The Spanish Review of Financial Economics

www.srfe.journals.es

TECHNOLOGICAL INNOVATION OF HOTEL SERVICES: A COVID-19 STRATEGIC RESPONSE

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Abstract
Globally, companies of varying sizes are bolstering their efforts to adopt business automation strategies with particular concentration on robotics thereby reducing the number of staff that have to physically come to work facilitating social/physical distancing as recommended by the World Health Organisation (2020). Robots are also being used to perform roles workers cannot carry out remotely from home. It is noted that the survival of hotels, after the COVID-19 pandemic, rests on the ability of hotels to be agile and quick to innovate if they must be productive and see a recovery in earnings during the post COVID- 19 era. Presently, the COVID-19 pandemic has had a significant negative impact on many industries including, hospitality and tourism being the hardest hit as people are being compelled to avoid physical contact and all forms of close social interaction which are both integral to enabling hoteliers deliver the type of service historically synonymous with their industry. The World Health Organisation (2020) advises that physical distancing is an effective way to slow down the spread of a virus because when people do not have physical contact with each other and keep distance between them, the number of newly infected people decreases significantly. It is therefore important that for survival in the post COVID-19 era, hotels must adopt a strategic response to this paradigm shift. This may include the adoption of various forms of digital solutions complimented by Artificial Intelligence and even Robots that will aid in the achievement of reduced physical distancing protocols. This study seeks to examine the need for technological innovation in enhancing hotel operations in the post COVID-19 era.
Keywords: COVID-19, Hotels, Technological Innovation, Robots

INTRODUCTION

The global community woke up in December 2019 to an outbreak of a disease named Coronavirus disease 2019 (abbreviated as COVID-19). The disease was described as an infectious disease that is caused by severe acute respiratory syndrome coronavirus. The COVID-19 disease has spread to about 196 countries and territories in every continent across the globe. Since then, there has been concerted effort to curtail the further spread of the infection which is believed to be transmitted by human-to-human. The disease has greatly slowed down economic activities across the world, with many countries coming under partial or total lockdown (Oruonye, & Ahmed, 2020).

As of 1st July 2020, there were approximately 10,848,916 confirmed cases of COVID-19 infections had been reported in more than 200 countries, and over 519,953 people have reportedly died from the disease whereas more than 6,066,672 people have recovered from the disease (WHO, 2020). First reported in 2019, the World Health Organization (WHO) declared this strain of coronavirus (SARS-CoV-2) a global pandemic on March 11, 2020 (X. Yang et al., 2020). In only a few months, the coronavirus disease of 2019 (COVID-19) has impacted social and economic aspects of everyday life across the globe. Hospitality, Aviation, Sports, Transportation and Tourism, as a "high-touch" industries, have come to a grinding halt under social distancing guidelines and travel bans (Jamal & Budke, 2020).

While it is too early to know exactly what travel and tourism will look like when they emerge from the COVID-19 lockdowns, it is very likely that various forms of technology being used to manage this disease will continue to play a significant role. If developed properly, such technological innovations may also help to achieve some of the goals of a more sustainable forms of travel and tourism. Evidence from China and elsewhere shows how robotics, in particular, has advanced in its applications during the COVID19 pandemic.

Due to the highly contagious nature of the SARS-CoV-2 virus, ensuring a safe social distance between people has proven to be an effective way to reduce viral infections in communities (Fong, Gao, Wong, Xiao, Shiu, Ryu & Cowling, 2020). Initially implemented with the onset of COVID-19 (believed to have originated in Wuhan, China), social distancing measures include the closing of public areas (such as parks and plazas) and the maintenance of physical distances between people in areas that cannot be closed (such as markets and health care facilities). These social distancing practices have had a major impact on industries that rely on high levels of close human interaction, such as hospitality and tourism, which are suffering greatly during this period (Hoque, Shikha, Hasanat, Arif & Hamid, 2020).

History has shown that a crisis can bring about technological innovation and development (Colombo, Shikha, Hasanat, Arif & Hamid, 2016). Due to advances in artificial intelligence (AI), miniaturization, and other technologies, robotics have grown increasingly more viable in hospitality and tourism industry settings to provide concierge, housekeeping, food, and other service tasks (Yu, 2020).

The service industries have come to recognize their potential for delivering an automated service to increase productivity, service capacity, provide consistent service quality, improve competitiveness, to cut costs, and improve financial results (Belanche, Casaló & Flavián, 2019; Ivanov & Webster, 2019c). The COVID-19 pandemic forced service companies to use robots for sanitation and physical distancing as well (Seyitoğlu & Ivanov, 2020). Like any other industries, currently, the hospitality and tourism industry has also been affected significantly by information and communication technologies (Benckendorff, Xiang, & Sheldon, 2019). Recently, thanks to the progress in artificial intelligence and robotics (Miller & Miller, 2017; Russell & Norvig, 2016), tourism and hospitality companies have started to adopt a wide range of service robots (humanoid, zoomorphic, or more machine-looking robots) with various levels of technical capabilities as guides, hosts, porters, cooking staff, room servers, housekeeping attendants, bellboys, waiters, etc. (Drexler & Lapré, 2019). More specifically, service robots are used for repetitive, dirty, dull, and dangerous tasks such as the provision of information, cleaning of floors, disinfection, room service delivery, etc. For example, after the current pandemic (COVID-19) people may desire to have physically distant service which may not be possible with receiving service from human employees. Thus, robotics may increasingly gain importance in terms of providing physically distant hospitality and tourism services (Seyitoğlu & Ivanov, 2020). The purpose of this paper is to examine the use of service digitization in the hotel industry especially in the post COVID-19 era.

LITERATURE REVIEW

COVID-19 Pandemic

The outbreak of the new coronavirus infection, COVID-19 was initiated from the Hunan seafood market in Wuhan city of China in December 2019, and within a couple of months it

turned out to be a global health emergency. Live animals like bat, frog, snake, bird, marmot and rabbit are frequently sold at the Hunan seafood market (Wang, Horby, Hayden & Gao, 2020b). Genomic analysis revealed that SARS- CoV-2 is phylogenetically related to severe acute respiratory syndrome-like (SARS-like) bat vi-ruses, bats could therefore be the possible primary source. Although the intermediate source of origin and transfer to humans is not clearly known, the rapid human to human spreading capability of this virus has been established. As per the latest update of WHO on 1st July 2020, the outbreak of COVID-19 had spread in more than 200 countries. Approximately 519,953 people had died after contracting the respiratory virus out of nearly 10,848,916 confirmed cases, whereas more than 6,066,672 people have recovered from the disease. These numbers are changing rapidly (website athttps://www.who.int/emergencies/diseases/novel-coronavirus-2019).

COVID-19: Ensuring Physical Distancing in Hotel Services Using Robots

Hospitality companies can use robots to facilitate physical distancing. Room service and cleaning robots, food/parcel delivery robots, autonomous vehicles, delivery drones, and other robots, eliminate the physical contact between tourists and employees, and the threat of infections. The experience of the Covid-19 pandemic shows that robotic technology could be efficiently and effectively used for cleaning, disinfection, delivering food and medicines, or providing information related to the pandemic to people (Marr, 2020; Yang *et al.*, 2020), because robots are not affected by the virus (although they can be infected by a computer virus). For example, in February 2020 the food delivery giant Meituan Dianping introduced robots in some of its partners' restaurants in Beijing that helped in taking food from kitchens to delivery employees and customers waiting for takeout orders (Toh & Wang, 2020). Restaurants have limited resources for accurate and fast order fulfilment; thus, robots are having a significant role in transferring goods from stores and warehouses to trucks and customers during the pandemic (Demaitre, 2020). Additionally, robots are being used for cleaning and food preparations (Meisenzahl, 2020).

Moreover, if a guest is infected and is obliged to remain under quarantine in the room, a hotel can use robots to deliver food, linen, and other items, without risking the health and safety of the staff (Guzzo, 2020; Kent, 2020). Covid-19 changes the cleaning routines in hotels, and some of them have started to provide "social distancing seclusion" service to their guests (Glusac, 2020).

From a managerial perspective, service robots may help to keep a high level of physical distancing which helps to provide a more secure service to tourists during a pandemic. In the post-viral world, the use of robotics may be widespread as people would be more concerned about their safety; safety and security may be one of the main factors that influence tourists' choice of a destination and particular tourism/hospitality service provider (Hall, Scott & Gössling, 2020). Therefore, tourism and hospitality companies may invest in robotic technologies as one of the ways to provide physical distancing between tourists and employees. For instance, cleaning robots can be used to provide regular cleaning of the common areas of hotels, airports and other facilities, room service robots can be used to deliver food to guests' rooms and avoid gathering of many people in hotels' restaurants, etc. Of course, companies need to consider the legal requirements, hygienic standards and implement a detailed cost-benefit analysis whether the use of service robots would be beneficial in their particular context (Ivanov & Webster, 2018). Affordability is another issue that needs to be considered because SMEs might not have the financial resources to invest in service robots; for such companies renting a robot might be an appropriate solution (Ivanov

& Webster, 2020).
COVID-19 is highly contagious via person-to-person transmission (Chan *et al.,* 2020), and people have been urged to decrease personal contact and increase physical distance (WHO, 2020a). The COVID-19 outbreak can thus be expected to accelerate the penetration of AI and robotics technology into the hospitality industry. Specifically, more hotels are likely to adopt "unmanned" devices and use robots to provide completely contactless service. It is anticipated that robot receptionists, facial scan check-ins, voice guest control, robot delivery, robot concierge assistants, and other contactless services will begin to replace human-to-human contact services in the near future. Hotel operators are beginning to pay closer attention to the potential benefits of artificial intelligence (AI) and its applications, such as robotics, in hotel management practices (Zabin, 2019). An increasing number of studies have focused on hotel-related impacts of AI and robotics at the individual and organizational level (Tussyadiah, 2020). In addition, given the role of social distancing as an effective prevention strategy against COVID-19, adopting AI and robotics in hotels – especially in high-contact scenarios – can help to protect guests and frontline service employees.

CONCLUSION

Global economic and social life has been severely challenged since the World Health Organization (WHO) declared the COVID-19 disease a pandemic. Travel, tourism and hospitality, in particular, have been massively impacted by the lockdowns with the need for persons used to maintain social distance to manage the disease. Robotics, artificial intelligence, and human-robot interactions have gained an increased presence to help manage the spread of COVID-19 in hotels.

SUGGESTION FOR FURTHER STUDIES

The threat of COVID-19 has presented an unprecedented challenge for Hoteliers all over the globe. The use of technology to stem the threat of a downturn is driven not just by the available technological infrastructure but also on extensive research into customer preferences and behaviour. Adequate research on the target market and how to bridge the gap between the technological deficiencies of the economy and the changing needs of customers in the Nigerian hotel industry caused by the ongoing pandemic could be a logical starting point for further empirical research.

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