



HAL
open science

Guest editorial: More supportive or more distractive? Investigating the negative effects of technology at the customer interface

Eleonora Pantano, Jamie Carlson, Konstantina Spanaki, George
Christodoulides

► To cite this version:

Eleonora Pantano, Jamie Carlson, Konstantina Spanaki, George Christodoulides. Guest editorial: More supportive or more distractive? Investigating the negative effects of technology at the customer interface. *International Journal of Information Management*, 2024, 75, pp.102752. 10.1016/j.ijinfomgt.2023.102752 . hal-04478502

HAL Id: hal-04478502

<https://audencia.hal.science/hal-04478502>

Submitted on 27 Feb 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Guest Editorial: More supportive or more distractive? Investigating the negative effects of technology at the customer interface

Eleonora Pantano

University of Bristol Business School, Bristol BS8 1SD, UK

Jamie Carlson

Newcastle Business School, University of Newcastle, Newcastle, NSW 2300, Australia

Konstantina Spanaki

AUDENCIA BUSINESS SCHOOL, 44312 Nantes, France

George Christodoulides

American University of Sharjah, UAE, Department of Marketing & Information Systems,
School of Business Administration, UAE

Guest Editorial: More supportive or more distractive? Investigating the negative effects of technology at the customer interface

Abstract. The continuous development of technology leads to stimuli-dense consumption environments for consumers. Although the literature primarily highlighted the advantages of adopting technologies to support consumers' decision-making process, these systems may also require too much attention and excessive effort to be considered always rewarding. Accordingly, this special issue addresses the interplay between technology-supported consumption experiences and the related distracting mechanisms triggered by this interaction in varied contexts. Specifically, the actual collection of papers in this special issue covers three main themes: (1) conceptualizing a Customer Smartphone Distraction (CSD) organizing framework, (2) drivers (including musical atmosphere, the context of the application, parasocial interaction and anthropomorphisms of virtual agents), and (3) consequences (cognitive, affective and behavioral responses, including sensory overload and discomfort).

Keywords: Technology; digital marketing; distraction; consumer behavior; virtual agents; metaverse

1. Introduction

In the last few decades, a wide variety of technologies has been integrated in the marketplace to enhance the customer experience, leading to stimuli-dense consumption settings (Pantano, Pedeliento, Christodoulides, 2022). Such digital transformation has substituted or augmented traditional face-to-face consumer interactions with virtual assistants (i.e., mobile applications enabling self-checkout, locating products in stores automatically, or planning and visiting destinations without a human tour guide). Following the COVID-19 pandemic disruptions, many innovative technologies were explored to reduce consumers' and service personnel's exposure to the virus. For instance, in hospitality, new systems like service robots have been introduced to limit guest interactions with employees and improve hygiene and cleanliness (Shin & Kang 2020). Likewise, the tourism and hospitality industry is increasingly adopting Artificial Intelligence (AI) systems such as intelligent voice assistants (e.g., Siri, Alexa, Google Assistant) to help travelers in several activities such as hotel room services and visit planning (Loureiro et al., 2021). In retail settings, robotic and self-service systems have been introduced to facilitate contactless shopping either in brick-and-mortar stores or at home (e.g., new apps to find favorite items and pay in the store automatically, or new delivery modalities), and Augmented and Virtual Reality (AR and VR) to boost consumer engagement with retailers, brands, and products while delivering novel consumption experiences (Sung et al., 2021), and safeguarding consumers' safety and health (Rahman et al., 2022a). Nevertheless, these novel systems are able to balance the unavailability of human workers, thus providing automated experiences that could elicit satisfaction (Pala et al. 2021). However, incorporating new technologies (e.g., VR, AR, AI) into today's consumption experiences might lead to both positive (e.g., enjoyment, escapism, efficiency, convenience) and negative (e.g., frustration, stress, binge-watching, visually induced motion sickness, isolation, addiction, unhappiness, etc.) impacts on consumers, and broader society (Nanda & Banerjee 2020; Pantano & Scarpi, 2022).

Although literature primarily highlighted the advantages of adopting technologies to support consumers' decision-making process, these new systems also impact human-to-human interactions, causing companies to change their marketing and communication strategies to reach customers (e.g., shift to digital influencers) (Mishra et al. 2021; Hollebeek et al. 2021; Dwivedi et al., 2023a); whereas technology implementation radically changes the nature of relationship experiences between individuals and retailers (Huang & Rust, 2022), atmospherics (Roggeveen et al. 2020), and

the way consumers process and combine information from the offline and online consumption environments (Rahman et al., 2022b; Yang et al., 2020). Besides, Kotler and colleagues (2017) portrayed how new technology might further turn consumers from being informed to becoming distracted. Consequently, using these systems may also require too much attention and excessive effort to be considered always rewarding, pushing consumers to focus on the technology characterized by several tasks, complex features, and unfamiliar or unresponsive interfaces. Noticeably, this interaction might potentially reduce consumers' perception of atmospherics or other environmental stimuli, especially when these are below the consciousness threshold. Similarly, these technologies act either as "collaborators" or "opponents" (Han et al., 2023; Peng et al., 2022). Thus, technology would move from being a supporting tool for customers to being a distractive mechanism that inhibits purchase behavior. For instance, in a luxury point of sale, technology may inhibit prospective consumers from the opportunity to interact with sales assistants, who might provide additional information about the history, craftsmanship, heritage, tradition, and outstanding product quality. In other circumstances, technology is a beneficial tool facilitating beneficial access to luxury services or products that would otherwise be unattainable (Christodoulides et al., 2021).

Likewise, if tourists' attention is focused on a mobile device showing the best route to a specific destination, this technology catches attention and leads them to ignore other attractions on the travel journey. This dyadic nature of technology is barely researched in actual literature. Indeed, authors have recently claimed that unintended consequences for firms, consumers, and broader society still need further investigations (Peterson Fronczek et al., 2023; Dwivedi et al., 2023b). For instance, these adverse effects might span brand trust violations (Lefkeli, Karatas, Gurhan-Canli, 2024), dramatic addiction (Chopdar, Paul, Prodanova, 2022), vulnerability, misinformation, propaganda, and social exclusion (Dwivedi et al., 2023; Pantano et al., 2022). Thus, technology's distractive and adverse effects on the customer interface are still scarcely explored and understood. This is a relevant issue due to the importance of new technology developments and innovations targeting the UN's Sustainable Development Goals (SDGs), including sustainable consumption and societal production (Dwivedi et al., 2022). To this end, this special issue addresses the relationship between technology-supported consumption experiences and the distracting mechanisms triggered by this interaction in varied contexts.

Accordingly, the five papers included in this special issue concentrate their efforts on providing a comprehensive understanding of the supportiveness and distractedness of technological solutions at the customer interface. Each contribution offers guidance and suggestions for academics and practitioners to enhance the understanding of the technologies' positive and negative effects. These papers cover three main themes: (1) conceptualizing a Customer Smartphone Distraction (CSD) organizing framework, (2) drivers (including musical atmosphere, the context of the application, parasocial interaction, and anthropomorphisms of virtual agents), and (3) consequences (cognitive, affective and behavioral responses, including sensory overload and discomfort) (Table 1). Moreover, contributions come from global marketing and technology and information science communities from different countries, including the EU countries, Australia, the United Arab Emirates, and China. In the next section, we outline the papers included in this special issue and discuss their individual and unique contribution to the consumer behavior literature from the viewpoint of the adverse effects of technology implementation.

Theme	Description	Relevant Studies
Theme 1: Distraction	Conceptualizing	<i>"Appetite for distraction? A systematic</i>

Conceptualizations	antecedents, contingency variables, and consequences of customer distraction with technology	<i>literature review on customer smartphone distraction</i> ” (Taylor et al., 2024)
Theme 2: Drivers	Musical atmosphere, the context of the application, parasocial interactions, and anthropomorphism of virtual agents	<p>“<i>Musical atmosphere as a (dis) tractive facet of user interfaces: An experiment on sustainable consumption decisions in eCommerce</i>” (Xu et al., 2024)</p> <p>“<i>The dark side of virtual agents: Ohhh No!</i>” (Mostafa et al., 2024)</p> <p>“<i>The dark side of the metaverse: the role of gamification in the virtualization of cultural events</i>” (Flavian et al., 2024)</p>
Theme 3: Consequences	Cognitive, affective, and behavioral responses, including sensory overload and discomfort	“ <i>Does technology distract Generation Z? The effect of technology distraction on consumers’ responses, sensory overload, and discomfort</i> ” (Priporas et al., 2024)

Table 1. Organizing framework of this special issue: the adverse and unintended effects of technology implementation at the customer interface.

2. An overview of the contribution included in this special issue

In the first paper, Taylor et al. (2024) introduce the concept of Customer Smartphone Distraction (CSD), which arises when an internet-connected mobile device competes for a consumer’s attention during a specific goal-oriented task or behavior. Drawing upon a systematic literature review and supporting qualitative study, the authors develop a conceptual framework incorporating drivers, contingency variables, and effects of CSD. Results suggest that CSD is affected by both environmental stimuli (including audio and visual notifications) and internal psychological states (including anxiety and boredom), which are strictly interrelated. The authors call for customers to reconsider their consumption behavior to deal with this issue. At the same time, businesses, society, and policymakers need to aid customers by providing better education aligned with an improved design of mobile device experiences.

In the second paper, Xu et al. (2024) focus on the extent to which online musical atmosphere can play a supporting versus distracting role in sustainable decision-making. Results show that the fast music tempo has a positive effect on the intention to purchase healthy food while reducing negative emotions if compared to no music or slow music tempo. By contrast, consumers show a more positive attitude towards unhealthy food choices if the music tempo is slow.

In the third paper, Priporas et al. (2024) investigate Generation Z's response to technology distraction cues and related consumer cognitive, affective, and behavioral responses, including sensory overload and discomfort. In particular, the authors confirm that consumers show a higher level of distraction when they are highly involved with the technology, show a limited appreciation of the technology, and the technology is complex.

In the fourth paper, Mostafa et al. (2024) provide a comprehensive understanding of the virtual agents used by firms to develop relationships with consumers, with emphasis on the characteristics

that lead to dissatisfaction in terms of (negative) parasocial interactions and specific anthropomorphic characteristics. In this way, authors suggest virtual agents' pitfalls and consequent actions to anticipate and avoid the negative outcomes.

In the final paper, Flavian et al. (2024) investigate the cultural events taking place in the metaverse and the extent to which users find it challenging to focus on the main elements of the environment. These difficulties lead to the metaverse's inability to convey the cultural event's authenticity. However, improved attention solicited by gamification might improve users' ability to imagine the real experience and increase the perception of authenticity, resulting in a higher behavioral intention.

3. Conclusion

This editorial underscores the paramount significance of studying new customer-facing technologies and their profound influence on consumer behavior. As our digital landscape continues to grow and evolve at an unprecedented pace, the ability to harness the potential benefits while mitigating potential drawbacks has never been more crucial. The collection of papers in this special issue insights into how organizations can capitalize on emerging technologies to enhance customer engagement, and warns against the pitfalls that may arise from a blind embrace of these innovations. By remaining informed and adaptable, scholars and practitioners in the field are poised to shape a future in which technology harmoniously complements and amplifies positive consumer experiences while minimizing the disruptions and adverse effects resulting from their mismanagement.

Eleonora Pantano, University of Bristol Business School, UK

Jamie Carlson, Newcastle Business School, University of Newcastle, Australia

Konstantina Spanaki, Audencia Business School, FR

George Christodoulides, American University of Sharjah, UAE

References

- Chopdar, P.K., Paul, J., & Prodanova, J. (2022). Mobile shoppers' response to COVID-19 phobia, pessimism and smartphone addiction: does social influence matter? *Technological Forecasting and Social Change*, 174, art. 121249.
- Christodoulides, G., Athwal, N., Boukis, A., & Semaan R. (2021). New forms of luxury consumption in the sharing economy, *Journal of Business Research*, 137, 89-99.
- Dwivedi, Y.K., Hughes, L., Kar, A.K., Baabdullah, A.M., et al., (2022). Climate change and COP26: are digital technologies and information management part of the problem or the solution? An editorial reflection and call to action, *International Journal of Information Management*, 63, art. 102456.
- Dwivedi, Y.K., Balakrishnan, J., Baabdullah, A., & Das, R. (2023a). Do chatbots establish "humanness" in the customer purchase journey? An investigation through explanatory sequential design. *Psychology and Marketing*, 40, art. 2244-2271.
- Dwivedi, Y.K., Kshetri, N., Hughes, L., Rana, N., Baabdullah, A.M., Ribeiro-Navarrete, D., et al. (2023b). Exploring the darkverse: a multi-perspective analysis of the negative societal impacts of the metaverse. *Information Systems Frontiers*, 25(5), 2071-2114.
- Flavian, C., Ibanez-Sanchez, S., Orus, C., & Barta, S. (2024). The dark side of the metaverse: the role of gamification in the virtualization of cultural events. *International Journal of Information Management*, Ahead of Print, DOI: <https://doi.org/10.1016/j.ijinfomgt.2023.102726>.

- Han, B., Deng, X., & Fan, H. (2023). Partners or Opponents? How Mindset Shapes Consumers' Attitude Toward Anthropomorphic Artificial Intelligence Service Robots. *Journal of Service Research*, 26(3), 441-458.
- Hollebeek, L., Sprott, D.E., & Brady, M.K. (2021). Rise of the machines? Customer engagement in automated service interactions. *Journal of Service Research*, 24(1), 3-8.
- Huang, M.-H., & Rust, R.T. (2022). A framework for collaborative artificial intelligence in marketing. *Journal of Retailing*, 98(2), 209-223.
- Kotler, P., Kartajaya, H., & Setiawan, I. (2017). *Marketing 4.0: moving from traditional to digital*. Wiley.
- Lefkeli, D., Karatas, M., & Gurhan-Canli, Z. (2024). Sharing information with AI (versus a human) impairs brand trust: the role of audience size inferences and sense of exploitation. *International Journal of Research in Marketing*, Ahead of Print, DOI: <https://doi.org/10.1016/j.ijresmar.2023.08.011>
- Loureiro S. M. C., Japutra A., Molinillo, S. & Bilro R. G. (2021). Stand by me: analyzing the tourist–intelligent voice assistant relationship quality, *International Journal of Contemporary Hospitality Management*, 33(11), 3840-3859.
- Mishra A., Shukla A., Rana N.P. & Dwivedi, Y.K. (2021). From “touch” to a “multisensory” experience: the impact of technology interface and product type on consumer responses, *Psychology and Marketing*, 38(3), 385-396.
- Mostafa, R., Lages, C.R., & Shaalan, A. (2024). The dark side of virtual agents: Ohhh No! *International Journal of Information Management*, Ahead of Print, DOI: <https://doi.org/10.1016/j.ijinfomgt.2023.102721>
- Nanda, A. P. & Banerjee, R. (2020). Binge watching: An exploration of the role of technology, *Psychology & Marketing*, 37(9), 1212-1230.
- Pala, E., Kapitan, S., & van Esch, P. (2021). Simulated satiation through reality- enhancing technology. *Psychology & Marketing*, 39(3), 483-494.
- Pantano, E., Pedeliento, G., & Christodoulides, G. (2022). A strategic framework for technological innovations in support of the customer experience: A focus on luxury retailers. *Journal of Retailing and Consumer Services*, 66, art. 102959.
- Pantano, E., Viassone, M., Boardman, R., & Dennis, C. (2022). Inclusive or exclusive? Investigating how retail technology can reduce old consumers' barriers to shopping. *Journal of Retailing and Consumer Services*, 68, art. 103074.
- Pantano, E., & Scarpi, D. (2022). I, Robot, you, consumer: The effect of artificial intelligence types on consumers' emotions in services. *Journal of Service Research*, 25 (4), 583-600.
- Peng, C., van Doorn, J., Eggers, F., & Wieringa, J.E. (2022). The effect of required warmth on consumer acceptance of artificial intelligence in service: the moderating role of AI-human collaboration. *International Journal of Information Management*, 66, art. 102533.
- Peterson Fronczek, L., Mende, M., Scott, M.L., Nenkov, G.Y., & Gustafsson, A. (2023). Friend or foe? Can anthropomorphizing self-tracking devices backfire on marketers and consumers? *Journal of the Academy of Marketing Science*, 51, 1075-1097.
- Priporas, C.V., Hussain, S., Khaneja, S., & Rahman, H. (2024). Does technology distract Generation Z? The effect of technology distraction on consumers' responses, sensory overload, and discomfort. *International Journal of Information Management*, Ahead of Print.
- Rahman, S.M., Carlson, J., & Chowdhury, N.H. (2022a). SafeCX: A framework for safe customer experience in omnichannel retailing. *Journal of Services Marketing*, 36 (4), 499-529.
- Rahman, S. M., Carlson, J., Gudergan, S. P., Wetzels, M., & Grewal, D. (2022b). Perceived omnichannel customer experience (OCX): Concept, measurement, and impact. *Journal of Retailing*, 98 (4), 611-632.
- Roggeveen, A.L., Grewal, D., & Schweiger E.B. (2010). The DAST framework for retail atmospherics: the impact of in- and out-of-store retail: journey touchpoints on the customer experience, *Journal of Retailing*, 96(1), 128-137.

- Shin, H., & Kang, J. (2020). Reducing perceived health risk to attract hotel customers in the COVID-19 pandemic era: focused on technology innovation for social distancing and cleanliness, *International Journal of Hospitality Management*, 91, art. 102664.
- Sung, E., Bae, S., Han, D.-I. D., & Kwon, O. (2021). Consumer engagement via interactive artificial intelligence and mixed reality. *International Journal of Information Management*, 60, art. 102382.
- Taylor, A., hook, M., Carlson, J., Gdergan, S., & Falk, T. (2024). Appetite for distraction? A systematic literature review on customer smartphone distraction. *International Journal of Information Management*, Ahead of Print, DOI: <https://doi.org/10.1016/j.ijinfomgt.2023.102722>
- Xu, H., Wu, Y., & Hamari, J. (2024). Musical atmosphere as a (dis) tractive facet of user interfaces: An experiment on sustainable consumption decisions in eCommerce. *International Journal of Information Management*, Ahead of Print, DOI: <https://doi.org/10.1016/j.ijinfomgt.2023.102715>
- Yang, Y., Gong, Y., land, L.P.W., & Chesney, T. (2020). Understanding the effects of physical experience and information integration on consumer use of online to offline commerce, *International Journal of Information Management*, 51, art. 102046.