Research Article

Charalampos Giousmpasoglou*, Thi Thuy Hua

The Use of Self-Service Technologies in Budget Hotels: The Case of Bournemouth

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Abstract: Self-service technologies (SSTs) have been implemented across all service industries. The hotel business in the UK, including budget hotels, has been increasingly adopting SSTs both to enhance customer service and to create operational efficiency. In addition to providing guests with accommodation and basic services, budget hotels are now using SSTs with a view to increasing controlling and operational efficiency, human resource management and engaging guests in a more intelligent service design. Previous studies have mainly focused on the users' perspectives, not on the use of SSTs themselves in budget hotels. The purpose of this study, then, is to explore the implications of SSTs in budget hotels both from a managerial and a guest perspective. Bournemouth has been selected as a case study for this research because it is one of the most popular resorts in the UK. This qualitative study employed 14 semi-structured interviews with budget hotel managers and guests who have used SSTs while staying in budget hotels in Bournemouth. The research findings show that maximising operational efficiency is a key benefit of SST implementation from a managerial perspective. On the other hand, efficiency, accessibility, privacy and self-control over transactions are the main benefits of an SST, emphasised by customers. Overall, there is positive feedback from both managers and guest on the usage of SSTs in budget hotels in Bournemouth. The authors conclude that advanced technologies, such as artificial intelligence (AI)

and Internet of Things (IoT), in conjunction with SSTs, will transform the hospitality industry in the near future.

Keywords: Hospitality industry; Budget hotels; Self-service technologies; Operational efficiency; Customer experience; Human-machine interaction.

1 Introduction

Hospitality and tourism is the UK's fourth largest economic sector (Foroudi, 2019). Recently, despite variations in the political and economic situation, the hotel industry enjoyed an unprecedented growth. About 2.5 million pounds were invested in the industry in the first term of 2018, with over 10,000 new hotel rooms added and 61.9 million overnight stays (Lambert Smith Hampton, 2018). Despite being considered behind other industries in the adoption of technology in the 1980s and the 1990s (Kirk & Pine, 1998), the development of the hotel business has been aided by various technologies and, today, the hospitality industry has witnessed significant changes in its operations. In this context, use of self-service technologies (SSTs) is a key trend in the hospitality industry (Tung & Law, 2017).

The UK's hotel business, including budget hotels, has increasingly adopted SSTs to enhance customer service and create operational efficiencies (Gursoy, 2018). Budget hotels offer lower prices than traditional lodging properties and typically provide only accommodation and basic needs (Mohsin & Lengler, 2015). They are investing in SSTs with a view to increasing operational efficiencies, controlling human resources management and engaging guests with a more intelligent service design (Davis, Spohrer, & Maglio, 2011). The adoption of SSTs is believed to enhance guest service experience as well as improve a hotel's competitive advantage (Kaushik & Rahman, 2017).

Since the early 2000s, many researchers have studied the use of SSTs (see Dabholkar & Bagozzi, 2002; Froehle & Roth, 2004; Liljander, Gillberg, Gummerus, & van Riel, 2006). It can be argued, however, that the empirical find-

*Corresponding author: Charalampos Giousmpasoglou, Bournemouth University Business School, Department of People and Organisations, United Kingdom, BH12 5BB, Talbot Campus, Dorset House, ORCID: 0000-0001-9225-3475, Email: cgiousmpasoglou@bournemouth.ac.uk

Thi Thuy Hua, Bournemouth University Business School, Department of People and Organisations, United Kingdom, BH12 5BB, Talbot Campus, Dorset House, Email: s5080836@bournemouth.ac.uk

ings have mainly focused on the customers' perspectives and the luxury sector, rather than managerial perspectives and mid-priced and budget hotels. In addition, there is limited research on the factors leading to budget hotels' decision to adopt SSTs. Bilgihan, Okumus, "Khal" Nusair, & Joon-Wuk Kwun (2011) suggest that, because of rapid development, all technology-related research should be reinvestigated every two years. In addition, there is controversy about the use of interpersonal service versus SST (Gelderman, Ghijsen, & van Diemen, 2011). In recent studies, some researchers found that SSTs reduced labour costs as well as customer waiting time (Wei, Torres, & Hua, 2016), while others suggested that interpersonal services were preferred by customers (Kokkinou & Cranage, 2013). Therefore, this study explores both managers' and customers' perceptions of the use of SSTs in UK budget hotels in Bournemouth.

2 Literature Review

2.1 Budget Hotels

Budget hotels have been defined, simply, as "*economy lodging*" (Rogerson, 2011: 349) or, in more detail, as "*a limited service lodging establishment offering the benefit of good value for money in standardised accommodation and offering quality as good as hotels of a higher star grading*" (Ren, Qiu, Wang, & Lin, 2016: 14). The hotel industry in the UK follows the international standards, by rating hotels in a scale from 1 to 5 (AA Hotel and Hospitality Services, n.d.): thus, 1* and 2* are economy or budget hotels, 3* are mid-priced/mid-scale, 4* and 5* are upscale/luxury hotels. As contrasted to other parts of the industry, budget hotels are developed with low investments and operated with low cost, based on their strategic locations with fast and inexpensive construction techniques and offered limited services and facilities, which subsequently resulted in lower tariffs than other types of accommodation (Peng, Zhao, & Mattila, 2015). They are a popular option for customers, both leisure and business, thanks to their affordable price and clean, reasonably sized and furnished rooms (Ren et al., 2016). Particularly in the UK, travellers prefer staying in budget hotels over Airbnb properties, even if Airbnb provides cheaper price because customers claim that extra services and facilities make staying in a hotel better than an Airbnb (Lu & Tabari, 2019).

Branded budget hotels can also attract guests from their effective use of hotel positioning, including location, promoting branding awareness and marketing (Ruetz &

Marvel, 2011). Budget hotel chains have demonstrated a stable increase throughout the years, and two chains, Premier Inn and Travelodge, account for nearly 14% of the UK's total room supply (Mintel, 2018). Whitbread, the owner of Premier Inn, recently stated that the company sees potential for even more growth (Lake, 2019).

2.2 Self-Service Technologies in Hotels

As technology develops, it is expected to replace many human services (Gummerus, Lipkin, Dube, & Heinonen, 2019). SSTs can be defined as "*any sort of technology that eliminates the need for human interaction in order to complete a business transaction of some sort*" ("Self-Service Technology Within the Hospitality & Tourism Industry," n.d.). In other words, SSTs reduce the need for person-to-person communication to provide speed and efficiency. Examples include automatic teller machines (ATMs), self-service payment kiosks, self-scanning check-outs in retail stores and self-accessed hotel facilities (Beatson, Lee, & Coote, 2007). SSTs in hotels are mainly used (but not limited to) in online bookings, check-in/check-out process and the management of in-room entertainment. The latest technological advancements have allowed hotel SSTs to be integrated/embedded into online platforms and mobile device applications (Lambert Smith Hampton, 2018).

Kurve (2019) found that 82% of guests would choose to book with a travel/hotel company that allows use of a self-service kiosk application or online check-in. Orel & Kara (2014) suggest that hoteliers invest in SSTs, such as self-service kiosks, in order to reduce waiting time and enhance customer experience. The use of SSTs can also enhance and encourage co-creation, that is, through the use of smartphone apps by hotel guests to co-create new services (Sarmah, Kamboj, & Rahman, 2017). Despite the risk of customer service depersonalisation, SSTs are considered a valuable tool (Kaushik & Rahman, 2017). Because of its benefits for both customers and operators, Gartner (2018) predicted that by the end of 2020, 40% of the quick-service outlets will offer self-serve technology and 85% of all customer service interactions will be handled without the need for a human agent.

2.3 Self-Service Technologies in Budget Hotels

SSTs have recently become a key trend in the hospitality industry, and the budget hotel market is no exception.

Today, particularly in the budget hotel market, factors such as central location, smart rooms combined with SSTs, connectivity and comfort are considered essential (Foroudi, 2019). YOTEL (formerly Starwood's budget brand) claimed that guests were now used to the self-service process with trains, airlines self-service kiosks, etc. and, therefore, were more comfortable with automated hotel check-ins (Andrea, 2011). Big budget hotel chains in the UK, such as Premier Inn, Travelodge and Ibis, now use SSTs in tablets, laptops and kiosks, allowing customers to self-check-in/out, book tables, etc. By using these devices connected to the Internet, hotel staff can perform a number of tasks in a timely and efficient manner, including retrieving bookings, allowing guests to choose a room from an interactive map, signing digitally onscreen, taking credit card payments, generating room keys for guests and even acting as an information point or virtual concierge for guests to learn about the hotel and surrounding area (Cheong, Ling, Teh, Ahmed, & Yap, 2017). Even though registration at reception desks is still widely used, use of innovative check-in systems, based on technology, has grown significantly, making the process quicker and more efficient (Kokkinou & Cranage, 2013; Melián-González & Bulchand-Gidumal, 2016). In addition, Åkesson & Edvardsson (2018) suggest that this allows hotel staff to focus on more engaged activities for guests.

Although applying SSTs to guests' check-in options avoids queues, reduces customers' waiting time and increases their control in the service process (Wei et al., 2016), asking customers to use SSTs as a sole option is also a challenge. Studies by Kucukusta, Heung, & Hui (2014) and Zhang (2018) highlight the importance of social interactions for guests and the desire for personalised service in hospitality settings. There is evidence that customers still prefer face-to-face conversations and interpersonal services (Kokkinou & Cranage, 2013). Furthermore, using SSTs can create anxiety and frustration, especially for older guests. As a result, a number of hotel guests refrain from using this type of service (Rosenbaum & Wong, 2015). From the business perspective, a number of issues related to the adoption of SSTs is reported: these include the high cost of SST installation, operation, maintenance and upgrade (Kansakar, Munir, & Shabani, 2019; Karadag & Dumanoglu, 2009) and the problem of service failure, due to malfunctioning or incorrect data entry (Plé & Chumpi-taz Cáceres, 2010).

3 Research Methodology

This qualitative study focuses on the attitudes towards SSTs of providers and customers, by adopting an inductive approach. In terms of methodology, a cross-sectional design was employed, entailing data collected through face-to-face interviews with semi-structured questions and creating a body of qualitative data for identifying the factors affecting hoteliers and guests when using SSTs (Bell, Bryman, & Harley, 2019).

Based on the existing literature, two different sets of questions were created for this study. The questions for hotel managers focused on the functionality, benefits and challenges of using SSTs in terms of operations, human resource management and customer satisfaction. On the other hand, the guests' questions were focused on the features of SSTs, the benefits and challenges of using them and recommendations for future improvements. During the interviews, all participants were encouraged to share their experiences of the use of SSTs.

The interviews were conducted in the city of Bournemouth, in a three-month period from November 2019 to January 2020. Bournemouth is an award-winning, popular seaside destination (Cartledge, 2019). The majority of accommodation offered for visitors is a mixture of budget hotels, bed and breakfast hotels and guest houses ("Bournemouth and Poole Tourism Strategy 2017-22," n.d.). Based on Booking.com (September 2020), there are 49 budget hotels (rated as 2* and 3*); it was decided to include in the sample mid-priced (3*) hotels, because it is often the case that they compete directly with budget hotels and advertised as such (Blitz, 2009). The type of business is mainly independent, or family owned; on the other hand, all major domestic and international budget hotel chains have presence in Bournemouth (i.e. Holiday Inn Express and Premier Inn).

In this study, convenience sampling (Ritchie, Lewis, Nicholls, & Ormston, 2013) was employed in order to reach the potential interviewees in Bournemouth's budget hotels. Access was initially achieved through the participating hotels' human resources department. An email with a brief description of the study was sent to 15 HR managers (or Operations Managers). Five managers provided us with a positive response; the managers were also asked to grant permission to interview guests within the premises of their hotels. In total, nine hotel guests were interviewed. The 14 interviews in total helped the researchers to achieve data saturation; this is defined as the point when "no new information or themes are observed in the data" (Guest, Bunce, & Johnson, 2006: 59). All interviews were digitally voice-recorded and transcribed by the

researchers. All interviewees were also provided with a brief description of the study and a consent form signed in two copies. The study and research tools adopted received research ethics approval from Bournemouth University. Because of confidentiality issues, the participants were anonymised and coded in transcriptions.

A number of different data analysis methods, such as grounded theory, thematic analysis (TA) or narrative analysis (Sirakaya-Turk, Uysal, Hammitt, & Vaske, 2017), were considered for this study. TA was chosen as the most suitable method in order to help identify the key themes emerging from the collected data set. According to Braun & Clarke (2006), TA is a method of identifying, organising, describing and reporting themes from a collected data set in qualitative research. TA is also considered as an effective method to critically identify the interviewee's perspective (King, 2004). Braun & Clarke (2006) propose a six-step approach to using TA: 1) examining and familiarising with data, 2) generating initial codes, 3) searching for themes, 4) reviewing the themes, 5) defining the themes and 6) presenting the themes and producing a report.

This study employs the six-step approach to the TA in order to strengthen the reliability or degree of consistency between codes processing the same data (Bell et al., 2019) and the validity or extent to which the research results accurately represent the collected data (internal validity) and can be generalised or transferred to other contexts or settings (external validity) of the research findings (Sekaran & Bougie, 2013). The transcriptions were read and revised in order to familiarise the researchers with the data set. The next step was to generate codes to represent key information. This process helped the researchers to

establish themes by collating initial codes, representing the data.

4 Results and Discussion

This section explores and critically evaluates the views of managers and guests in budget hotels regarding the use of SSTs. The purpose of this study is to investigate the topic in a holistic manner, not to identify the gap between the different stakeholders' views. In this sense, the participants' responses complement each other. The research findings are presented under four key themes: 1) SST use and acceptance, 2) SST functionality and hotel productivity, 3) operational challenges and 4) SSTs and staffing. The findings emerged from 14 in-depth semi-structured interviews with five managers and nine guests. The participants' coding, including a basic demographic description, can be viewed in Table 1.

4.1 Theme 1: SST Use and Acceptance

The findings in this study suggest that both hotel managers and guests of budget hotels accept the use of SSTs and, moreover, express positive opinions about the increase of self-service devices. According to M1, people are now more technologically savvy: almost 80% of the hotel bookings are made online, rather than over the phone or by 'walk-in'. M1 argues that:

Table 1: Participants' coding

Participant	Coding	Gender	Age	Occupation
Manager 1	M1	Male	40–49	Hotel Owner
Manager 2	M2	Female	20–29	Deputy Manager
Manager 3	M3	Male	20–29	Operations Manager
Manager 4	M4	Female	30–39	IT Manager
Manager 5	M5	Male	20–29	Hotel Manager
Guest 1	G1	Male	30–39	Chef
Guest 2	G2	Male	20–29	IT specialist
Guest 3	G3	Female	50–59	Household
Guest 4	G4	Female	20–29	Accountant
Guest 5	G5	Female	40–49	Musician
Guest 6	G6	Male	40–49	Clerk
Guest 7	G7	Male	20–29	Customer Service
Guest 8	G8	Female	50–59	Dept. Manager
Guest 9	G9	Female	40–49	Office Administrator

“...technology is evolving fast so I would say you should move forward with technology rather than not adapt to it because others might be adapting so you will be losing this competition” [M1].

M1's suggestion that hotel guests are familiar with advanced technologies, and that most bookings have been processed through online systems aligns with a report by Trekksoft (2019) that 66.7% of the bookings are made online. This is also confirmed by the popularity of SSTs in budget hotel chains (Liu, Hung, Wang, & Wang, 2020). A gradual replacement of service desks by SST kiosks was reported by managers:

“We see great potential in the use of (SST) kiosks... they are also used for all our back-office applications. We want the platforms to be based on the kiosk. SSTs are making it a better guest journey, so they can check in quicker through kiosks than traditionally through the service desk and it enables our team to talk to the guests whilst the guest checks in themselves through the SSTs” [M2].

M5 believes that SSTs' efficiency and functionality have created a seamless experience for hotel guests. He also suggests that the hotel staff can communicate with customers while they are using SSTs, not only helping first users with the device usage, but also maintaining human interactions during the service encounter. This contradicts the view from researchers such as Fraj, Matute, & Melero (2015) and Shin, Perdue, & Kang (2019) who suggest that technologies degrade the human interactions in hotels. Most hotel guests also expressed positive views regarding the use of SSTs in budget hotels:

“I think it's beneficial to people like me... I'm kind of IT illiterate and I think you have got to move with the time. To be fair, I think even people in their 50s and 60s are all used to it now. It got to be a way forward and is it certainly not complicated because now it's everywhere and, in every industry” [G6].

Guests also noted the substantial growth of SSTs. According to G1, the evolution of SSTs is undeniable, *“it's now everywhere... and I think it's going to take over soon”*. However, there are many opinions in favour of human-to-human interactions because these are considered a key aspect of the service experience in hotels. M2 reports that she prefers to work with hotel employees *“and not with machines”*. In addition, according to G3, older guests *“still prefer the help from actual human beings”*. In their study, Karavidas, Lim, & Katsikas (2005) found that when people reach a certain age, their cognitive, sensory and motor skills deteriorate, which affect their technology learning abilities. Therefore, the use of SSTs in budget hotels may cause stress anxiety in some guests. Research

conducted by Plé & Chumpitaz Cáceres (2010) found that, in budget hotels with increased booking traffic, SSTs can fail meeting specific guest requests, leading to increased stress for staff. Mistakes using SSTs also cause problems: *“For me, no, unfortunately, the kiosks have brought more issues for our reception than if we could just do it on paper by ourselves” [M2]*. Despite these problems, the overall findings from this study suggest that the majority of respondents feel positive regarding the use of SSTs.

4.2 Theme 2: SSTs' Functionality and Hotel Productivity

The functionality and user friendliness of SSTs in relation to productivity in budget hotels has emerged as another key theme from the data collected. The opinions from hotel managers and guests have demonstrated outstanding features of SSTs, such as efficiency, flexibility and multilingual ability.

All participant managers agreed that SSTs increased hotel productivity, facilitating the checking-in process, reducing hotel staff workload stress during check-in hours and creating a better experience for the guests by providing a seamless experience upon arrival in the hotel. Toh (2018) arrived at similar conclusions in a study focused on SSTs in the restaurant industry. M5 argues that *“the main benefit for us as we did more than half of our check in through the check in kiosk, because it means that our team don't always have their heads down in the desk”*. M3 also confirms the contribution of SSTs on simple daily tasks that still require attention to detail, such as room type selection and allocation. M3 also stresses the need for the front-desk to be *“less transaction and more customer-service-oriented”*. These features have been considered an attribute of self-service kiosks, where guests can choose the room they prefer (Avery, 2015). Moreover, SSTs not only bring benefits for the front desk, but they also support the hotel back office, by reducing time and operational expenses in running a system:

“The technology saved us a lot of time and money because we managers can have meetings with the data retrieved from the software which includes all the data from the self-check-in kiosks and website” [M4].

This is in line with the findings of Kiser, Johnson, & Woolridge (2019) that SSTs saved data in the central system and provided information for the hotel back office to review and improve for the future. M4 says that hotel managers will *“leave the software to do the daily tasks”* and let their

hotel staff “*deal with customers in terms of service quality*”. He also reports that hotels use complementary technologies and platforms, such as mobile check-in, alongside SSTs. As an example, M4 mentioned a self-service portal enables customers to “*book, cancel or amend the reservation and even leave feedback for hotel*” [M4]. These systems are linked with the hotel’s SSTs and database and provide information, such as the guest’s estimated time of arrival and early check-in or late check-out (Kimes, 2008). This information will also be transferred in real time to the housekeeping department, which prepares the hotel’s rooms.

When using SSTs, hotel guests enjoy their flexibility because they can be accessed at any time of the day or night with minimal or no involvement of staff:

“It’s quite flexible. If we are arriving somewhere late in the evening and we just want to be able to get in and not speak to anybody and someone and so forth and yes, the self-service kiosk is our option!” [G5]

Kokkinou & Cranage (2013) suggest that, with the aid of technology, guest experience could be enhanced, and new guests attracted. G3 and G5 share a similar view: hotel guests were restricted by check-in hours or subjected to late arrival notices at some hotels. SSTs’ 24/7 support allows guest check-in at any time. SSTs’ speedy, convenient and error-free service in processing transactions for guests leads to greater guest satisfaction and fewer complaints. Based on both the existing literature (i.e. Wei et al., 2016) and the participant guests’ responses, SSTs’ benefits also include avoiding queues, reducing customers’ waiting time and increasing their control in the service process:

“It’s easy and quick to use... you just turn up to the screen, type in the reference number from your booking and check-in; then it just gives you a key card for your room” [G1].

Participant guests also found SSTs easy to use and fast; the guests can check their personal information for themselves, increasing their feeling of safety (Torricelli & Pozo, 2018). G6 also adds that frequent guests have their data saved on the system: “*they already knew about me, things like my address or phone numbers so I did not have to input all of that information again*” [G6]. Some guests may feel discomfort when they answer repetitive questions from staff after many previous stays (Kaufmann et al., 2020). Hence, the technology-based service avoids this situation while allowing them to process this more quickly with a few clicks.

Another feature demonstrating the functionality of SSTs is their multilingual capacity (Lui & Piccoli, 2010). As the tourism industry in the UK benefits considerably from tourists, multiple language devices would be beneficial to hotels as well as foreign guests who do not speak English:

“If you’re going to a foreign country, self-service is easy because you can select the language that you need it. If you’re trying to talk to a person, it’s very complicated because of language barrier” [G6].

4.3 Theme 3: Operational Challenges

Despite the popularity of SSTs among managers and budget hotel guests, there are challenges related to new, or even mature, technologies adopted for commercial use:

“There’re always some difficulties with technologies like bugs or something that doesn’t work properly, for example sometimes two guests are allocated in the same room. At that time, we need help from the IT team of the kiosk company. That might take some time for them to investigate, find out problems and fix them. Some problems might take just one hour, some might take days or even weeks” [M4].

M4 argues that technical defects cause SST failure. This is one of the biggest problems for hoteliers who adopt new SSTs. The introduction of new SSTs requires skilful IT support staff who have the technical knowledge of the specific system. If this is in place, a new SST can be integrated efficiently, optimising the system’s performance in the hotel. Moreover, technical issues not only affect managers but also create a negative experience for guests. As stated by Dabholkar & Spaid (2012), SST failure creates a problem when a customer’s expectations for a service do not match the actual service delivered. This failure in quality could result in missed sales opportunities, technology abandonment and customer dissatisfaction. As G9 states:

“Yeah well, we once stayed in a budget hotel relied heavily on kiosks. We arrived late and there was a long queue as the self-service kiosks were completely out of order. The other time, we were given the key to our room which we booked for two adults and two children and when we got up to the room there were only bed for two people. We were pretty cross” [G9].

According to Kansakar et al. (2019), technology requires periodical maintenance, and managers normally do not pay attention to this issue and see it as a waste of time and money. Consequently, more serious problems occur.

Therefore, according to M5, SSTs are only suitable for big, branded budget hotels because *“there is the cost of the initial installation and maintenance which is apparently quite expensive”* [M5]. Regular maintenance needs to be conducted in order to provide consistent work from SSTs as well as increase the longevity of technical machines. Furthermore, the problems can occasionally arise because of the hotel guests’ technical knowledge. Hilton & Hughes (2013) argue that, because hotels use SSTs to transfer the task-performance from their staff to customers, the companies lose control over service performance. Therefore, when customers lack the ability to perform in their new role because they do not possess the required level of expertise, service failure is a common outcome. M2 mentioned that there was a considerable amount of excessive and incorrect data provided by guests, which prevented SSTs from working properly:

“If guests recently changed their address and did not actually process it on the system with us. They will be unable to find their reservation on the SSTs” [M2].

M2 stated that SSTs could be *“easy and difficult”* at the same time. If customers are guided thoroughly and can provide the correct information from the beginning, the process with SSTs will run smoothly. On the other hand, G7 said: *“I rarely use self-check-in machine... I am hesitant of technology”*. Inexperienced or first-time users may face difficulty in using SSTs without staff guidance, leading to providing wrong information as well as unwanted results; this situation produces anxiety in hotel guests and can lead to frustration and avoidance of technology in the future.

4.4 Theme 4: SSTs and Staffing

Based on the discussion above, it is evident that SST use brings both benefits and challenges to managers and guests. The adoption of SSTs also has a big impact on budget hotels’ employees. A key characteristic of budget hotels is their low operating cost and a need to keep it at a minimum. Staffing represents a large portion of the overhead costs and can be partially controlled by replacing staff with SST machines. At the same time, hotels should maintain certain operational standards without compromising quality (Mulanjur, 2016). M1 suggests that the constantly increasing expenses of the staff pose problems for budget hotels: *“labour cost is not going down, it is constantly increasing”* [M1]. Staff training also costs time and resources:

“...you have the legal obligation to train them in particular areas that relate to hotel operations such as Health and Safety, Fire Safety, Food Standards, etc. Obviously, SSTs will eliminate the need of that, and it keep cost low as well” [M1].

Thus, the adoption of SSTs creates negative impacts on the labour market, but all the managers in this study agree that SSTs have helped them reduce the number of staff. M5 explains:

“...we can have only one staff and one manager on a busy reception... with two laptops and kiosks, 5 guests can be checking-in at the same time” [M5].

M4 argues that SSTs replace repetitive manual jobs: *“when the self-service system is available, just one receptionist is needed in one shift”* [M4]. With SSTs’ efficiency and automation, hotel staff can save time and focus on other work that requires more skill and interaction with guests. In sum, SSTs’ ability to assist staff with daily tasks contributes to the hotels’ profitability by reducing labour costs (Ivanov & Webster, 2017).

The replacement of staff with SSTs also has an impact on customer experience. According to Lee & Yang (2013), one of the key challenges is to maintain human-to-human interactions. In this study, most participants accept the adoption of SSTs in budget hotels, although they are concerned about the loss of human interactions. G1 and G8 find the use of SSTs and reduction of staff contact *“standard and acceptable”*. In fact, customer expectations at budget hotels may make use of SSTs more acceptable. Nunkoo, Teeroovengadum, Ringle, & Sunnassee (2020) indicate that hotel classifications had a moderating effect between service quality and customer satisfaction. Budget hotel guests, generally, have a low service expectation and are aware of service limitations.

There was also a ‘fit-for-purpose’ approach in participants’ responses. M5 argues that business guests are more in favour of using self-service devices because *“they know what they are doing and just want to get to their room”* [M5], while leisure guests want interactions such as warm greetings, welcoming messages and the arrangement of local sightseeing from staff. On the other hand, G2 says:

“I think it will depend on the type of accommodation. At the airport, it was literally just for the bed in that kind of business transaction, a computer would be enough. But on a holiday or leisure trip, perhaps the human (interaction) would be more appealing to me” [G2].

Overall, participant managers in this study believe that the replacement of staff with SSTs will benefit budget hotels in the long run, while the majority of participant

guests report that they feel comfortable with the idea that part of the service experience during their stay involves human-to-machine, instead of human-to-human, interactions.

5 Conclusion

This study's findings concur with the existing literature that SSTs are largely accepted in the UK budget hotel market, because of their characteristics of efficiency, dependability and accessibility. The participant hotel managers view SSTs as a valuable tool that contributes to operational efficiency. In addition, with SSTs, hotel managers can both reduce labour costs and save time for employees to perform other tasks that require more attention and higher skill levels.

Although there are still challenges with SSTs, such as malfunctions and the loss of human interaction, the data collected from this study suggests a positive attitude towards the use of SSTs from both managers and guests. The authors argue that SSTs, along with AI and other high-end technologies such as robots and the IoT, will become an integral part of the hospitality industry, especially the budget hotel market.

The findings of this study provide some useful insights for budget hotel managers and decision makers. If hotels install, support and update the systems on a regular basis, SSTs can improve the guest experience. In this study, budget hotels' guests also preferred the usage of SSTs, appreciating their efficiency and accessibility as well as the privacy and self-control over transactions that they provide. They allowed customers to skip unnecessary questions from hotel staff and protected their identity, improving their experience during the check-in process. In addition, because budget hotel customers do not expect a lot of personal service, the substitution of human-to-human with human-to-machine interaction does not affect the decision to use them. On the other hand, trained staff is still required in case of SST failure, and budget hotel staff need the support from the company's management and SST providers in order to keep the systems operational. Thus, careful employee selection in conjunction with a budget for training and necessary equipment can improve the customer experience even when SSTs temporarily fail.

The limitations of this study are the small sample size and single location of the research. Future studies should include major tourist and traveller destinations, not only in the UK, but anywhere in the world where budget hotels

adopt SSTs. The gap between the perceptions of different stakeholders (i.e., customers, managers, staff and owners) can be also explored. Another area of investigation would be to identify generational differences in customer experience. In addition, the differences between branded and independent budget hotels on the use of SSTs should be explored. Furthermore, the COVID-19 pandemic is expected to dramatically increase the use of SSTs in hotels and change the customer experience journey. Finally, the authors suggest that the use of big data (retrieved from social media platforms or online travel agents) or the use of mixed methods with large-scale surveys and in-depth interviews will provide more comprehensive views on this topic.

Bionotes

Dr Charalampos (Babis) Giousmpasoglou worked for 20 years in the Greek luxury hospitality industry in various senior management positions. He is also an experienced hospitality educator in undergraduate and postgraduate programmes. His research interests focus on managerial work, hospitality management and human resource management. On these research themes, he has published a book, book chapters, journal articles and presented papers to national and international conferences. He is also a reviewer in reputable academic journals such as the 'International Journal of Contemporary Hospitality Management' (IJCHM), where he is also a member of the editorial board. Dr Giousmpasoglou is a Senior Fellow in the Higher Education Academy (HEA), Associate Fellow in the Chartered Institute of Personnel and Development (CIPD) and member in the Institute of Hospitality (IoH). He is currently the programme manager for the MSc in International Hospitality and Tourism Management in Bournemouth University.

Thi Thuy (Tracey) Hua is an experienced hospitality and retail executive. She holds a BA in Economics and Business Administration from the Foreign Trade University in Hanoi, and an MSc in International Hospitality and an MSc in International Hospitality and Tourism Management from Bournemouth University (BU). She is currently a postgraduate student in BU, in MSc Management with Business Analytics.

References

- [1] AA Hotel and Hospitality Services. (n.d.). Ratings and Awards. Retrieved September 9, 2020, from <https://www.theaa.com/hotel-services/ratings-and-awards>
- [2] Åkesson, M., & Edvardsson, B. (2018). Customer roles from a self-service system perspective. *International Journal of Quality and Service Sciences*, 10(2), 196–210. <https://doi.org/10.1108/IJQSS-10-2017-0089>
- [3] Andrea. (2011). Automatic check-in: the way of the future? Retrieved December 27, 2019, from <http://londonhotelsinsight.com/2011/01/17/automatic-hotel-check-in-the-way-of-the-future/>
- [4] Avery, P. (2015). Self-Service Check-in at Hotels and Motels. Retrieved March 24, 2020, from <https://www-03.ibm.com/services/ca/en/mobility/documents/FinalHotelGuideSelf-ServOnlineMag.pdf>
- [5] Beatson, A., Lee, N., & Coote, L. V. (2007). Self-Service Technology and the Service Encounter. *The Service Industries Journal*, 27(1), 75–89. <https://doi.org/10.1080/02642060601038700>
- [6] Bell, E., Bryman, A., & Harley, B. (2019). *Business research methods* (5th ed.). Oxford: Oxford University Press.
- [7] Bilgihan, A., Okumus, F., “Khal” Nusair, K., & Joon-Wuk Kwun, D. (2011). Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*, 2(2), 139–153. <https://doi.org/10.1108/17579881111154245>
- [8] Blitz, R. (2009). Hotel price war hots up. Retrieved September 9, 2020, from <https://www.ft.com/content/626ba444-537f-11de-be08-00144feabdc0>
- [9] Bournemouth and Poole Tourism Strategy 2017-22. (n.d.). Retrieved September 2, 2020, from <https://www.bournemouth.co.uk/dbimsgs/Bmth Poole Tourism Strategy 2017-22.pdf>
- [10] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- [11] Cartledge, S. (2019). It’s official: Bournemouth is the UK’s best seaside town! Retrieved September 2, 2020, from <https://www.bournemouthecho.co.uk/news/18068005.official-bournemouth-uks-best-seaside-town/>
- [12] Cheong, S.-N., Ling, H.-C., Teh, P.-L., Ahmed, P. K., & Yap, W.-J. (2017). Encrypted quick response scheme for hotel check-in and access control system. *International Journal of Engineering Business Management*, 9, 18–20. <https://doi.org/10.1177/1847979017720039>
- [13] Dabholkar, P. A., & Bagozzi, R. P. (2002). An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors. *Journal of the Academy of Marketing Science*, 30(3), 184–201. <https://doi.org/10.1177/00970302030003001>
- [14] Dabholkar, P. A., & Spaid, B. I. (2012). Service failure and recovery in using technology-based self-service: effects on user attributions and satisfaction. *The Service Industries Journal*, 32(9), 1415–1432. <https://doi.org/10.1080/02642069.2011.600518>
- [15] Davis, M. M., Spohrer, J. C., & Maglio, P. P. (2011). Guest editorial: How technology is changing the design and delivery of services. *Operations Management Research*, 4(1–2), 1–5. <https://doi.org/10.1007/s12063-011-0046-6>
- [16] Foroudi, P. (2019). Influence of brand signature, brand awareness, brand attitude, brand reputation on hotel industry’s brand performance. *International Journal of Hospitality Management*, 76, 271–285. <https://doi.org/10.1016/j.ijhm.2018.05.016>
- [17] Fraj, E., Matute, J., & Melero, I. (2015). Environmental strategies and organizational competitiveness in the hotel industry: The role of learning and innovation as determinants of environmental success. *Tourism Management*, 46, 30–42. <https://doi.org/10.1016/j.tourman.2014.05.009>
- [18] Froehle, C. M., & Roth, A. V. (2004). New measurement scales for evaluating perceptions of the technology-mediated customer service experience. *Journal of Operations Management*, 22(1), 1–21. <https://doi.org/10.1016/j.jom.2003.12.004>
- [19] Gartner. (2018). Gartner Says 25 Percent of Customer Service Operations Will Use Virtual Customer Assistants by 2020. Retrieved April 20, 2020, from <https://www.gartner.com/en/newsroom/press-releases/2018-02-19-gartner-says-25-percent-of-customer-service-operations-will-use-virtual-customer-assistants-by-2020>
- [20] Gelderman, C. J., Ghijsen, P. W. T., & van Diemen, R. (2011). Choosing self-service technologies or interpersonal services—The impact of situational factors and technology-related attitudes. *Journal of Retailing and Consumer Services*, 18(5), 414–421. <https://doi.org/10.1016/j.jretconser.2011.06.003>
- [21] Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough? *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- [22] Gummerus, J., Lipkin, M., Dube, A., & Heinonen, K. (2019). Technology in use – characterizing customer self-service devices (SSDS). *Journal of Services Marketing*, 33(1), 44–56. <https://doi.org/10.1108/JSM-10-2018-0292>
- [23] Gursoy, D. (2018). Future of hospitality marketing and management research. *Tourism Management Perspectives*, 25, 185–188. <https://doi.org/10.1016/j.tmp.2017.11.008>
- [24] Hilton, T., & Hughes, T. (2013). Co-production and self-service: The application of Service-Dominant Logic. *Journal of Marketing Management*, 29(7–8), 861–881. <https://doi.org/10.1080/0267257X.2012.729071>
- [25] Ivanov, S., & Webster, C. (2017). Adoption of robots, artificial intelligence and service automation by travel, tourism and hospitality companies—a cost-benefit analysis. In V. Marinov, M. Vodenska, M. Assenova, & E. Dogramadjieva (Eds.), *Traditions and Innovations in Contemporary Tourism*. Cambridge: Cambridge Scholars Publishing.
- [26] Kansakar, P., Munir, A., & Shabani, N. (2019). Technology in the Hospitality Industry: Prospects and Challenges. *IEEE Consumer Electronics Magazine*, 8(3), 60–65. <https://doi.org/10.1109/MCE.2019.2892245>
- [27] Karadag, E., & Dumanoglu, S. (2009). The productivity and competency of information technology in upscale hotels. *International Journal of Contemporary Hospitality Management*, 21(4), 479–490. <https://doi.org/10.1108/09596110910955712>
- [28] Karavidas, M., Lim, N. K., & Katsikas, S. L. (2005). The effects of computers on older adult users. *Computers in*

- Human Behavior*, 21(5), 697–711. <https://doi.org/10.1016/j.chb.2004.03.012>
- [29] Kaufmann, K., Ziakas, E., Catanzariti, M., Stoppa, G., Burkhard, R., Schulze, H., & Tanner, A. (2020). Social Robots: Development and Evaluation of a Human-Centered Application Scenario. In T. Ahram, R. Taiar, S. Colson, & A. Choplin (Eds.), *Human Interaction and Emerging Technologies. IHET 2019. Advances in Intelligent Systems and Computing* (pp. 3–9). Springer. https://doi.org/10.1007/978-3-030-25629-6_1
- [30] Kaushik, A. K., & Rahman, Z. (2017). An empirical investigation of tourist's choice of service delivery options. *International Journal of Contemporary Hospitality Management*, 29(7), 1892–1913. <https://doi.org/10.1108/IJCHM-08-2015-0438>
- [31] Kimes, S. E. (2008). The Role of Technology in Restaurant Revenue Management. *Cornell Hospitality Quarterly*, 49(3), 297–309. <https://doi.org/10.1177/1938965508322768>
- [32] King, N. (2004). Using Templates in the Thematic Analysis of Text. In C. Cassell & G. Symon (Eds.), *Essential Guide to Qualitative Methods in Organizational Research* (pp. 256–270). London: SAGE Publications Ltd. <https://doi.org/10.4135/9781446280119.n21>
- [33] Kirk, D., & Pine, R. (1998). Research in hospitality systems and technology. *International Journal of Hospitality Management*, 17(2), 203–217. [https://doi.org/10.1016/S0278-4319\(98\)00016-4](https://doi.org/10.1016/S0278-4319(98)00016-4)
- [34] Kiser, A., Johnson, V., & Woolridge, R. (2019). Management moves to reduce costs with self-checkout: What affects customer usage? In L. Camacho & S. Singh (Eds.), *ABEM 2019 Conference Proceedings: Innovation, Linkages and Internationalization of Firms* (pp. 16–24). Winnipeg: Academy of Business and Emerging Markets.
- [35] Kokkinou, A., & Cranage, D. A. (2013). Using self-service technology to reduce customer waiting times. *International Journal of Hospitality Management*, 33, 435–445. <https://doi.org/10.1016/j.ijhm.2012.11.003>
- [36] Kucukusta, D., Heung, V. C. S., & Hui, S. (2014). Deploying Self-Service Technology in Luxury Hotel Brands: Perceptions of Business Travelers. *Journal of Travel & Tourism Marketing*, 31(1), 55–70. <https://doi.org/10.1080/10548408.2014.861707>
- [37] Kurve. (2019). The Race Towards Self-serve. Retrieved November 26, 2019, from <https://kurvekiosks.com/wp-content/uploads/2019/07/hospitality-sector-report-june-2019.pdf>
- [38] Lake, E. (2019). Whitbread outlines UK ambitions for 36,000 new Premier Inn rooms. Retrieved November 25, 2019, from <https://www.thecaterer.com/news/restaurant/whitbread-outlines-uk-ambitions-for-36000-new-premier-inn-rooms>
- [39] Lambert Smith Hampton. (2018). Disruption and Innovation in the hotel market - Hotel report 2018. Retrieved December 22, 2019, from <https://www.lsh.co.uk/-/media/files/lsh/research/2018/do-disturb-hotels-research-october-2018.ashx>
- [40] Lee, H.-J., & Yang, K. (2013). Interpersonal service quality, self-service technology (SST) service quality, and retail patronage. *Journal of Retailing and Consumer Services*, 20(1), 51–57. <https://doi.org/10.1016/j.jretconser.2012.10.005>
- [41] Liljander, V., Gillberg, F., Gummerus, J., & van Riel, A. (2006). Technology readiness and the evaluation and adoption of self-service technologies. *Journal of Retailing and Consumer Services*, 13, 177–191. <https://doi.org/10.1016/j.jretconser.2005.08.004>
- [42] Liu, C., Hung, K., Wang, D., & Wang, S. (2020). Determinants of self-service technology adoption and implementation in hotels: the case of China. *Journal of Hospitality Marketing & Management*, 29(6), 636–661. <https://doi.org/10.1080/19368623.2020.1689216>
- [43] Lu, L., & Tabari, S. (2019). Impact of Airbnb on Customers' Behavior In the UK Hotel Industry. *Tourism Analysis*, 24(1), 13–26. <https://doi.org/10.3727/108354219X15458295631891>
- [44] Lui, T. W., & Piccoli, G. (2010). Integrating self-service kiosks in a customer-service system. *Cornell Hospitality Report*, 10(6), 4–20.
- [45] Melián-González, S., & Bulchand-Gidumal, J. (2016). A model that connects information technology and hotel performance. *Tourism Management*, 53, 30–37. <https://doi.org/10.1016/j.tourman.2015.09.005>
- [46] Mintel. (2018). Hotels - UK - November 2018.
- [47] Mohsin, A., & Lengler, J. (2015). Service experience through the eyes of budget hotel guests: Do factors of importance influence performance dimensions? *Journal of Hospitality and Tourism Management*, 23, 23–34. <https://doi.org/10.1016/j.jhtm.2015.03.001>
- [48] Mulanjur, D. (2016). Budget Hotels vs. Luxury Suites - Why Pay More? Retrieved December 21, 2019, from <https://www.suiteness.com/blog/budget-hotels-vs-luxury-suites-pay>
- [49] Nunkoo, R., Teeroovengadum, V., Ringle, C. M., & Sunnassee, V. (2020). Service quality and customer satisfaction: The moderating effects of hotel star rating. *International Journal of Hospitality Management*, 91, 102414. <https://doi.org/10.1016/j.ijhm.2019.102414>
- [50] Orel, F. D., & Kara, A. (2014). Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*, 21(2), 118–129. <https://doi.org/10.1016/j.jretconser.2013.07.002>
- [51] Peng, J., Zhao, X., & Mattila, A. S. (2015). Improving service management in budget hotels. *International Journal of Hospitality Management*, 49, 139–148. <https://doi.org/10.1016/j.ijhm.2015.06.005>
- [52] Plé, L., & Chumpitaz Cáceres, R. (2010). Not always co-creation: introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, 24(6), 430–437. <https://doi.org/10.1108/08876041011072546>
- [53] Ren, L., Qiu, H., Wang, P., & Lin, P. M. C. (2016). Exploring customer experience with budget hotels: Dimensionality and satisfaction. *International Journal of Hospitality Management*, 52, 13–23. <https://doi.org/10.1016/j.ijhm.2015.09.009>
- [54] Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*. Thousand Oaks: SAGE.
- [55] Rogerson, J. M. (2011). The Limited Service Hotel in South Africa: The Growth of City Lodge. *Urban Forum*, 22(4), 343–361. <https://doi.org/10.1007/s12132-011-9130-0>

- [56] Rosenbaum, M. S., & Wong, I. A. (2015). If you install it, will they use it? Understanding why hospitality customers take “technological pauses” from self-service technology. *Journal of Business Research*, 68(9), 1862–1868. <https://doi.org/10.1016/j.jbusres.2015.01.014>
- [57] Ruetz, D., & Marvel, M. (2011). Budget Hotels: Low Cost Concepts in the US, Europe and Asia. In R. Conrady & M. Buck (Eds.), *Trends and Issues in Global Tourism 2011* (pp. 99–124). Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-642-17767-5_11
- [58] Sarmah, B., Kamboj, S., & Rahman, Z. (2017). Co-creation in hotel service innovation using smart phone apps: an empirical study. *International Journal of Contemporary Hospitality Management*, 29(10), 2647–2667. <https://doi.org/10.1108/IJCHM-12-2015-0681>
- [59] Sekaran, U., & Bougie, R. (2013). *Research methods for business: a skill-building approach* (6th ed.). New York: Wiley.
- [60] Self-Service Technology Within the Hospitality & Tourism Industry. (n.d.). Retrieved September 9, 2020, from <https://hotelservicetechnologies.weebly.com/overview.html>
- [61] Shin, H., Perdue, R. R., & Kang, J. (2019). Front desk technology innovation in hotels: A managerial perspective. *Tourism Management*, 74, 310–318. <https://doi.org/10.1016/j.tourman.2019.04.004>
- [62] Sirakaya-Turk, E., Uysal, M., Hammitt, W., & Vaske, J. (2017). *Research methods for leisure, recreation and tourism* (2nd ed.). Egham: CABI. <https://doi.org/10.1079/9781786390486.0000>
- [63] Toh, M. H. (2018). Seeking Productivity Improvement with Self Service Technology (SST) in the F&B Sector: Case Study of Six Restaurants and a Consumer Survey. In M. H. Toh (Ed.), *Lifting Productivity in Singapore's Retail and Food Services Sectors* (pp. 75–105). Singapore: World Scientific. https://doi.org/10.1142/9789813228320_0003
- [64] Torrichelli, T. A., & Pozo, H. (2018). Using self-service technologies in hospitality setting. *Independent Journal of Management & Production*, 9(3), 907–932. <https://doi.org/10.14807/ijmp.v9i4.785>
- [65] Tung, V. W. S., & Law, R. (2017). The potential for tourism and hospitality experience research in human-robot interactions. *International Journal of Contemporary Hospitality Management*, 29(10), 2498–2513. <https://doi.org/10.1108/IJCHM-09-2016-0520>
- [66] Wei, W., Torres, E., & Hua, N. (2016). Improving consumer commitment through the integration of self-service technologies: A transcendent consumer experience perspective. *International Journal of Hospitality Management*, 59, 105–115. <https://doi.org/10.1016/j.ijhm.2016.09.004>
- [67] Zhang, Y. (2018). Research on Hotel Industry Personalized Service from the Perspective of Experience Economy. In *Proceedings of the Asia-Pacific Social Science and Modern Education Conference (SSME 2018)*. Paris: Atlantis Press. <https://doi.org/10.2991/ssme-18.2018.21>