the Metaverse and emphasized the urgent need for robust data security measures.

Our research confirmed that establishing clear privacy rules, implementing rigorous data protection protocols, enlisting the expertise of security professionals, and encouraging the active participation of users in data management are necessary to address these concerns.

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38. The game matters: Metaverse application as an educational tool

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Type of manuscript: Extended abstract

Keywords: learning; metaverse expressions; past gaming experience

Extended abstract

Introduction

The digital transformation in higher education has reshaped the concept of learning (Jaldemark, 2021), and virtual reality applications, such as the Metaverse, are considered to increase in the following decades. Metaverse is defined as “virtual reality environments that allow users to participate in an extended world ... where avatars representing real people are used for work and fun” (Thomas et al., 2023, p. 9). Hwang and Chien (2022, p. 1) discussed possibilities for the Metaverse, such as “people can engage in social activities such as discussing an issue, collaborating on a project, playing games, and learning from experiencing or solving some problems”. In doing so, students could be trained in the Metaverse, simulating scenarios which can occur in real work life. Thus, the students may gather valuable knowledge and skills for their future.

Virtual reality can be used on-site where students and teachers are physically co-located. If students are hindered from meeting the teacher physically, the teaching process can be conducted partly or entirely in the Metaverse. A combination of physical and virtual participation can be adjusted based on the educational needs of both parties. Irrespective of how student participation is organized, existing challenges, such as the connection between the Metaverse and reality, need to be addressed (Dwivedi et al., 2022).

Furthermore, students can train their networking skills using the Metaverse (Hwang & Chien, 2022). Such applications enable students to learn in a self-sustaining, enduring shared space (Dwivedi et al., 2022; Lee et al., 2021). Srisawat and Piriya-surawong (2022) aimed to develop a model for managing learning enhanced by the Metaverse with the potential to create a student-centered, innovative, and flexible context. The idea is that avatars can be applied in various scenarios, and by combining gamification technology and the theory of learning, the model may increase student engagement.

Considering that gamification may increase student engagement, Srisawat and Piriya-surawong (2022) further emphasized additional positive expressions such as enjoyment and autonomy (i.e. freedom). These expressions appear to be essential when using the Metaverse as an educational tool. Since the Metaverse requires a relatively high level of digital competence (Tlili et al., 2022), the lack of such competence may drive some students to experience frustration. In another context, Flavián et al. (2024) highlighted that frustration when using virtual reality can lead to distraction. Reality detachment is also discussed as a negative Metaverse expression (Capatina et al., 2024; Oleksy et al., 2023). Distraction and reality detachment could also be perceived as positive expressions, helping users escape undesirable or unpleasant situations (Orazi et al., 2023). Considering the impact of positive and negative expressions, the Metaverse have the potential to foster or hinder learning processes.

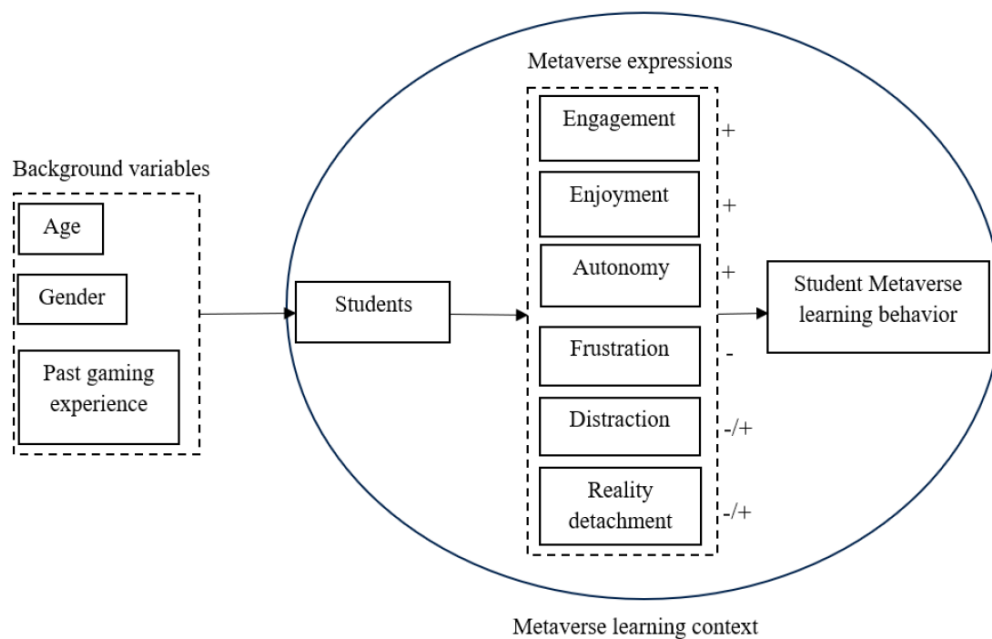
Students are often preferred as a target group for research on digital applications (Tan & Leby Lau, 2016). Most students quickly adopt new technologies and use them for their future development, and Dimitrova et al. (2022) found that the most educated ones tend to

be the most digitally oriented. The results of Flavián et al. (2024) further indicated that those who are more open to innovations need less effort to use the Metaverse than those who do not have past gaming experience. Thus, this study considers students suitable for research in the Metaverse learning context.

In response to Hwang and Chien’s (2022) call for Metaverse papers, this study aims to examine how students behave regarding positive and negative expressions when using the Metaverse as an educational tool. A complementary aim is to examine the role of background variables among the students, such as past gaming experience, when participating in the Metaverse learning context.

Figure 1 shows the preliminary framework. The students are affected by several background variables. This pilot study emphasizes age, gender, and past gaming experience. The background variables impact how students behave in the Metaverse learning context. Here, the Metaverse behavior is restricted to engagement, enjoyment, autonomy, frustration, distraction, and reality detachment.

Figure 1. Preliminary framework



Methodology

Based on observations, immersive netnography (Kozinets, 2023) was used to investigate student Metaverse expressions. This method allowed the collection of natural data, which reveals realistic behavior, avoiding external influence. In parallel to these observations, a workshop for approximately 60 minutes was conducted at a Swedish university during the autumn of 2023 as a part of the pilot study. The six participants were PhD students. None of them had previous experience with the Metaverse.

The planned follow-up study, including further observations and a survey, will chart if there are background differences regarding how various students behave while using the Metaverse as an educational tool. This combination of methods allows for both qualitative and quantitative analyses.

Preliminary findings and conclusion

The preliminary findings revealed that three of the six participants expressed that the Metaverse is engaging and enjoyable, two positive expressions that affect student behavior (Srisawat & Piriyaawong, 2022). These three relatively young students managed to

navigate their avatars relatively easily in the Metaverse. Thus, they perceived a relatively high degree of autonomy, and revealed a high degree of gaming experience. However, the other three participants needed instructions or support to navigate their avatars. For example, one of the participants stated that he/she could not navigate the avatar properly, which should be intuitive. These experiences lead to frustration. The reason was insufficient knowledge and skills, i.e. a lack of past gaming experience (Flavián et al., 2024). These less satisfied participants also seemed less distracted and immersed in the Metaverse, indicating a low level of reality detachment. Thus, distraction and reality detachment can be seen as negative expressions (Capatina et al., 2024; Oleksy et al., 2023). This could be explained by the limited workshop time, which reduced the possibility of these students being immersed enough.

Overall, it seems that the participants could apply the Metaverse as an educational tool while at the same time missing essential information about how to use their avatars. The pilot study results will be used to redirect the focus of the planned follow-up study, which will include additional background questions as well as additional positive and negative (i.e. barriers) expressions.

Originality

Since little is known about the Metaverse learning context, this pilot study gives insights into expressions of student behavior. Conducting a follow-up immersive netnography study of students applying the Metaverse as an educational tool can provide further insights into how useful this tool can be for various groups of students, which background variables are in play, and which expressions are crucial for their learning.

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39. AR Wonders: Crafting Certainty in the Realm of Uncertainty! The Role of Augmented Reality in Shaping Informed Decision-Making

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Type of manuscript: Extended abstract

Keywords: augmented reality; customer experience; sor model; decision-making uncertainty; privacy concerns

Extended abstract

Introduction

Augmented Reality (AR) has transformed the traditional retail experience by introducing interactive and immersive elements that provide consumers with novel ways to evaluate products and make informed decisions (Kumar et al., 2024). By overlaying digital information onto the physical world, AR allows customers to visualize products in detail, examine features from different angles, and even try them virtually before purchasing (Flavián et al., 2021a; Yang et al., 2024). Building on SOR model, the aim of this study is to conceptualize the relationship between augmented reality characteristics and consumers' decision-making g reduced uncertainty in the presence of the mediating role of product evaluation aspects. Therefore, this study proposes the research question of “Do product evaluation aspects mediate the relationship between AR characteristics and reduced uncertainty?” and “Do privacy concerns moderate the relationship between product evaluation aspects and reduced uncertainty?”.

Theoretical Background

SOR Model

The model explains how stimuli impact consumer attitudes, emotional responses (organisms), and subsequent customer reactions. SOR model applied to AR attributes provides a comprehensive framework for analyzing user experiences in AR environments (Flavián et al., 2021b; Yang et al., 2024). The organism component of the SOR model, portrayed through product evaluation in AR, involves users' cognitive processing and emotional reactions to AR stimuli (Djakasaputra et al., 2023). The response aspect of the SOR model, reflected in reduced uncertainty, highlights the outcomes of users' interactions with AR stimuli and their evaluation of AR experiences (Flavián et al., 2021b; Khosasih and Lisana, 2023).

AR Characteristics

(1) Interactivity

The interactivity plays a crucial role in shaping the AR customer experience, influencing various aspects of user engagement, satisfaction, and behavioral outcomes. Interactivity was defined as “The degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized” (Moes et al., 2023, p.1014).

(2) Personalization

AR personalization revolutionizes customer experiences by seamlessly integrating virtual elements into real-world environments, tailored specifically to individual preferences and behaviors. It was described as “presenting and using customer information to create an individualized customer experience” (Chandra et al., 2022, p.1534).

(3) Novelty

AR technology introduces a novel dimension to the customer experience landscape, offering unique and immersive interactions that captivate and engage users in unprecedented ways. Novelty was described as “the degree of distinction between current thoughts and past experiences, and it incorporates the role of time” (Habil et al., 2024, p.11). In other words, the novelty of AR lies in its ability to blend virtual elements seamlessly into the real world, creating dynamic and personalized experiences that transcend traditional boundaries (Xu et al., 2024).

(4) Reality Congruence

AR reality congruence refers to the degree of alignment or match between virtual elements overlaid in an AR experience and the real-world context in which they are presented. It was defined as “the extent to which a virtual object matches a real object” (Kumar et al., 2024, p.7). In other words, it measures how seamlessly virtual objects or information integrate with the physical environment to create a believable and immersive user experience (Kowalczyk et al., 2021).

(5) Entertainment

AR entertainment encompasses a wide range of experiences beyond gaming, contributing to a diverse landscape of customer experiences across various industries. It was considered as “the use of technologies simply for the fun of it or for escapism” (Balakrishnan et al., 2021, p.4). Moreover, AR entertainment enriches customer experiences by offering innovative, interactive, and personalized experiences that transcend traditional boundaries (Wang et al., 2021).

(6) Shareability

AR technology not only enhances customer experiences but also facilitates shareability and recommendation, leading to a deeper level of engagement and satisfaction. The shareability of AR experiences refers to the ease with which users can share their AR interactions, content, and discoveries with others, while recommendation involves suggesting AR experiences based on user preferences and behaviors (Hilken et al., 2020; Kumar et al., 2024).

(7) Product Assortment

AR has transformed the way customers interact with product assortments, leading to enhanced customer experiences across various industries. Assortment can be described as “the depth and breadth of the products and/or services offered” (Kumar et al., 2024, p.6). This AR-driven exploration enhances decision-making and customer satisfaction by providing a comprehensive view of product options and features (Barta et al., 2023; Kang et al., 2023).

(8) Informativeness

Informativeness as an AR attribute goes beyond just providing data; it's about delivering contextual and personalized information that adds depth and relevance to the user's experience. It was explained as a determinant “whether marketing augmented reality apps provide rich information that facilitates consumer understanding of the product or service” (Habil et al., 2024, p.12).

Product Evaluation

(1) Context Saliency

AR has a significant impact on product design and perceptual saliency as customer experience outcomes. AR product design leverages digital overlays and interactive elements to enhance the visual appeal and functionality of products, making them more perceptually salient to customers. This immersive experience enables customers to interact with virtual prototypes and explore design variations in real-time, leading to informed decision-making (Pfaff and Spann, 2023).

(2) Perceived Product quality

Perceived product quality is described as “the evaluation of the overall excellence or advantages of the product; that is, the evaluation of a product” (Yang et al., 2023, p.4). It plays a crucial role in consumers' product evaluation and purchase decisions, encompassing aspects like visual fidelity and realism in AR experiences (Moser and Lewalter, 2024).

(3) Brand Trust

AR plays a significant role in shaping brand trust as part of product evaluation and customer experience. AR experiences can enhance brand trust through various mechanisms that build credibility, transparency, and reliability in the eyes of customers (Alimamy and Gnoth, 2022; Layoye et al., 2023).

Privacy Concerns

AR presents various privacy concerns that need to be addressed to ensure ethical and responsible use. One of the primary concerns is related to data privacy and security. AR applications often collect and process sensitive information about users, such as location data, biometric data, and personal preferences, to deliver personalized experiences (Cowan et al., 2021; Kang and Su, 2022).

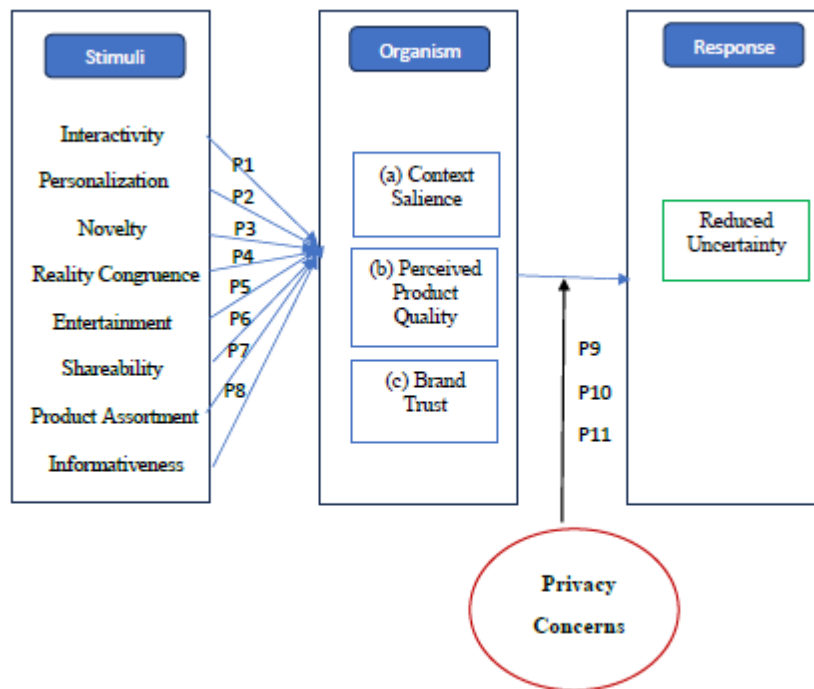
Reduced Uncertainty

AR significantly contributes to reduced uncertainty as an outcome of product evaluation by providing users with immersive and interactive experiences that offer clarity, information, and confidence in their decision-making processes. AR applications allow users to see products in their real-world environments, enabling them to assess size, fit, appearance, and functionality more accurately than traditional 2D images or descriptions (Athoillah, 2023; Barta et al., 2023).

Research Proposition

Although existing studies have explored the role of AR attributes as stimuli in enhancing reduced uncertainty, there remains a gap in understanding how AR product evaluation acts as both an organism and a mediator in the SOR model, particularly concerning reduced uncertainty as a consumers' response. Specifically, there is a need to investigate how AR product evaluation processes mediate the relationship between AR attributes as stimuli and consumers' responses related to reduced uncertainty (Hsu et al., 2024). Accordingly, the current study proposes the following relationships (Figure 1):

Figure 1. Conceptual Framework (Developed by the researcher)



Conclusion

The application of the SOR model to AR environments provides a comprehensive framework for understanding user experiences, decision-making processes, and behavioral outcomes. There are various practical implications of applying the SOR model to AR environments. First, understanding the mediating role of product evaluation aspects in the organism phase emphasizes the importance of user-centered design. Also, addressing privacy concerns as a moderator underscores the need for transparent data practices, informed consent mechanisms, and robust security measures to build user trust. Additionally, understanding the role of reduced uncertainty as a response in the SOR model enables businesses to focus on aspects that contribute to clarity, and trust in AR interactions.

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40. The Influence of Augmented Reality on Purchase Intentions in Vietnam's Online Fashion Retailing

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Keywords: augmented reality; purchase intention; online fashion retailing

Extended abstract

Introduction

In recent years, digitalization has been constantly changing business models, making many companies go online for better customer reach. However, with e-commerce, replicating in-store experience when shopping online challenges clothing retailers (Blázquez, 2014). The impact of AR adoption has elicited interest from both practical and academic circles (Fan *et al.*, 2020). Formerly, scholars concentrated on the growth, usability, and user adoption of AR technologies (Bigne, 2021). In addition, many studies examined the effect of AR on purchase intention (Uhm *et al.*, 2022). This paper will add to existing literature in two key areas. Firstly, research on AR and VR's applications in fashion retailing and their behavioral impacts remains limited, especially in Vietnam, despite their increasing use in businesses. This study, using a sample of respondents in Vietnam will investigate how AR and its technological features may influence customers' intention in this market. Secondly, using the result, proposals will be made to better the use of AR technology, not only in Vietnam, but also in other markets with similar characteristics.

Theoretical background

Aesthetic quality

Aesthetic quality refers to virtual images' graphics, vividness, and realism, which positively influence consumer perceptions of the goods that came from experiencing the AR system (Lee, 2012). Aesthetic quality, conveyed through vivid graphics and lifelike sound, influences the hedonic dimension of emotional tendencies. This leads users to believe that desired outcomes will be achieved when applying augmented reality in information search (Norman, 2002; Zhang and Li, 2005). Based on these findings, the research group proposes:

Hypothesis **H1**: Aesthetic quality has a positive relationship with perceived usefulness.

Interactivity

Interactivity describes how rapidly users can handle technology and their degree of control over such manipulation. Numerous prior studies have indicated that enhancing interactivity helps consumers believe that they will gather information more effectively when they can manipulate products, inspect images, and scrutinize products more clearly (Argyriou, 2012). Based on these findings, the authors put forth:

Hypothesis **H2**: Interactivity has a positive relationship with perceived usefulness.

Novelty

In this article, novelty refers to the unique features, personalized user experience, or novel content (stimulants) that are experienced each time access is gained through the AR screen. Javornik (2016) shows that the evolution of AR enables users to virtually try on clothing while shopping online, providing novel and convenient experiences for consumers. Based on these findings, the authors propose:

Hypothesis **H3**: Novelty has a positive relationship with perceived ease of use.

Performance expectancy

Performance expectancy is mentioned as the extent to which an individual believes that using a system will enhance their performance (Davis *et al.*, 1989). Venkatesh *et al.* (2003) argue that expected usefulness depends on related factors such as perceived usefulness and perceived ease of use (Davis *et al.*, 1989). Based on the findings from the aforementioned research results, the authors propose the below hypothesis:

Hypothesis **H4**: Performance expectancy has a positive relationship with perceived ease of use.

Perceived ease of use

Perceived ease of use represents the degree to which users perceive the use of technology as easily leading to productivity, enhanced performance, efficiency, and ease of control (Davis, 1989). Lim & Ting (2012) found that perceived ease of use has a significant positive effect on attitudes. In many previously published studies, the hypothesis regarding the relationship between perceived ease of use and consumer attitudes has been addressed in topics related to technology in general and AR in particular (Papakostas *et al.*, 2023).

Hypothesis **H5**: Perceived ease of use has a positive relationship with attitude.

Perceived usefulness

The perceived usefulness is frequently mentioned as a crucial factor that influences new technology adoption (Kim *et al.*, 2017). Sumak *et al.* (2011) specifically proved that perceived usefulness has a significant positive effect on attitude. Based on the findings from the aforementioned research results, the authors propose the following hypothesis:

Hypothesis **H6**: Perceived usefulness has a positive relationship with attitude.

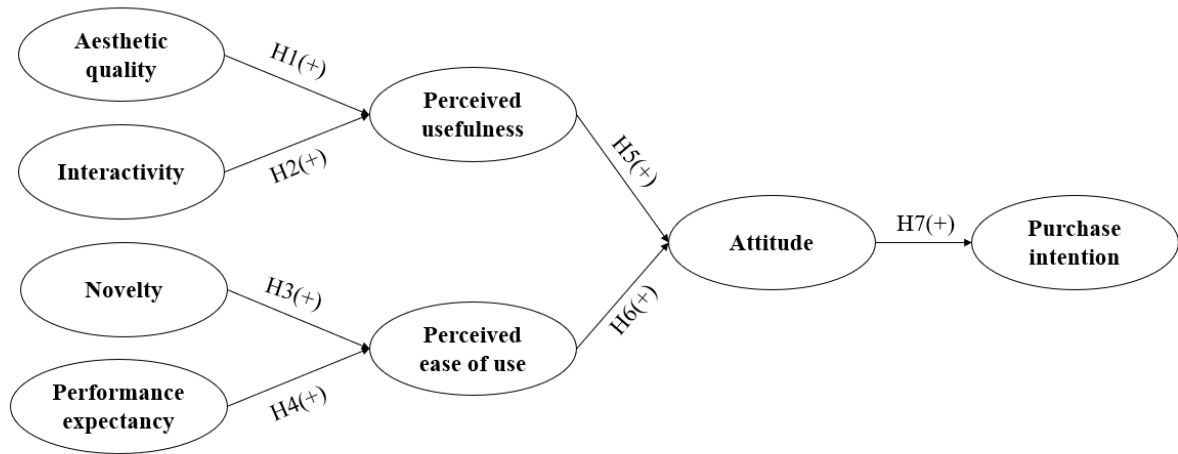
Attitude

Attitude has a significant effect on purchase intention (Ajzen, 1991). Furthermore, attitude has a significant positive effect on purchase intention (Karjaluoto & Leppäniemi, 2013). Consumer attitudes towards AR technology positively correlate with the intention to purchase fashion items (Moorhouse *et al.*, 2018). Therefore, we propose the following hypothesis:

Hypothesis **H7**: Attitude has a positive relationship with purchase intention.

Figure 1 preserves the key variables while allowing their expansion to investigate the impact of external variables related to technological characteristics.

Figure 1. Research framework



Methodology

Research data were collected by distributing online questionnaires through Google Forms in Hanoi and Ho Chi Minh City, Vietnam, from December, 2021 to January, 2022. The questionnaire included four technological characteristics of AR, namely aesthetic quality, interactivity, novelty, and performance expectancy, measured by 18 items. In addition, perceived ease of use and perceived usefulness were each covered by six items. Attitude included four items, and purchase intention consisted of five items, resulting in a total of 39 items. The five-point Likert scale is selected to compose the survey. The survey process elicited 1301 valid responses. SPSS 25 and AMOS 24 are used to process data and conduct reliability analysis, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM).

Results

Table 1 displays the structural model's characteristics, including the β coefficients, standard errors, significance level (p-value), and the result of each hypothesis.

Table 1. Hypothesis testing.
(Note: *** $p < 0.001$)

Hypothesis	Relationship	Estimate	S.E.	C.R.	P	Results
H1	HI \leftarrow TM	0.121	0.035	3.486	***	Supported
H2	HI \leftarrow TT	0.514	0.038	13.527	***	Supported
H3	DSD \leftarrow MD	0.41	0.034	11.913	***	Supported
H4	DSD \leftarrow ML	0.325	0.035	9.202	***	Supported
H5	TD \leftarrow DSD	0.37	0.03	12.262	***	Supported
H6	TD \leftarrow HI	0.482	0.031	15.677	***	Supported

Limitations and directions for further research

First, the study only investigated a limited number of factors related to the influence of AR technology on young people's intention to buy fashion products online. Second, the sample structure of the group was not sufficiently diversified. Third, the scope of the study only extended to surveys conducted in two representative cities, Hanoi and Ho Chi Minh City, from where it is possible to extend the study to the Vietnamese market in general, in future studies. Therefore, the results of the study are not completely

objective and sufficiently detailed. The study should be replicated with a larger and more geographically diverse sample.

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41. Visualizing Choices: Assessing Augmented Reality's Influence on Choice Difficulty across Maximizers and Satisficers

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Type of manuscript: Extended abstract

Keywords: augmented reality; virtual product experience; decision-making; choice difficulty; mental imagery

Extended abstract

Introduction

Retailers are increasingly turning their attention to augmented reality (AR) to provide new virtual product experiences for consumers. Despite practical and academic interest in the technology, AR's potential to reduce choice difficulty remains largely unexplored. Drawing on the direct experience spectrum (Mooy & Robben, 2002) and the Integrated Information Response Model (Smith & Swinyard, 1982), this article explores how virtual product experiences, including visually dynamic and static AR, impact choice difficulty. It examines their comparison and complementarity with more indirect product experiences like physical product swatches, and considers the role of mental imagery in this process. Moreover, it is unclear how choice difficulty affects purchase intention across different consumer segments, as individuals vary in decision-making styles (Schwartz et al., 2002). This article aims to fill these gaps through two experiments.

Conceptual models and hypotheses

Based on relevant previous research the following question and hypotheses are proposed for study 1 and 2 (see Figures 1-2):

- H1: Exposure to visually dynamic and static AR apps will result in less choice difficulty (a) and will elicit more mental imagery (b) than physical product swatches.
- RQ1: Is there a difference between visually dynamic and static AR regarding choice difficulty (a) and mental imagery (b)?
- H2: Mental imagery will decrease choice difficulty.
- H3: Choice difficulty will decrease choice confidence (a) and mental imagery will increase choice confidence (b).
- H4: Choice confidence will increase purchase intention.
- H5: Only for maximizers and not for satisficers, choice difficulty will decrease purchase intention.
- H6: Sequential exposure to physical product swatches and visually dynamic AR will reduce choice difficulty, compared to exposure solely to physical product swatches (a) or dynamic AR (b).

- H7: Sequential exposure to physical product swatches and visually static AR will reduce choice difficulty, compared to exposure solely to physical product swatches (a) or static AR (b).

Figure 1. Proposed conceptual model study 1

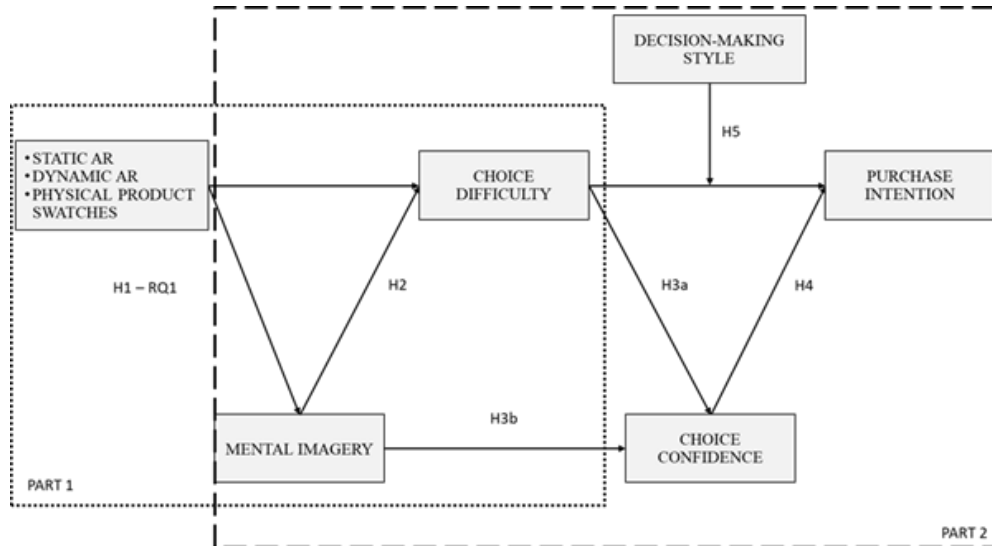
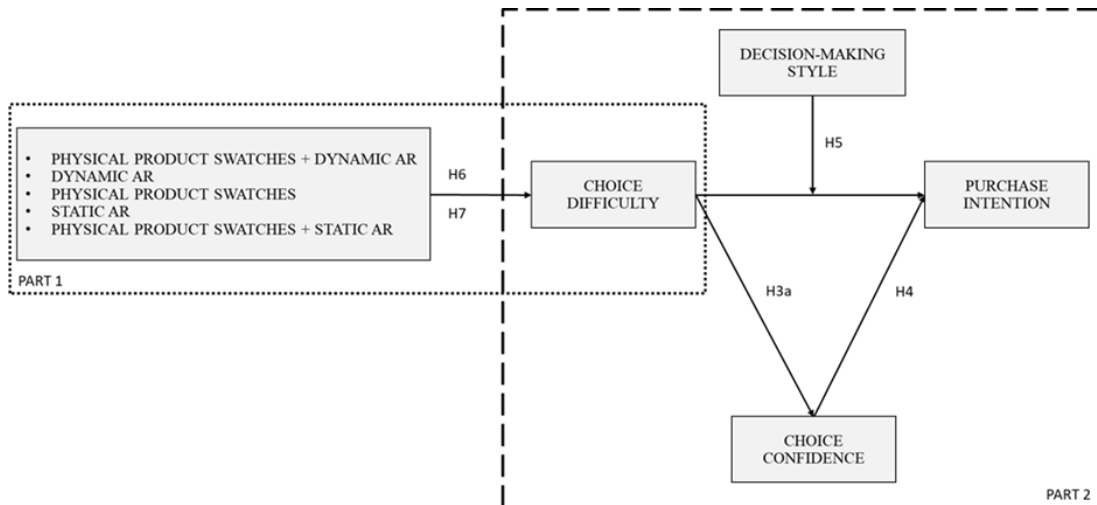


Figure 2. Proposed conceptual model study 2



Method

Study 1 adopts a 3x1 between-subjects experimental design, focusing on paint selection for a student dorm. 214 first-year bachelor students ($M_{age}=18.94$; $SD=1.35$; 49.5% women) were individually placed in a simulated dorm room and randomly assigned to one of three conditions: (1) choosing a color using Levis's paint swatches; (2) selecting a color using the Levis Visualizer mobile application with static AR, allowing limited adjustments solely to an image of the dorm's wall; or (3) choosing a color using the Levis Visualizer application with dynamic AR, enabling direct visualization of paint colors, live on the dorm's wall. After color selection, participants completed a survey with questions on dependent and moderating variables, and demographics.

Study 2 employs a 5x1 between-subjects experimental design, mirroring study 2. Data from study 1 ($n=214$) was included in this study and supplemented with additional data

(n=127). The additional 127 participants (first-year bachelor students; $M_{age}=19.08$; $SD=1.60$; 52.5% female) were randomly assigned to one of two conditions: choosing a color utilizing Levis's paint swatches, and subsequently, (re)selecting a color using the Levis Visualizer application (1) with static AR, or (2) with dynamic AR. Next, participants completed a survey that included dependent and moderating variables, and demographics.

Results

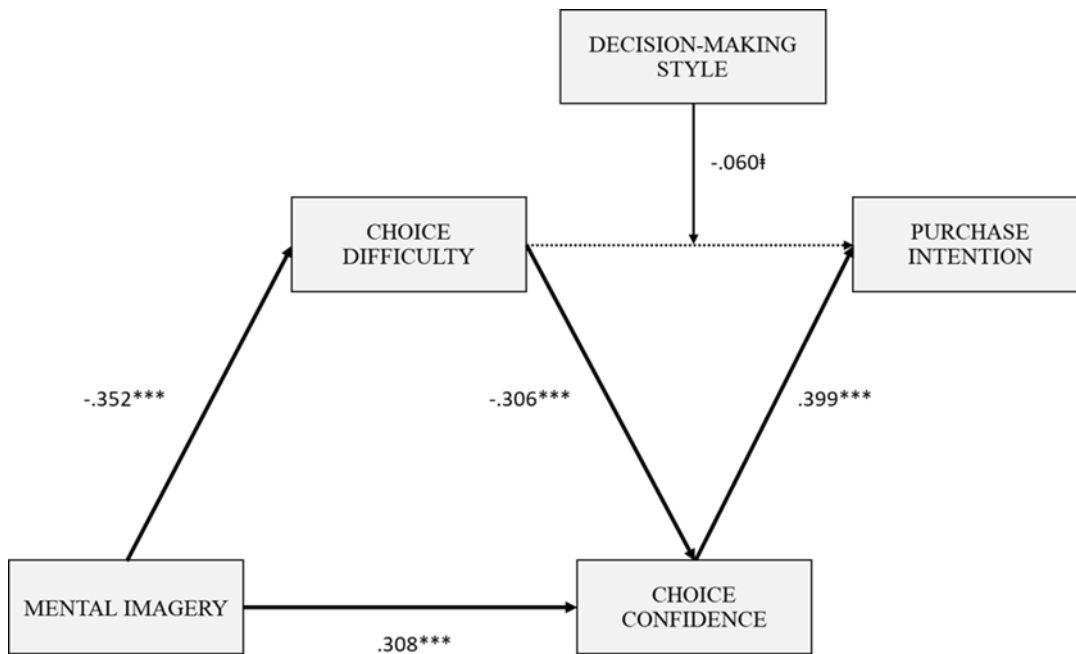
Study 1

MANOVA analysis (H1) showed a significant main effect (Wilks' $\lambda=.880$; $F(4,420)=6.931$; $p<.001$). Subsequent univariate analyses showed no significant main effect of product presentation type on choice difficulty ($F(2,211)=2.04$; $p=.133$; rejecting H1a), but a significant main effect for mental imagery was observed ($F(2,211)=13.555$; $p<.001$). Post-hoc analyses revealed partial support for H1b, showing that respondents who used static AR ($M_{static}=5.50$; $SD=.88$) experienced more mental imagery than respondents who used swatches ($M_{swatches}=4.70$; $SD=1.05$) or dynamic AR ($M_{dynamic}=4.82$; $SD=1.04$; both $p<.001$). Regarding H2-H5, a customized model was calculated, making use of the SPSS PROCESS Macro (Hayes, 2022; 5000 samples; 95%CI, mean-centered variables for interaction effects) was used. Each of the paths was statistically significant, supporting all hypothesized paths and directions (see Figure 3).

Study 2

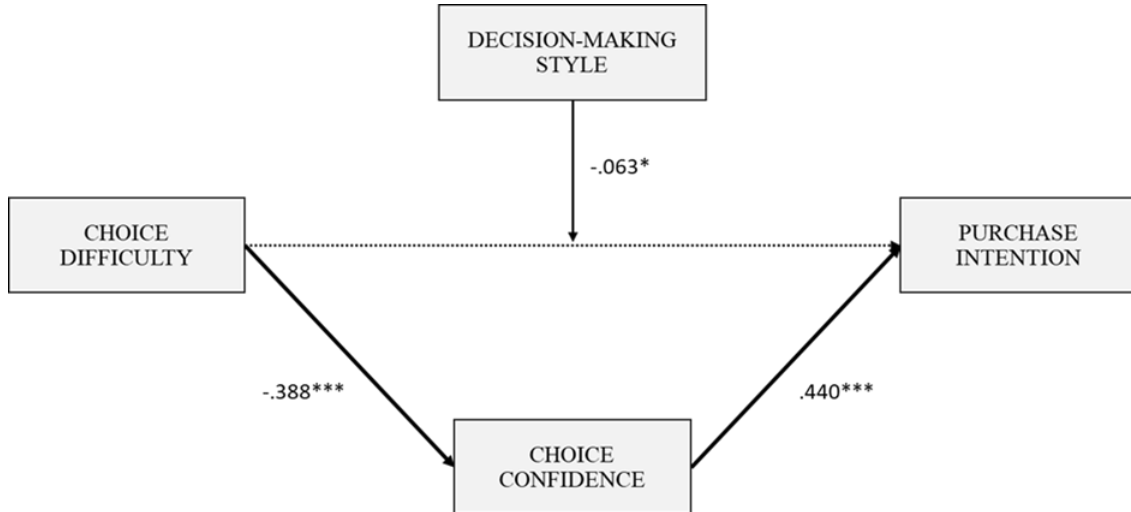
ANOVA analysis (H6 & H7) showed a significant main effect of product presentation type on choice difficulty ($F(4,336)=2.691$; $p=.031$). Concerning H6, subsequent LSD post-hoc analyses unveiled a difference in choice difficulty between swatches + dynamic AR versus only swatches ($p=.067$, supporting H6a), but no difference between swatches + dynamic AR compared to only dynamic AR ($p=.566$, not supporting H6b). Regarding H7, LSD post-hoc analyses showed a significant difference in choice difficulty between swatches + static AR and only swatches ($p=.002$), supporting H7a. However, there was no significant difference in choice difficulty between swatches + static AR and only static AR ($p=.196$), not supporting H7b. H3a, H4 & H5 were measured similar to study 1. In line with the results of study 1, each of the paths was statistically significant, supporting all hypothesized paths and directions (see Figure 4).

Figure 3. Results study 1



Note: Figures represent unstandardized beta coefficients. $^{***}p < .001$, $†p = .100$. Dotted lines indicate a non-significant effect. Arrows in bold indicate mediation.

Figure 4. Results study 2



Figures represent unstandardized beta coefficients. $^{***}p < .001$, $^*p < .05$. Dotted lines indicate a non-significant effect. Arrows in bold indicate mediation.

Originality

Across the two studies, we contribute to AR-focused marketing research in multiple ways:

- To our knowledge, this article is the first to empirically test the effect of AR applications on choice difficulty.
- We provide empirical evidence that mental imagery is key in reducing choice difficulty. Doing so, this study provides previous studies' conceptual conjectures (Barta et al., 2023).
- The need to investigate additional consumer characteristics in AR-research has been raised (Hilken et al., 2022). Therefore, we consider decision-making style and provide evidence for a moderating effect on the extent that choice difficulty reduces purchase intention.
- We compared multiple virtual product experiences, specifically distinguishing between static and dynamic AR, highlighting that not all types of AR have the same effect on decision-making.

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42. Applying Generative AI in Tourism Planning: A Screening Theory Approach

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Type of manuscript: Extended abstract

Keywords: artificial intelligence; screening theory; tourism

Extended abstract

The introduction of ChatGPT by OpenAI in 2022 has broadened the discussion around artificial intelligence beyond a select group of specialists. It is now widely acknowledged that generative artificial intelligence (GenAI) represents a significant shift, comparable to revolutions such as the agrarian or industrial. It is expected that the tourism industry will also be significantly impacted by the AI revolution (Carvalho & Ivanov, 2023).

Previous research indicates the potential impact of AI-based technologies on the tourism industry in terms of labour substitution, improving the customer experience, or streamlining business processes (Flavián, Casaló & Wang 2021; Saydam *et al.*, 2022; Dwivedi *et al.* 2023). Ethical concerns such as transparency, fairness, privacy and the preservation of meaningful human interactions highlight the need for responsible use of AI in the tourism sector (Panjrolia *et al.*, 2023). As GenAI is a recent technological development, there is a limited amount of research available on how customers respond to it. Kim *et al.* (2023) have stressed the importance for the tourism industry to understand customers' responses to GenAI. They have also identified research gaps, including the absence of studies on customers' reactions to AI-generated content and the challenge of chatbots providing suboptimal recommendations.

Implementing AI in the travel planning and organization process has been found to have several benefits, including the objectivity of the results (Christensen *et al.* 2024), reduction of online information overload, and enhanced personalization (Kim *et al.*, 2023). However, it is important to acknowledge that AI results may be subject to bias. The issue of AI hallucinations, i.e. making up results, is a concern that needs to be addressed in order to maintain trust in AI work. According to Wei *et al.* (2022), the reliability (truthfulness) of responses is the main factor determining their quality. Additionally, when planning and organizing holidays with AI, factors such as completeness, timeliness, and usefulness of the answer may also be taken into consideration (Kim *et al.*, 2023). It is worth noting that the criteria used to evaluate performance may not always be clear, especially for younger individuals. According to Christensen *et al.* (2024), a significant number of Gen Z and Millennial consumers have shown a preference for the ChatGPT travel itinerary, even though it may contain inaccurate or fabricated information. This is due to their perception of ChatGPT as a more reliable source of content compared to other conventional and popular sources used for travel and tourism decision-making.

This article seeks to establish the measures by which the results generated by AI can be evaluated. Consequently, the article attempts to answer the questions: what are the specific observable signals and quality dimensions used to evaluate the results generated by AI, and how relevant are they in tourism holiday planning?

Various researchers have studied the factors that influence users' intentions to use AI-based technology in tourism. According to Pillai and Sivathanu (2020), perceived ease of use, usefulness, and trustworthiness are among significant factors. Melián-González *et al.* (2019) also found that expected performance is crucial. Loureiro *et al.* (2021) discovered that tourist perceived value impacts the quality of the relationship between tourists and intelligent voice assistants. Pham *et al.* (2024) conducted a study using three human-like cues - perceived warmth, speed of communication, and perceived competence - as triggers. These cues stimulated cognitive responses, such as trust in ChatGPT and attitudes towards ChatGPT, resulting in increased satisfaction and intention to continue using ChatGPT for travel services.

This study uses screening theory (Spence, 2002) to address the issue of antecedents in the application of generative artificial intelligence in tourism planning. The screening theory suggests that in the presence of an information imbalance, the party with less information will seek to employ different information signals or indicators to bridge the gap and enhance their decision-making process (Connelly *et al.*, 2010). According to Perner and Skjøelvik (2019), this theory explores the process by which receivers interpret and evaluate signals from signalers to gain insight into their quality.

In 2024, a study was conducted in Poznań, Poland to examine the process of searching for quality signals in response, based on the views of representatives from Generation Z.

- During the first stage, participants were requested to search for content using leading GenAIs such as ChatGPT by OpenAI, Gemini by Google, and Copilot by Microsoft for trip inspiration, destination information, and details on dates, prices, and service providers.
- During the second stage, participants were requested to provide a descriptive evaluation of the results they obtained. They were asked to indicate whether they were satisfied or dissatisfied with the results and to explain the reasons behind their choice. Furthermore, they were asked to compare the results generated by AI with other sources of information that are necessary for planning and organizing trips, such as social media, Google, and service provider websites.
- During the third stage, the results were analysed using the Atlas.ti programme. The respondents' answers were categorised into dominant themes, which included observable signals such as content and form signals. The study assessed the comprehensiveness, reliability, timeliness, and usefulness of the answers as four quality dimensions.

The study presents findings on the factors that influence the use of AI in travel planning. It acknowledges research gaps in the area of AI research from a non-business user perspective. The results indicate that AI can be useful in finding sightseeing information and inspiring trips, but its capabilities in organizing trips, such as searching for accommodation and checking current transport data, are limited due to the lack of access to up-to-date information. The article presents a comparison of the most widely used generative artificial intelligence applications available in the market, with a focus on their relevance to travel planning. Furthermore, it proposes metrics to evaluate the quality of AI-generated outcomes. The signals considered in the evaluation process were identified and classified using screening theory.

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43. Virtual Reality (VR) encounters: how do they affect visitors' experiences?

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Keywords: tourism behaviors; virtual reality (VR); affective experience

Extended Abstract

Recent years have seen a rise in the popularity of virtual reality (VR), mostly because of substantial investments made by high-tech companies, falling prices, and growing improvements in hardware and software. With the use of virtual reality (VR) technology, people may see, feel, and interact in virtual spaces just like they would in the real world (Lombard and Ditton 1997; Waterworth et al. 2015). It is generally presumed that when users feel highly “present”, they react emotionally as if the virtual world exists. Furthermore, studies have demonstrated that people's motivational inclinations and decision-making processes can be directly influenced by such experiences (Menninghaus et al. 2019).

There are two formats available for VR: interactive format (Billinghurst and Kato 2002; Shyam Sundar 2012) and non-interactive one. In the pre-experience phase, existing studies indicate that content featuring high factual realism, such as 360-degree videos, positively affects perceptions of presence and booking intentions (Orús et al. 2021). However, it is currently unclear from research if using an interactive VR format or a non-interactive format may elicit different affective and behavioral responses in individuals.

The interaction between the virtual environment, affective and cognitive responses, and individual behavior is particularly relevant in the tourism context, given the characteristics of the visiting and enjoyment experience that characterize it (Sthapit and Coudounaris 2018). Grounding on these studies, the overall goal of this research is to investigate the link between affective experiences and VR, and their impact in terms of behaviors and intentions in the tourism domain. The impact of the typology of VR experience, an interactive VR format or a non-interactive format, is explored in the pre-purchase experience stage of the visitor journey.

Methods and procedure

A laboratory experiment has been conducted at an Italian University, where 28 participants are randomly assigned to one of the conditions below, with a between-subjects design:

- (1) Non-interactive virtual condition: participants in this condition watch a panorama through an ad hoc 360° video created by means of Insta360 X3 Pocket 360 Action Cam.

(2) Interactive virtual condition: participants in this condition watch the same panorama developed in Unity through a Head Mounted Display and can navigate it by means of a set of controllers and sensors.

During each exposure, the ongoing emotional and cognitive experience and the consequent behaviours were assessed through psychological, neurophysiological, and behavioural measures. Physiological data related to cortical, cardiac, and electrodermal responses were collected by means of electroencephalographic (EEG), electrocardiographic (ECG), and electrodermal activity (EDA) signals, respectively. Assessing physiological parameters offers an objective, often non-intrusive evaluation of user responses and is a widely supported method in VR experience evaluation (Halbig and Latoschi 2021). EEG is used to assess participant pleasure toward the experience, above other measures, while ECG and EDA measure the level of arousal of the participant (Mehrabian and Russell, 1974; Kreibig, 2010; Boucsein, 2012). Specifically, 29 EEG channels were collected at 256 Hz through a clinical-grade device (SD LTM Express, Micromed, Italy). On the other hand, ECG and EDA signals were recorded at 1024 Hz and 16 Hz, respectively, with a polygraph (Thought Technology Ltd., Canada). Signals were collected during the exposure to the condition and throughout the display of a neutral image, which served as a baseline for the physiological data analysis that followed. Additionally, intentions and behaviors of the individual following each exposure were recorded, together with psycho-socio-demographic characteristics.

Results and discussion

At first, we assessed the significance of the physiological response induced by both the non-interactive and interactive stimuli by comparing the features extracted during the baseline with those calculated during the VR experience. These differences were assessed by means of Wilcoxon signed-rank tests and were found significant ($p < 0.05$) for all the considered EDA and EEG features. On the other hand, among the HRV features, only stdRR was found to be sensitive to the cardiac changes induced by the experimental protocol. All the other indices extracted showed higher sympathetic activation and increased cognitive engagement during the VR experience compared to the baseline period. In the second place, we evaluated whether there were differences in the physiological response of the interactive and non-interactive groups of participants. We relied on the Wilcoxon rank-sum test. Here the baseline-subtracted SCR latencies of the interactive group (median = -2.91, IQR = 10.19) were found to be significantly lower than the non-interactive group (median = 0.25, IQR = 3.94), indicating higher sympathetic activation, arousal, or excitement, suggesting that the interactive VR experience produced more involvement in our participants than the non-interactive one. About the self-reported measures, we carried out a series of Wilcoxon and Student's *t*-tests to compare the differences between the two independent groups (non-interactive versus interactive) on each dimension of affect and behaviour. Results show that the intention to revisit the place experienced in virtual reality was significantly higher in the interactive scenario than in the non-interactive scenario.

Academic and managerial contributions

This study contributes to the literature by investigating the potential of virtual reality for eliciting affective experiences, and turn into tourism behaviors. Furthermore, we offer proof of the connections between behavioral, neurophysiological, and psychological reactions to interactive and non-interactive VR applications. We confirm that VR has the potential to transform the customer experience during the tourist journey by offering prospective visitors a trial encounter with the destination and boost visit intentions by enhancing consumers' confidence about their actual visit (Flavián et al. 2019).

Furthermore, VR experiences, especially the interactive ones, affect intention to revisit the place, thus suggesting an interesting economic impact of integrating VR into tourism activities. Due to the limited sample size, we do suggest future studies involve a larger and more diverse sample and further explore the topic by investigating the impact of additional sensory experiences into VR encounters. Previous studies, indeed, indicate that multisensory experiences reinforce the connection between the emotional and behavioural perceptions of destinations (Flavián et al. 2021). Overall, the study gives VR researchers and designers evidence-based guidelines for developing applications that can evoke strong emotions in users and evaluate how such experiences affect behavior.

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44. The Impact of Interactivity on Information Processing for Virtual Tourist Destinations

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Type of manuscript: Extended abstract

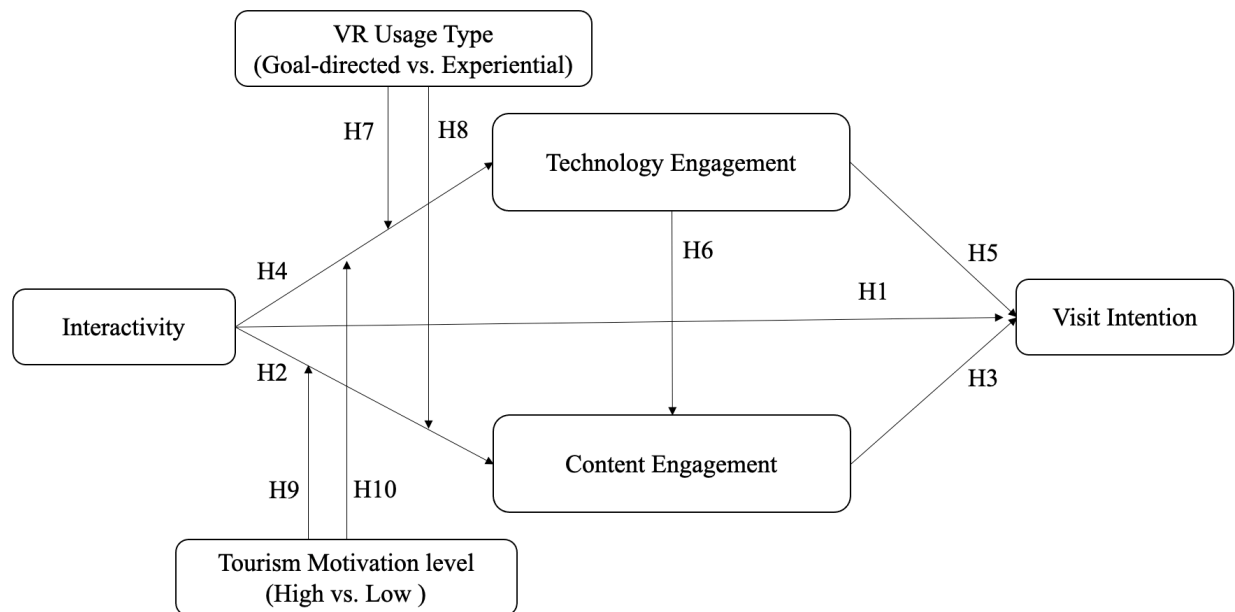
Keywords: virtual reality; interactivity; engagement; information processing; destination marketing

Extended abstract

Tourist destinations are constantly searching for new ways to strategize VR in order to attract potential tourists. Cumulative literature has documented that interactivity can significantly adjust people's attitude and behavioral intention. The existing literature lacks a coherent understanding of the role played by interactivity in different types of engagement (Alalwan et al., 2020). Meanwhile, tourism scholars have adopted theories such as the stimulus-organism-response framework (e.g., Flavián et al., 2019) and mental imagery (Bogicevic et al., 2019) to explore the effects of VR interactivity. However, previous studies have rarely adopted information processing theories in understanding the different information processing modes tourists adopt during their VR experience. From a perspective of engagement, recent studies mostly adopt the view of technology engagement to describe how interactivity affects user attitude and behavioral intention. The most desirable experience of interactivity is a greater engagement with the VR content, but how content engagement mediates the impact of interactivity on tourist decision-making is largely unknown.

Addressing these gaps in the VR literature, this research adopts the heuristic-systematic model of persuasion (Chaiken, 1980) to investigate how VR interactivity influences visit intention (Figure 1). By conducting three studies, we find that VR interactivity affects the user's intention to visit the destination such that they perceive the destination as a more attractive place. Second, the effect of interactivity on visit intention through content engagement is negative, perhaps because interactive features distract the user away from cognitive information processing that is influential on shaping visit intention. Third, interactivity enhances the feelings of technology engagement while browsing, which in turn contributes to a more favorable visit intention. Fourth, there is a positive relationship between technology and content engagement through heuristic-systematic processing. Finally, the effect of interactivity on technology engagement is stronger for tourists with low tourism motivation than for tourists with high tourism motivation. People with no directed tourism motivation tend to focus on entertaining themselves with technical features more than with the information content of the VR.

Figure 1. Research Framework



This study contributes to destination marketing by unveiling the underlying information processing processes that explain the causal effects of interactivity on engagement and visit intention. Although previous VR studies found that a VR experience could lead to heuristic processing (Wei et al., 2019) or systematic processing (Leung et al., 2020), they did not integrate both effects into the same model. This study applied the heuristic-systematic model to investigate both direct and indirect effects of interactivity on visit intention. Second, this study is one of the first study to empirically examine the causal effect of interactivity in the VR tourism marketing context. Interactivity is an essential feature that distinguishes VR platforms from traditional information technologies. Previous studies compared the effectiveness of VR to some still images or 360-degree videos without exploring what factors in VR resulted in higher marketing performance (Leung et al., 2020). The results speak to the strong potential of interactivity as a persuasion tool. Third, this study provides a more comprehensive understanding of engagement in VR tourism marketing. Most existing tourism studies embrace a unilateral view of technology engagement, such as psychological engagement, behavioral engagement, or emotional involvement. This study is unique in that the indirect path of the effect of interactivity on visit intention was examined by operationalizing the engagement mode into technology engagement and content engagement. This expanded model provides a deeper understanding of how interactivity influences visit intention through engagements in different information processing modes. In addition, this study adds value to the existing literature on different information processing strategies for users with different tourism motivation levels. The results supported the role of tourism motivation as a key construct that influenced information processing strategies.

This study provides specific guidelines for tourism marketers to effectively engage potential tourists with VR in the design of interactive VR tours. Increasing the interactive features would not directly lead to better processing of destination information in a VR tour. This study underscores the crucial role played by technology engagement in the success of VR tourism marketing. It is imperative for practitioners to

understand that interactive features should be implemented with the direct aim of enhancing tourists' technological engagement. Improving technology engagement allows destination marketers to be more successful in eliciting the user's behavioral intention via heuristic processing and improving content engagement through heuristic-systematic processing. Lastly, the findings suggest that technology engagement can be especially useful for designing interactive virtual destinations when tourism marketers are targeting users who are less motivated to travel to the destination. The results can advise destination managers to adjust their communication strategies based on the modes of information processing utilized by visitors with different tourism motivation levels.

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45. EVE: Emotional Voice Expressions, an acted audiovisual corpus

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Type of manuscript: Extended abstract

This work is based on a doctoral thesis in progress

Keywords: speech database; emotions; audiovisual; perceptive study

Extended abstract

In the dynamic interface between humans and technology, the production and perception of emotions are essential for fostering effective communication. The capacity of Artificial Intelligence (AI) systems to accurately perceive, interpret, and react to human emotions is critical, especially in immersive environments with virtual agents capable of detecting emotions. This paper presents the EVE (Emotional Validated Expression) corpus, an acted audiovisual corpus in both English and French currently validated by a perceptive study involving 2,000 listeners. It meticulously embodies the six basic emotions classified by Ekman in 1999, also known as fear, anger, happiness, sadness, disgust, and surprise. It also encompasses four complex emotions: self-confidence, confusion, contempt, and empathy (Perry et al., 2011; Hess et al., 2003; Hareli et al., 2018; Geer et al., 2000). The addition of the four complex emotions was guided by the Warmth and Competence model (Fiske et al., 2007), a well-established framework that assesses how individuals perceive others using the dimensions of Warmth (friendliness and trustworthiness) and Competence (efficiency and skill). With its free accessibility under an open license, the EVE corpus aims to become an indispensable asset for research and innovation in AI, Robotics, and Smart Interfaces, thereby contributing to the evolving narrative of Industry 4.0.

The development of the EVE corpus was driven because many existing emotional speech corpora used for Speech Emotion Recognition (SER), such as CREMA-D (Cao et al., 2014), IEMOCAP (Busso, 2008), and RAVDESS (Livingstone, 2018) in English, EmoV-DB (Adigwe et al., 2018) and EmoVox (Schrerer, 2013) available in both English and French, along with CaFE (Gournay et al.) and Oréau (Kerkeni et al., 2020) in French, often exhibit shortcomings including limited data volume, restricted emotional variety, narrow actor diversity, absence of phonetic balance, and sometimes lack of validation (see Table 1). Among other available datasets, the HUME dataset (Cowen et al., 2019) offers an extensive collection of over 40,000 samples. However, it might remain inaccessible for many researchers due to its cost or specific usage restrictions.

The primary goal of the EVE corpus is to fill the gap in the availability of validated and high-quality SER databases for both English and French. To achieve this, the corpus provides a diverse collection of phonetically balanced sentences produced in diverse emotions, ensuring equal representation of genders among the actors. Moreover, the corpus is undergoing validation through a comprehensive perceptive study that engaged 2,000 listeners to assess the emotion conveyed in each recording.

The EVE corpus was developed by emphasising the production of high-quality recordings. The recording sessions took place in a professional soundproof room. Actors were equipped with a high-quality microphone headset connected to an external sound card. A tracking camera was positioned to record the actors' facial expressions and upper body movements. For each language, ten actors performed each sentence from the Harvard (Rothausser et al., 1969) and FHarvard (Aubanel et al., 2020) lists, known for their phonetic balance, with every emotion with two different intensities (low and high) and a neutral state. To maintain consistency, each actor repeated each sentence an emotion combination twice (repetition technique in acting). This comprehensive approach resulted in 4,100 high-definition audiovisual recordings per language, ranging from 2 to 10 seconds.

For validation, the EVE corpus is undergoing a detailed perceptual study in each language to assess the emotions perceived in 2,000 selected recordings (i.e., the second attempt of each emotional recording). This involves 1,000 speakers of English and French respectively, (covering, in each language, a broad linguistic and cultural diversity), evaluating the recordings via an online platform. The study presents listeners with a randomised selection of recordings, asking them to identify and rate their confidence in the emotions depicted, first using audio cues only and then the audiovisual content. Each listener evaluates 50 clips randomly, ensuring comprehensive corpus coverage and adequate listener responses for statistical reliability.

The foundational hypotheses were formulated based on a comprehensive review of the current literature and initial investigations into the expression and recognition of emotions. Research indicates that basic emotions, as defined by Ekman (1999), are generally recognised universally across various cultures and languages, as evidenced by studies conducted by Monroy et al. (2022) and Cowen et al. (2019). This recognition extends to computational models. However, recognising complex emotions presents a more significant challenge due to their subtler manifestations and heavier reliance on context, as Cowen et al. (2019) discussed. Recent research by Tomar (2024) reaffirmed the significant role of visual cues in enhancing emotion recognition, offering vital supplementary information to auditory signals. This leads to the following hypotheses:

- H1: Basic emotions will have higher recognition (H1a) and higher (H1b) confidence rates in both languages than complex emotions.
- H2: Visual cues will significantly enhance the recognition (H2a) and confidence (H2b) rates, providing additional information to auditory cues.
- H3: Emotions expressed at higher intensities will be recognised more easily, as more pronounced emotional expressions tend to be clearer and more discernible.

The study is anticipated to conclude by early June, when a comprehensive assessment of the corpus and its applicability will be available. The analysis will delve into the recognition rates of emotions, examining these rates regarding the complexity of emotion, the language (French vs. English), and the presentation modality (audio vs. audiovisual). Preliminary findings are already aligned with our initial hypotheses.

The EVE corpus represents a pivotal advancement in SER, combining technological innovation with a focus on human-centric communication, which aligns with Industry 4.0's vision of integrating intelligent systems into everyday human activities. Through the meticulous development of the corpus and its extensive perceptive validation, the project is set to enhance AI's emotional intelligence, promising to transform human-computer interactions across various sectors such as healthcare, education, and entertainment using virtual environments and virtual agents capable of detecting the emotions of the immersed person. This endeavour aims to make AI interactions more

natural and intuitive and underscores the corpus's potential to become a critical resource for the research and development community.

Table 1. Most popular open-access corpora

Name	Modality	Type	Nb. speakers	Nb. emotions	Nb. intensities	Phonetical balance	Perceptual study
French							
CaFE (Gournay <i>et al.</i> , 2018)	Audio	Acted	12	6+neutral	1	x	x
EmoV-DB (Adigwe <i>et al.</i> , 2018)	Audio	Acted	1	4+neutral	1	v	v
EMOVOX (Scherer, 2013)	Audio	Induced Acted	54	2	1	x	x
Oréau (Kerkeni <i>et al.</i> , 2020)	Audio	Acted	32	7	1	x	v
English							
CREMA-D (Cao <i>et al.</i> , 2014)	Audio-visual	Acted	1	5+neutral	3	x	v
EmoV-DB (Adigwe <i>et al.</i> , 2018)	Audio	Acted	4	4+neutral	1	v	v
EMOVOX (Scherer, 2013)	Audio	Induced Acted	16	2	1	x	x
IEMOCAP (Busso, 2008)	Audio-visual	Acted	10	8+neutral	1	x	x
RAVDESS (Livingstone, 2018)	Audio-visual	Acted	24	7+neutral	2	x	v

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46. Can AI Nudge Bystanders to Intervene in Incivility Cases on social media? Analyzing the Role of Automatic and Reflective Motivation

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Keywords: incivility; social media; artificial intelligence; nudging; AI nudging; bystander

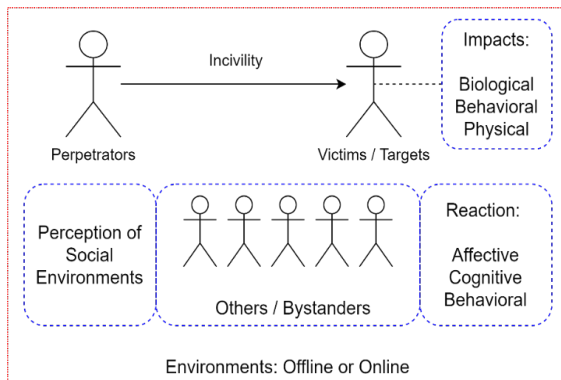
Extended abstract

Social media facilitates meaningful discussions but also presents challenges (Papacharissi, 2004). Engaging in topics demands rationality and openness, yet online free speech can lead to irritable and reactive behavior due to online impulsivity. This often results in uncivil comments like insults or derogatory speech (Lapidot-Lefler & Barak, 2012; Borah et al., 2022).

Online incivility occurs during discussions of controversial and polarizing topics (Borah et al., 2022; Oz et al., 2018). Online incivility refers to using rude, disrespectful, or improper language in online discussions (Anderson & Huntington, 2017) such as trolling, flaming, shaming, cyber harassment, and cyberbullying (Coe et al., 2014). For example, Borah et al. (2022) found that after Trump's tweet, four members of Congress received uncivil comments, including name-calling and threats. Incivility affects victims' well-being and impacts how people perceive online social environments (Fig 1) (Cortina et al., 2022).

There's concern about using bystander intervention to provide social support (Darley & Latané, 1968; Kim, 2021) because it can decrease incivility through empathy also plays a role and takes time to develop (Geldart et al., 2018; Sakurai & Jex, 2012). Fast AI development is expected to encourage positive behavior online by acting as a neutral mediator, regardless of user involvement. AI could be induced with a nudge mechanism to promote prosocial behavior (Oliveira et al., 2021; Raveendhran & Fast, 2021). Hence, this study explores how AI interventions could encourage bystanders to intervene in the incivility discussion.

Figure 1. Actors' Interactions in Incivility



We aim to answer the following research question: how do different AI nudging mechanisms through the lens of motivational (reflective and automatic) and information disclosure (hidden and disclosed) affect the bystanders to intervene in the incivility discussion on social media?

Literature Review

Coping Strategy through Bystander Intervention

Bystanders play a crucial role in intervention, but there's little attention to the bystander effect where people are less likely to intervene when others are present (Darley & Latané, 1968; Latané & Darley, 1969). This research aims to explore bystander intervention, which involves noticing incivility, interpreting it as an emergency, feeling a prosocial responsibility, planning to act, and implementing it (Darley & Latané, 1968). Others can influence intervention, but as AI advances, it has the potential to encourage prosocial behavior through nudges. (Oliveira et al., 2021; Raveendhran & Fast, 2021).

Nudging

Thaler & Sunstein, (2008) introduced the notion of nudging, which explores ways to influence decision-making without limiting choice. For example, putting a star or thumbs up next to a particular item on a menu indicates that the item is recommended. Although much research on nudging has been conducted in physical environments, there is increasing interest in applying it in digital spaces due to advances in web and AI technologies (Weinmann et al., 2016; Schneider et al., 2018).

It works through automatic and reflective processes, and information disclosure, promoting transparency and informed decision-making. Automatic nudging is immediately visible, encouraging positive feedback (Strack & Deutsch, 2004), while reflective nudging involves prompts encouraging users to reconsider their decisions (Rothman et al., 2009).

Decision-making relies on providing information or cues through information disclosure (Afifi & Afifi, 2015; Chaudoir & Fisher, 2010). There are two information disclosure mechanisms: hidden and disclosed (Boerman & Van Reijmersdal, 2016; Montero & Sheth, 2021). Hidden information occurs when not all facts are available, potentially leading to biased decisions. Information openness promotes transparency and accountability for making informed choices. Nudging subtly influences behavior, while information disclosure provides necessary data for decision-making. Disclosed information encourages transparency and informed decision-making, whereas hidden information can result in biases. Hence, we hypothesize that:

H₁: Reflective motivational nudging leads to a higher individual's sense of agency than automatic motivational nudging

H₂: Reflective motivational nudging leads to lower individuals' fear of isolation than automatic motivational nudging

H₃: Information disclosure moderated the relationship between motivational nudging and (a) a sense of agency; and (b) fear of isolation. Disclosed information leads to (a) a higher sense of agency; and (b) a lower fear of isolation.

Human and AI Agency

Human and AI agency means that humans and artificial intelligence (AI) can act and make decisions independently in complex situations. It's about how humans and technology interact, each having the ability to perform its specific tasks (Bandura, 1989). Humans are good at understanding complex contexts, values, and goals, while AI excels at processing big data and performing fast and accurate analysis. When they work together, they can achieve better results. Hence, we hypothesize that:

H₄: Sense of agency mediates the relationship between motivational nudging and responsibility to help.

H₅: Sense of agency mediates the relationship between motivational nudging and willingness to intervene.

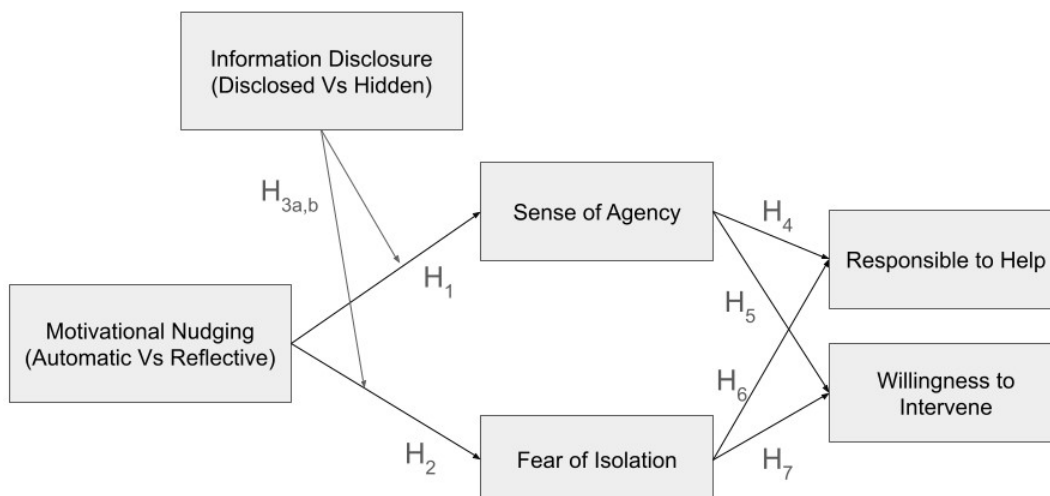
Fear of Isolation and Bystander Intervention

Fear of silence is feeling uncomfortable sharing thoughts about a topic (Hayes et al., 2013). The bystander effect, where people hesitate to act in an emergency when others are nearby, can be caused by a fear of isolation. Each person may expect someone else to act, resulting in no action, known as shared responsibility. People may also fear standing out in a group and being the only one to act. See Figure 2 for our research model and hypotheses.

H₆: Fear of isolation mediates the relationship between motivational nudging and the responsibility to help.

H₇: Fear of isolation mediates the relationship between motivational nudging and willingness to intervene.

Figure 2. Research Framework



Research Methodology

We conducted preliminary studies with 37 participants (Male: 14; Female: 23); most of them were students who were actively involved on social media. The age of participants ranges from 20 – 35 years old. In the preliminary data collection, this research has four treatment groups, combining motivational nudging (automatic vs reflective) and information disclosure (disclosed vs hidden). We conducted a scenario-based randomized online experiment. The participants should watch the videos within 1-2 minutes, explaining the current incivility discussion on social media. Then, an AI chatbot can nudge users to intervene in incivility cases.

Automatic and disclosed is a type of nudging that is automatic and immediately visible to others. Users seem to be reminded to give positive feedback rather than negative comments. Automatic and Hidden is a type of automatic nudging that is not directly visible to the user (Rothman et al., 2009). Reflective disclosure nudging involves providing users with information or prompts encouraging them to reconsider their decisions (Lemken, 2021). The last type of nudging is Reflective and Hidden. It offers information or hints that shape users' choices without explicitly stating its purpose (Goldstein et al., 2008).

All item questionnaires are from previous studies, starting from dependent variables: willingness to intervene with 1 item question (Kazerooni et al., 2018), responsibility to help with 3-item questions (Obermaier et al., 2016), fear of isolation with 7-item questions (Hayes et al., 2013), and sense of agency with 13 item questions, including sense of negative agency and sense of positive agency (Tapal et al., 2017). The scenario and questionnaires are available upon request.

Preliminary Findings

37 participants are distributed across 4 treatment groups: (1) automatic and disclosed with 10 participants; (2) automatic and hidden with 8 participants; (3) reflective and disclosed with 11 participants; (4) reflective and hidden with 8 participants. We acknowledge that in this preliminary study, the sample size is too small. We conducted a preliminary analysis of our data using Univariate Analysis on SPSS 26. Our preliminary analysis found that there is a significant effect of motivation on fear of isolation ($\text{Mean}_{\text{automatic}} = 3.0570$; $\text{Mean}_{\text{reflective}} = 3.5725$; $F_{(1,33)} = 2.370$; $p < 0.05$). We also found a moderator effect of information disclosure on fear of isolation ($F_{(1,33)} = 5.932$; $p < 0.05$). Meanwhile, we find a significant effect of motivational nudging on the sense of agency ($\text{Mean}_{\text{automatic}} = 3.3528$; $\text{Mean}_{\text{reflective}} = 3.2221$; $F_{(1,33)} = 4.241$; $p < 0.05$). However, we did not find any moderation effect of information disclosure on the sense of agency. Hence, our preliminary study accepted H_1 , H_2 , and H_4 and rejected H_3 .

Our next steps are collecting more data and enhancing this study with study 2, by understanding the language usage in nudging communications. McFarlane et al. (2020) proposed using the foreign language effect (FLE) to enhance the nudging effect. However, no empirical evidence is evaluating this effect on the AI-enabled nudging effect. Does it is effective to use foreign language in nudging the incivility cases and encourage bystanders to intervene?

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47. User-Created Content: Developing New Fan Stories in Immersive Online Communities

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Type of manuscript: Extended abstract

Keywords: user-created content; immersion; online communities; fandoms

Extended abstract

Introduction

The Entertainment sector is at an inflection point. Creative efforts are increasingly occurring outside professional practices that seek to overcome mass media limitations such as the dominance of high-profile IP franchises. The shift in power and control from organizations to consumers activated on digital platforms using digital tools will enable creative individuals to build content collectively with others.

This User-Created Content (UCC) is being developed in decentralised networks like Online Communities (OCs) that are facilitating User-Fan Innovation and rewarding their subsequent ownership. This collective creator power represents a new form of value creation that is leading to a new and fundamentally different entertainment product form - one that is emergent, unpredictable and dynamic.

The Growth of the Creator Economy

According to Jin (The Economist, 2021) the “creator economy”- the platforms and tools that allow creative individuals to share content, build an audience and make money in various ways - now worth over \$100bn.

Whilst previously the imbalance of power between proprietary platforms and the creators using them meant the latter resembled an underclass of workers who were in a weak position to push for change, today’s changing rapidly market mitigates this and is inducing profound change. Today’s creators can express their views via bottom-up organising and harness new-found power (Labreque et.al, 2013) to instigate creator ownership that eliminates conflict between platforms and participants to deliver that growth that benefits all stakeholders.

Research Objectives

The research undertaken explored this fundamental change in the entertainment sector by investigating how fans could develop a new entertainment product form - UCC (Ostman, 2012) constructed in OCs. A Case Study approach (Yin, 2018) used the *Judge Dredd* IP that has been developed across the key entertainment mediums of Film, TV and Games to explore potential development and creative synergies from a fan perspective.

This new, fan-orientated paradigm of co-creation entertainment represents a shift in power away from organizations and is driving the desire and ability of fandoms to produce their own authentic content form. Traditional, mainstream organizations need to react and respond to this inflection point in the entertainment industry as this changed, new dynamic offers’ new, exciting and unique content possibilities by

enabling an existing or new IP to be developed and co-created by audiences in a different way.

The research results effectively closed the identified Research Gap by successfully answering the Research Question:

What is the potential role of online communities and fan-participation innovation in the development of new, co-created entertainment storytelling and content?

Research Methodology

Netnography was selected as the central research methodology as it enabled study of the rapidly growing participation by audiences in OCs to create their own content. By immersing in, and netnographically observing, four (Comic, Film, TV and Games-orientated) *Judge Dredd* OCs on Facebook over a three-month period, (July-September, 2020) rich research data was accumulated and then analysed to identify new user-created story ideations and potential narrative pathways.

To achieve this, the research process adopted thematic analysis that identified three, key themes relating to *Judge Dredd* UCC for subsequent evaluation: Story Interrogation of existing narrations from the *Judge Dredd* story canon; Character Development of current characters and; Fan Story Ideas, i.e. new and original UCC products.

Research Findings

The Research Findings demonstrated clear evidence that the *Judge Dredd* fandom were not only dissatisfied with the current narrative path of the IP, but also had new and different ideas about how it could be developed in alternative ways.

The analysis subsequently conducted enabled the Researcher to segment the Research Findings into the three core themes and then identify several UCC potential ideas and narratives. These were then developed via a specific OC development process consisting of six stages that produced original, fan UCC:

Stage 1: Development of a Specific Network Effect

Stage 2: New, Bottom-Up Collective Intelligence and IP Knowledge Repository

Stage 3: Build Multiple Knowledge Sources

Stage 4: Fan Interaction

Stage 5: Collaborative Filtering

Stage 6: Fan Interpretations

This process can be applied to different Intellectual Properties.

Discussion and Conclusion

The results demonstrated how fandoms new-found ability to create their own content using digital technology provided a genuine alternative to the more commercially-orientated content forms provided by professional providers.

They did so by engaging with an entertainment product to directly influence its development by co-creating their own stories. Their ability to develop content directly results from the increasing empowerment afforded by digital technology (Labreque et.al, 2013) which is fundamentally changing consumer behaviour both per se and in the entertainment sector specifically.

The original Research Findings identified not only a new UCC Development Process and Model, but how OCs provide the unique creative fan frameworks that enable creation of intrinsic value and social capital that critical components of UCC. Research Finding 4 highlighted how the process of creating content collectively per se was as appealing as its final consumption.

These findings also offer the potential for further investigation into how the absence of deeper understanding into how a new form of entertainment content (UCC) can be developed for all entertainment IP using OCs as content creation frameworks (Duffett, 2013) through the deeper immersion of fans within them.

OCs as an immersive technology provide aa creative tool that enable a new product development process online incorporating socialization that contributes to new forms of value and an original and exciting form of entertainment content.

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48. The Impact of AI Chatbots on Consumer Behaviour Outcomes: Exploring the Concept of Brand Personality

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Type of manuscript: Extended Abstract

Keywords: Chatbot type; brand personality perception (BPP); consumer behaviour outcomes; Generation X; Generation Z

Extended Abstract

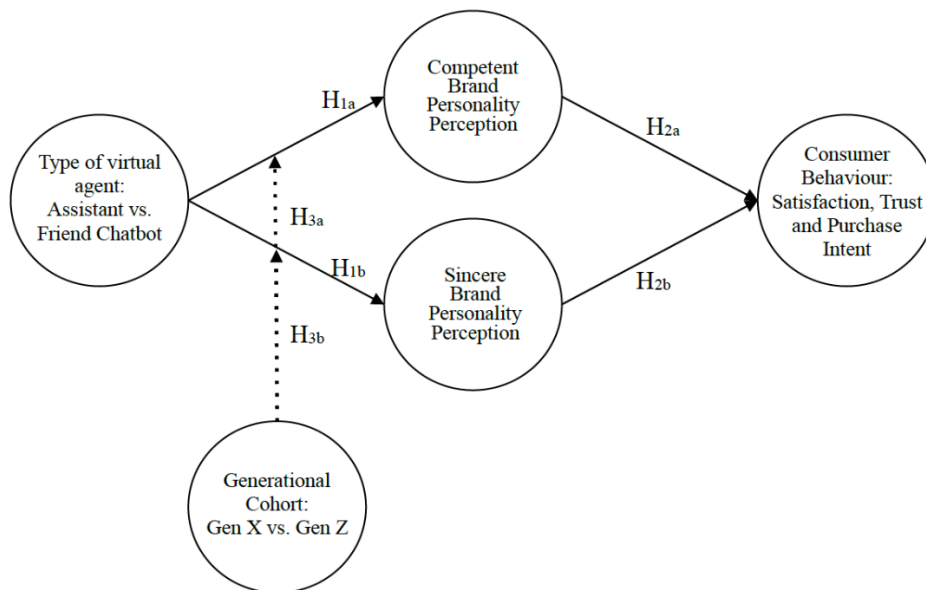
In today's rapidly evolving digital landscape, consumer-brand interactions are increasingly mediated by technology, with AI-powered chatbots emerging as a prominent element in this relationship (Jiang *et al.*, 2022). Since their inception, chatbots have revolutionised the way consumers engage with brands, offering immediate assistance, personalised recommendations, and round-the-clock support (Belanche *et al.*, 2020). However, amidst this technological advancement, a critical area remains relatively unexplored—the impact of consumer-chatbot interactions on consumer-brand relationships.

Research in the field (Bergner *et al.*, 2023; Magno and Dossena, 2023; Yang and Hu, 2022; Youn and Jin, 2021) has highlighted an important gap in understanding how different types of chatbot conversational styles, for example, formal vs friendly, influence consumers' perceptions of brand personality and, subsequently, their behaviour. Consequently, this study addresses this gap by investigating the impact of different chatbot conversational styles on consumers' brand personality perception and its consequential effect on consumer behaviour outcomes, specifically purchase intent, satisfaction, and trust.

Furthermore, while age is often acknowledged as a significant factor influencing consumer behaviour (Rabby *et al.*, 2021; Ransbotham *et al.*, 2017), its role as a moderating factor in the context of consumer-chatbot interactions remains underexplored. Existing research has yet to investigate whether consumers' generational background impacts their perceptions of a chatbot, in terms of warmth and competence (Maar *et al.*, 2023), and ultimately the brand they represent (Chung *et al.*, 2020; Zarouali *et al.*, 2018). Hence, this study also seeks to examine the effect of age as a moderating variable on the relationship between chatbot conversational style and brand personality perception. As a result, this study is guided by two research questions: (1) How does the influence of different chatbot conversational styles on consumers' brand personality perceptions affect consumer behaviour outcomes? (2) How does age impact the effect of a chatbot's conversational style on the consumer's brand personality perceptions?

The research model is presented in Figure 1.

Figure 1. Research Model



By addressing these research questions, this study aims to contribute to the advancement of knowledge in the field of consumer-brand relationships and inform the design of chatbots for enhanced consumer experiences and long-term brand success.

A scenario-based, between-subjects, 2x2 factorial experiment was conducted to analyse the causal impact of different chatbot conversational styles. The two independent variables were chatbot conversational style and generation.

The two conversational styles were operationalised as follows: (1) the use of formal language, characterised as a virtual assistant chatbot using a task-oriented communication style, prioritising task efficiency and competence; (2) the use of informal dialogue and friendly conversations, characterised as a virtual friend chatbot using a social-communication style, aiming to meet consumers' emotional requirements while providing assistance (Xu *et al.*, 2023).

The two generations included in the study were Generation X (Gen X - 1965 and 1980) and Generation Z (Gen Z - late 1990s and early 2000s). These two generational cohorts were chosen for their opposing views on AI (Salesforce, 2023).

Participants were presented with a scenario, which required them to imagine themselves as experienced runners. Participants were then asked to interact with a chatbot in real-time order to obtain recommendations for the best running shoes. The chatbot was specifically programmed for this study using the IBM Watson platform. Two chatbot variations were implemented (one formal and one friendly) and participants were randomly allocated to each of the variations. A total of 210 responses, distributed among the 4 cells, were obtained. Following the interaction with the chatbot, participants were required to answer questions through an online questionnaire. Pre-validated measures were utilised.

The results showed that the chatbot framed as a friend led to a brand personality perception of sincerity, whilst the chatbot framed as an assistant led to a brand personality perception of competence.

Sincerity led to higher consumer satisfaction, trust and purchase intent than competence, implying that despite their significant contribution towards the three consumer

behaviour outcomes, sincerity (established through the friend chatbot) might be an overall better personality trait to adopt in brand chatbots.

Generation was established as a moderator in the relationship between chatbot conversational style and brand personality perceptions. The effect of chatbot conversational type on brand personality perceptions differed across the generational cohorts, such that Gen X were found to be more likely to perceive chatbots as competent rather than sincere.

The results, which demonstrate that the two different chatbot types resulted in different brand personality perceptions, highlight the importance of consumer-brand congruence (Popp and Woratschek, 2017) and aligning chatbot design with consumer needs. This can enhance consumers' brand experience and contribute to better consumer behaviour outcomes (Rabby *et al.*, 2021; Ransbotham *et al.*, 2017).

The brand personality perception of sincerity had a more significant impact on trust and purchase intent, than the personality perception of competence. This result substantiates previous literature, stating that chatbots with a strong sense of social presence, human-like attributes, and a conversational interface, contribute to higher levels of trust (Jiang *et al.*, 2022) and that interactive chatbot dialogue through high engagement can increase purchase intent (Suresh *et al.*, 2023).

The establishment of generation as a moderator might have stemmed from Gen Z and Gen X's opposing views on AI (Salesforce, 2023), different levels of risk avoidance and willingness to use chatbots (Calvo-Porrall and Pesqueira-Sanchez, 2020), which ultimately influence their interactions with chatbots and these conversations' outcomes. These results suggest significant theoretical implications for the design and implementation of chatbots within consumer-brand interactions. Specifically, they highlight the necessity for chatbot design to be rooted in an understanding of consumers' characteristics and needs, ensuring congruence with their values. The results also highlight the importance of aligning chatbot features with consumer preferences to foster a perception of brand personality that resonates with consumers.

The choice of chatbot type holds implications for various consumer behaviour outcomes, such as trust and purchase intent. Depending on the selected chatbot type, the level of influence on these outcomes may vary. Therefore, understanding the nuanced effects of different chatbot types on consumer behaviour outcomes is key for informed decision-making in brand management strategies. In view of this, prior to integrating new chatbot designs, brand managers are advised to consider which type of chatbot, and subsequently, brand personality perception, predominantly contributes to the desired consumer behaviour outcome. By discerning these factors, brand managers can tailor chatbot design features accordingly.

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49. The Role of Generative Artificial Intelligence (GAI) in Retailing

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Extended abstract

The recent advancements in Artificial Intelligence (AI), with emphasis on generative AI have reshaped and continue to reshape the retail industry (Kshetri et al., 2023). It not only changes the way retailers interact with customers but also reshapes customer experience by facilitating the personalization of the customer journey (Dwivedi et al., 2023; Baabdullah, 2024). In this context, retailers are increasingly turning to generative AI-powered customer experience solutions to build a brand and improve customer satisfaction, loyalty, and retention in both digital and physical settings (Ameen et al., 2020). For instance, many retailers already introduced chatbots in their website to provide 24/7 consumers assistance. Thus, with the capabilities of generating high-quality, contextually relevant, and easily customized content able to mimic and even replicate human-created work (Banh & Strobel, 2023), generative AI has been perceived as a promising tool in retailing for gaining competitive advantages and enhancing overall customer experience in both physical and digital settings (Kshetri et al., 2023). Indeed, generative AI can: i) understand and predict consumer behavior and preferences (Pantano & Scarpi, 2022); ii) facilitate the personalization of the customer journey, such as providing customized product recommendations (Dwivedi et al., 2023); iii) provide automatic customer service with human-like responses through generative AI chatbots (Pizzi et al., 2021); iv) generate personalized marketing contents, products, and services (Kshetri et al., 2023).

While generative AI brings significant benefits to the retail industry, numerous retailers have struggled to implement them effectively, particularly in bridging the gap between physical and digital customer experiences (Grewal et al., 2023). This is due to the lack of a comprehensive understanding of the impact of generative AI on customer experience in the 'phygital' (a fusion of 'physical' and 'digital') setting (Batat, 2022). The term 'phygital' has been defined as 'the transformation of physical stores in the digital era' (Batat, 2024). It involves the complete redesign of traditional concepts to provide a new customer experience while also incorporating digital tools to enhance sales support (Banik & Gao, 2023).

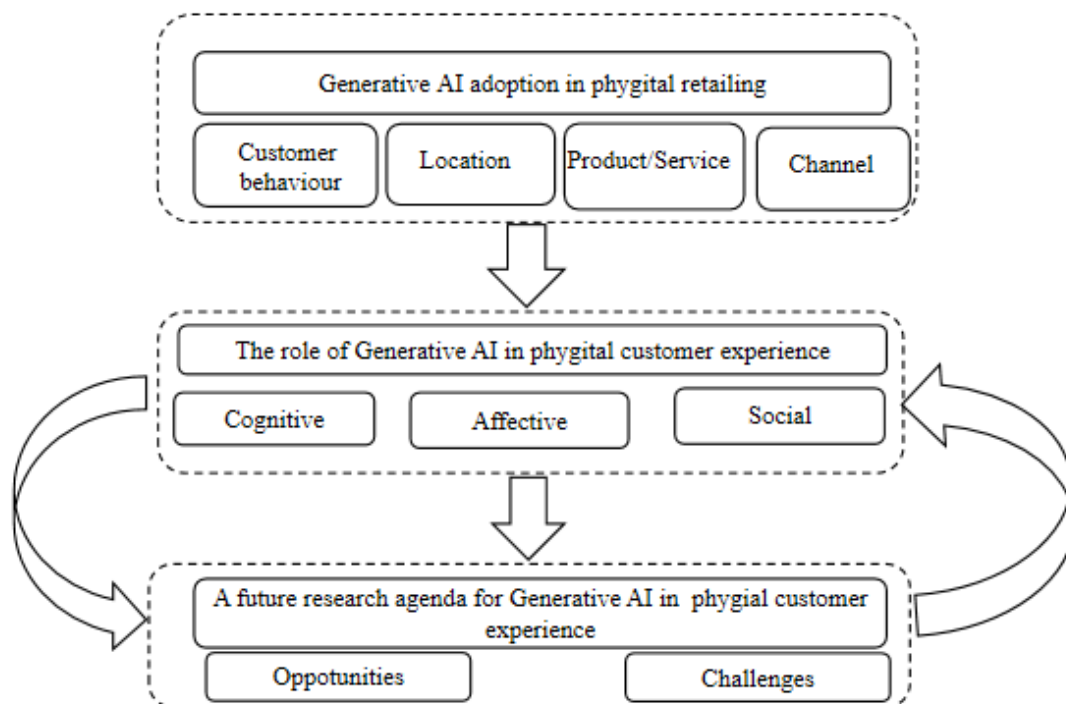
In the phygital setting, retailers are increasingly turning to generative AI-powered customer experience solutions to build a brand and improve their customer satisfaction, loyalty, and retention (Ameen et al., 2020). It is reshaping customer interactions (Dwivedi et al., 2023), while it might elicit either positive or negative emotions in consumers (Pantano & Scarpi, 2022) and putting consumers' privacy at risk (Scarpi and Pantano, 2024). Similarly, scholars are debating the extent to which automated service impacts consumers' social presence (Flavian et al., 2024), or if it creates a new retail environment, losing the social aspect of shopping. Accordingly, Mariani and Dwivedi (2024) suggest that the rapidly changing and continually evolving landscape of

generative AI necessitates new comprehensive and integrative frameworks and guidelines. These are crucial for understanding how to create personalized customer experiences across both physical and digital channels, while protecting consumers from any risk.

Indeed, numerous generative AI solutions have been employed across different components of the retail sector, including product, customer behavior, location, and channel management, significantly transforming customer phygital experience. These innovations have notably reshaped the customer phygital experience, resulting in both positive and negative outcomes, thereby presenting both opportunities and challenges for retailing.

Accordingly, the aim of this theoretical work is to provide a comprehensive understanding of the impact of generative AI on phygital customer experience. This is achieved by proposing a framework and highlighting the opportunities and challenges in various components of retailing, including: (i) customer behavior (encompassing consumer in-store experience, purchasing behavior, and shopping as a social experience); (ii) product/service (from development to information delivery and stock-out); (iii) retail location and planning, and (iv) channel management (Figure 1).

Figure 1. The role of generative AI in phygital customer experience



The present paper makes several contributions to AI, retailing, and consumer research. First, our findings contribute to the literature by providing a comprehensive understanding of AI retail and consumers applications, with emphasis on generative AI in retailing compared to “traditional” AI solutions. Second, to the best of our knowledge, this study represents the initial attempt to present a conceptual overview of generative AI in retailing by investigating its role in customer phygital experience and highlighting the associated opportunities and challenges. This helps raise awareness of

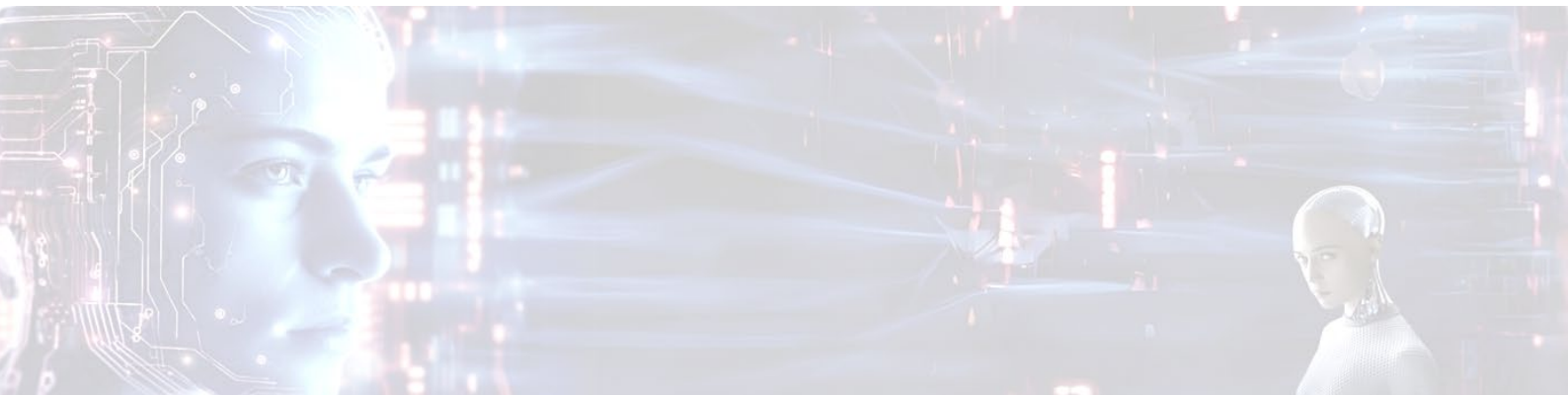
constraints while also supporting future efforts in developing generative AI-powered solutions in retailing and marketing.

This paper is organized as follows: First, we discuss the adoption of generative AI in phygital retailing. Following this, we examine how generative AI tools influence phygital customer experience. Finally, we conclude with a summary of the study and propose a research agenda for future research by highlighting the opportunities and challenges faced retailers.

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