Could Robots Breathe New "Life" Into the Tourism Industry?

The COVID-19 pandemic has hit the tourism and hospitality industry hard, making employees and travellers alike more wary of close human interaction. Could robots and other artificial intelligence (AI) technologies be the answer? To tackle this controversial question, Seongseop Kim, Frank Badu-Baiden, and Youngjoon Choi from the SHTM and their co-researchers conducted a timely online study comparing human- and robot-staffed hotels. The study provides fascinating insights into how the pandemic has changed tourists' preferences and offers recommendations for hotels on taking the next step towards technology-driven service delivery.

Robots at Reception

Robots have long been part of a science-fiction future. Although it has taken a long time for this future to be realised, robots and other AI technologies have recently begun to take over some of the service functions in hotels. They may serve as cooks or cleaners, provide barista and butler services, or even welcome guests on the front desk. This trend is regarded by some as an "avenue for innovation and improved efficiency and profitability", the researchers note. However, hotel guests may be less enthusiastic.

It is easy enough to understand why some customers do not immediately love the idea of being served by a robot. Hotels are a "symbol of hospitality", say the researchers, "which manifests as human values or touch". Indeed, part of the enjoyment of staying in a hotel is experiencing the "serene atmosphere of comfort and relaxation" conveyed by the service staff. When guests experience a personalised service and feel valued by employees who offer "kind gestures, such as smiles, greeting and pleasant eye contact", they are more likely to feel an attachment to the hotel and to stay loyal to the brand.

Why, then, would hotels consider introducing robot services? One reason is that human service also has its downsides. For instance, the researchers note, when staff fail to deliver the expected level of service, guests may be dissatisfied and their "experiences may be marred". Furthermore, as humans are fallible, occasional mistakes are inevitable and can result in inconvenience and even, at worst, litigation, financial loss and damage to the hotel's reputation.

On a more positive note, the researchers explain, many people enjoy technological advancements, appreciate the "usefulness and ease of use" of service robots and like to show off their novel experience to others. They may experience "reduced waiting times for service delivery, fun, enjoyment, and flexibility" from robot service technology. There are also many advantages for hotels, which benefit from more efficient service delivery, reduced labour costs, greater standardisation, and improved productivity and competitiveness.

With mixed evidence to date on people's attitudes towards robot hotel services, the researchers were interested in whether views may have changed with the current COVID-19 crisis, which has brought extensive social distancing measures and concern about human contact. They speculated that the "highly contagious" nature of COVID-19 may have made people more enthusiastic about robot services in hotels. After all, the researchers note, robots offer a reduced risk of infection, especially given the "high levels of interpersonal contact in human-serviced hotels".

Human versus Robot Staff

The study took place in the United States between May and September 2020, in the midst of the COVID-19 pandemic. The data were collected in a series of four online studies with participants recruited through Amazon MTurk, an online participant panel. Between 113 and 171 participants were recruited for each study, with an approximately even split between men and women and a mean age of 36 to 40.

The participants were asked to imagine that they were planning to visit a city and had to choose from one of two hotels. They were then presented with pictures of a human-staffed hotel and a robot-staffed hotel. After comparing these pictures, which showed humans or robots working on the front desk,

handling luggage, cooking, and so on, the participants were asked which hotel they would prefer to stay in.

In each study, the researchers sought to find out whether the participants' preference for the robot-staffed hotel increased when they felt more at risk. This was important, the researchers explain, because "the anxiety caused by human contact and the perception of possible contagion can influence travelers to undertake risk-averse behaviors, such as avoiding human-staffed hotels". Different kinds of information were provided to different participants so that some were made more aware of the pandemic while making their decisions.

The researchers also looked at whether the participants' preferences changed according to, for instance, their level of concern about safety and social distancing and how they felt about innovative technology.

A "New Normal"?

In a resounding show of support for AI concierges, butlers, and cleaners, the results of all four studies indicated a preference for the robot-staff hotel. The researchers concluded that the pandemic may have accelerated the acceptance of service robots because they are "beneficial for maintaining social distancing and reducing anxiety regarding contagion through human interaction". Clearly, customers' attitudes towards new technology can be changed by a "particular event or crisis". The longer the current crisis goes on, the greater people will perceive the threat to be. This threat, the researchers predict, will be "imprinted on customers' memories even after the COVID-19 crisis ends".

Inevitably, therefore, health and hygiene standards will remain high for some time. Service robots equipped with AI can provide contactless services in a wide range of settings, such as hotels, restaurants, airports and events, to allay customers' concerns about safety. However, facilities eager to provide this kind of service should be mindful of the researchers' advice that to be successful, they will need to provide "clear instructions and guidelines to lower barriers to first-time users". This will help to ensure that guests do not become frustrated by and reject the new technology.

Although their findings suggest that people are becoming more accepting of robot-service hotels, the researchers highlight an important potential caveat. They remind us that the participants who felt more at risk due to COVID-19 had a greater preference for the robot-staffed hotel. Once the pandemic is over and customers no longer feel so anxious about contagion, they may come to prefer human services again. The solution, the researchers suggest, lies in marketing and promotion. Hotels should target customers who feel particularly threatened by the pandemic by "promoting the health and safety aspects of service robots".

The Time is Right for AI

The researchers' novel findings suggest that in the wake of the COVID-19 pandemic, with concerns about health and safety running high, the time may be ripe for the hotel and tourism industry to expand the introduction of robot and AI services. The world is already moving rapidly toward the introduction of high-level technologies, and the pandemic offers a "good opportunity for

pioneers to act". Armed with the researchers' timely insights, hotels may be better placed to capitalise on "the usefulness of service robots in maintaining social distancing and preventing the spread of infectious diseases". This can only be good news for an industry dealt a formidable blow by COVID-19. What was once seen as a threat to the hospitality and tourism industry may now be its best means of survival.

POINTS TO NOTE

- Robot and other AI technologies are increasingly used in the tourism industry.

- Customer acceptance of robot services in hotels is mixed, posing an obstacle to their widespread introduction.

- Health concerns and social distancing due to COVID-19 seem to be changing consumer preferences.

- Now may be the right time for hotels to speed up the rollout of robots.

Seongseop (Sam) Kim, Jengkeu Kim, Frank Badu-Baiden, Marily Giroux, and Youngjoon Choi (2021). Preference for Robot Service or Human Service in Hotels. Impacts of the COVID-19 Pandemic. *International Journal of Hospitality Management*, Vol. 93, 102795.