# THE IMPACT OF NEW TECHNOLOGIES ON THE CRUISE TRAVELERS

## **EXPERIENCE: A LITERATURE REVIEW**

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### ABSTRACT

Companies around the world have been adopted different digital technologies such as online stores, digital panels, or even robotic assistance. These new technologies have also impacted the cruise industry, that is one of the fastest-growing sectors within the hospitality and tourism industry (Penco et al., 2019; Shoval et al., 2020). So, cruise companies are developing new technological ships using different digital technologies onboard such as Artificial Intelligence (AI) or Virtual Reality (VR). As an example of the adoption of this technologies, AI can be found in the Royal Caribbean's bionic bar that uses service robots (Lu et al., 2019), in the latest MSC cruise ships that implemented a digital assistance called ZOE that assist onboard guest with reservation, inquires, and learn their preferences (Shallo, 2019; MSC Cruises, 2021), or even through online purchases that delivered the items to guest staterooms on the newest Celebrity Cruises ships (Maddox, 2019; Celebrity Cruises, 2020). On the other hand, VR is mainly used by cruise companies in areas such as shore excursions or culinary dining (Arlati et al., 2018; Loureiro et al., 2019). This denotes, that cruise companies are adopting these technologies to provide a new and better experience to their cruise travelers, as most of them use technologies in their daily lives activities and hope to find them also when they travel (CLIA, 2019). Indeed, the acceptance and use of these new technologies will depend on the technological readiness of the consumer (Blut and Wang, 2020). In addition, when consumers interact with these technologies it can lead them to an emotional reaction, that can influence their behavioral responses (Gao and Bai, 2014). This emotional reaction is also known as an online flow state, which has been defined by Novak

et al. (2000) as the state occurring during network navigation.

Also, literature in the hospitality, tourism, and technology industry reveals that further studies need to be done within cruise tourism and technologies (Lu et al., 2019; Loureiro et al., 2020). Therefore, this abstract paper is an integration of three different theories: S–O–R framework (Donovan and Rossiter, 1982), E-servicescape (Harris and Goode, 2010), and Flow experience (Gao and Bai, 2014), since with the S–O–R model the purpose of this paper is to explain how the E-servicescape environment on cruise ships (S), can lead to an emotional reaction of cruise ship travelers presented as a flow experience (O), and how this emotional reaction can influence the behavioral response of the cruise travelers (R) in relation to the intention of use technological devices onboard the cruise ship and purchase intention. (See figure 1).

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As far as we know, this is the first time in the literature of the Hotel and Tourism Industry and also of the Technology Industry that this research is been conducted since most recent studies have been made in hotels, restaurants, and airports (Bogicevic *et al.*, 2017; Li, Bonn and Ye, 2019; de Kervenoael *et al.*, 2020; Hou, Zhang and Li, 2021).

Therefore, the expected research result of the project aims to provide some theoretical contributions in the literature of Tourism and Technology, as stated above, the present literature has some gaps between these industries. In addition, we also hope that these contributions can help future researchers in their projects related to these topics.

Additionally, the results obtained will provide some practical contributions to cruise companies, cruise ship managers, and marketers, as they can take into consideration the results that can allow them to have a better insight of the cruise traveler's reaction towards the future technologies implemented on their new ships.

Figure 1. Proposed framework



Keywords: Virtual reality, artificial intelligence, cruise, customer experience, e-servicescape, S-O-R framework, literature review

## REFERENCES

Arlati, S. et al. (2018) "VirtualCruiseTour: An AR/VR application to promote shore excursions on cruise ships," in de Paolis, L. and Bourdot, P. (eds) Lecture Notes in Computer Science (including subseries Lecture Notes in

Contemporary Business Concepts and Strategies in the new Era ISSN: 2547-8516 ISBN: 978-9963-711-90-1 Artificial Intelligence and Lecture Notes in Bioinformatics). Cham: Springer International Publishing, pp. 133–147. doi: 10.1007/978-3-319-95270-3\_9.

Blut, M. and Wang, C. (2020) "Technology readiness: a meta-analysis of conceptualizations of the construct and its impact on technology usage," Journal of the Academy of Marketing Science, 48, pp. 649–669. doi: 10.1007/s11747-019-00680-8.

Bogicevic, V. et al. (2017) "The impact of traveler-focused airport technology on traveler satisfaction," Technological Forecasting and Social Change, 123, pp. 351–361. doi: 10.1016/j.techfore.2017.03.038.

Celebrity Cruises (2020) Innovation At Sea. Available at: https://www.celebritycruises.co.uk/discover-magazine/news-events/innovation-at-sea/ (Accessed: December 12, 2020).

CLIA (2019) 2019 Cruise Trends & Industry Outlook. Available at: https://cruising.org/news-and-research//media/CLIA/Research/CLIA-2019-State-of-the-Industry.pdf (Accessed: September 23, 2020).

Donovan, R. J. and Rossiter, J. R. (1982) "Store Atmosphere: An Environmental Psychology Approach," Journal of retailing, 58(1), pp. 34–57.

Gao, L. and Bai, X. (2014) "Online consumer behaviour and its relationship to website atmospheric induced flow: Insights into online travel agencies in China," Journal of Retailing and Consumer Services, 21(4), pp. 653–665. doi: 10.1016/j.jretconser.2014.01.001.

Harris, L. C. and Goode, M. M. H. (2010) "Online servicescapes, trust, and purchase intentions," Journal of Services Marketing, 24(3), pp. 230–243. doi: 10.1108/08876041011040631.

Hou, Y., Zhang, K. and Li, G. (2021) "Service robots or human staff: How social crowding shapes tourist preferences," Tourism Management, 83. doi: 10.1016/j.tourman.2020.104242.

de Kervenoael, R. et al. (2020) "Leveraging human-robot interaction in hospitality services: Incorporating the role of perceived value, empathy, and information sharing into visitors' intentions to use social robots," Tourism Management, 78. doi: 10.1016/j.tourman.2019.104042.

Li, J. (Justin), Bonn, M. A. and Ye, B. H. (2019) "Hotel employee's artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organizational support and competitive psychological climate," Tourism Management, 73, pp. 172–181. doi: 10.1016/j.tourman.2019.02.006.

Loureiro, S. M. C. et al. (2019) "Understanding the use of Virtual Reality in Marketing: A text mining-based review," Journal of Business Research, 100, pp. 514–530. doi: 10.1016/j.jbusres.2018.10.055.

Loureiro, S. M. C., Guerreiro, J. and Ali, F. (2020) "20 years of research on virtual reality and augmented reality in tourism context: A text-mining approach," Tourism Management, 77, p. 104028. doi: 10.1016/j.tourman.2019.104028.

Lu, L., Cai, R. and Gursoy, D. (2019) "Developing and validating a service robot integration willingness scale," International Journal of Hospitality Management, 80, pp. 36–51. doi: 10.1016/j.ijhm.2019.01.005.

Maddox, T. (2019) Technology is making cruising seamless, from the time a person enters a ship until their vacation ends, techrepublic.com. Available at: https://www.techrepublic.com/article/technology-is-changing-the-cruise-industry/ (Accessed: October 1, 2020).

MSC Cruises (2021) MEET ZOE. Available at: https://www.msccruises.com/en-gl/Discover-MSC/Zoe.aspx (Accessed: February 25, 2021).

Novak, T. P., Hoffman, D. L. and Yung, Y.-F. (2000) "Measuring the Customer Experience in Online Environments: A Structural Modeling Approach," Marketing Science, 19(1), pp. 22–44. doi: 10.1287/mksc.19.1.22.15184.

Penco, L. et al. (2019) "Critical events in the tourism industry: factors affecting the future intention to take a cruise," International Journal of Contemporary Hospitality Management, 31(9), pp. 3547–3566. doi: 10.1108/IJCHM-05-2018-0423.

Shallo, J. (2019) How AI Is Changing the Cruise Industry for the Better. Available at: https://cruiseaddicts.com/how-ai-is-changing-the-cruise-industry-for-the-better/ (Accessed: October 2, 2020).

Shoval, N. et al. (2020) "Impact of incentives on tourist activity in space-time," Annals of Tourism Research, 80, p. 102846. doi: 10.1016/j.annals.2019.102846.