Original Article

# The Impact of AI Chatbots on Long-Term Relationships between Customers and Hotels

Nguyen Thi Khanh Chi[*], Vu Hoang Nam

*Foreign Trade University, No. 91 Chua Lang Street, Dong Da District, Hanoi, Vietnam*

**Abstract:** This article studies the critical determinants of AI Chatbots (anonymity, convenience, and problem-solving) on quality communication and long-term relationships between customers and hotels. The article employs correlation analysis and structural equation modeling (SEM) to analyze the data collected in a structured questionnaire survey in Vietnam. Empirical results indicate that three Chatbot dimensions have a significantly positive impact on communication quality. Problem-solving is found to be the highest influence on both communication quality and long-term relationships. Meanwhile, anonymity and convenience were revealed to have indirect effects on long-term relationships through communication quality. The findings provide an enhanced understanding of how AI Chatbots influence hotel customers experience with Chatbots. This paper also contributes several implications for firms post- the COVID-19 pandemic.

*Keyword:* AI Chatbot, communication quality, long-term relationship, hospitality industry.

## 1. Introduction

Following Winkler and Sollner's (2018) findings, AI Chatbots reduce costs and enhances customers' satisfaction through real-time interaction, and anticipates customer questions and adequately provides information they require. In addition, Chatbot automatically analyzes information to understand customer requirement, which in return increases service quality. Chatbots have greatly enhanced firms' capabilities in text and voice dialogue due to advancements (Araujo, 2018). Google and Facebook, as well as Microsoft, are preparing for the circumstances that Chatbots will be a popular technology for any industry (Følstad & Brandtzæg, 2017) because they have the ability

_____
[*] Corresponding author
 E-mail address: chintk@ftu.edu.vn

to answer consumers' queries instantly. Therefore, Chatbots "are expected to irreversibly permeate both our private and professional interactions tomorrow" (Daniel et al., 2018, p.1).

Chatbot implementation is an increasingly well-defined subject of research in different contexts. Previous research on Chatbot adoption is in tourism and hospitality firms (Ivanov & Webster, 2019, Buhalis & Cheng, 2020). Unfortunately, regarding Chatbots in hotels, there is an unclear question in studying their impact on communication quality and customers' willingness to pay for hotel services. With the spread of the COVID-19 pandemic, social distancing has become the good choice for each country in the world to save the lives of people and provide time for firms to innovate their processes (Baber, 2021; Chi, 2021). Social distance has been investigated in learning (Ahmed et al., 2021). However, the research on the association among Chatbot-based AI, social distance, and customer behaviors is not discussed. Against this background, this study develops a new framework investigating the impact of Chatbot-based AI on guests' willingness to pay for hotel services.

Vietnam is selected as an empirical context to investigate the influence of Chatbots on hotel visit intention. Vietnam has been recognized as an attractive destination for inbound and domestic journeys. However, Vietnamese hotels have first faced a crisis of competition in the same segment market with foreign hotels. Whe the pandemic broke out, they have faced a bigger challenge when a series of hotels had to close because there were no tourists. To overcome these challenges and to reduce intermediary costs as well as bring services to customers at the lowest prices, some Vietnamese hotels have adopted AI-based Chatbots.

## 2. Literature review

### 2.1. AI Chatbots

As firms are becoming global in the era of artificial intelligence and are facing challenges with the COVID-19 pandemic, tourism and hotel providers are forced to move to the online world to successfully connect with customers. Travel and hotel industries are implementing robots in order to serve customers through desktop interfaces (Forbes et al., 2015). Chatbots are a good choice for firms to provide online interaction (Wernaart, 2021; Kasilingam, 2020; Selamat and Windasari, 2021). According to Melián-González et al., (2021), Chatbots are "software programs (robots or bots) that have conversations in natural language with users (chats)" and can be found in "several places: websites, mobile applications, smart speakers, amongst others".

Following Winkler and Sollner's (2018) findings, there are four key benefits to using Chatbots. First, Chatbots reduces costs (customer service cost, labor cost, paper cost). Second, Chatbots enhance customers' satisfaction through real-time interaction. Third, Chatbots can anticipate customer questions and adequately provide information they require. Fourth, Chatbots automatically analyze information to understand customer requirements, which returns increased service quality. Chatbots have greatly enhanced firms' capabilities in text and voice dialogue due to advancements (Araujo, 2018). Otherwise, Elsner, (2017) stated that consumers tend to use Chatbots in customer service. Chatbot e-services help hotel providers reduce physical and distance issues by allowing customers to easily access information (Zhang and Dholakia, 2018).

Since consumers mostly find information on data applications, Chatbots have a big potential in the hospitality industry (Buhalis and Cheng, 2020). Chatbots help hotels perform routine administrative and business tasks "such as scheduling appointments, setting reminders, booking tickets, sharing traffic and updating weather" (Simonsen et al., 2020). For example, hotels, restaurants, car rental services or visitors' information centers can utilize Chatbots for meeting customer satisfaction through Chatbot concierges, smart restaurants and self-ordering systems. Lasek and Jessa, (2013) suggested that

online bookings of hotels through Chatbots increase sales and economic value. Further, Chatbots are involved in "enriching the visitors' pre-arrival experience by allowing them to book rooms and other services such as spas, airport transfers as well as dinner reservations" (Ukpabi et al., 2019). As Chatbots interact with visitors at all stages of their journey, hotel providers can collect valuable data and use this to supply customized hotel services (Bhargava, 2017). However, there is little attention given to Chatbot e-service agents in the hospitality industry. This paper aims to bridge the gap by investigating anonymity, convenience, and problem-solving as hotel Chatbot e-services.

### 2.2. Hypothesis development

Long-term relationships refer to "a long-lasting desire to uphold a valued relationship" (Moorman et al., 1992, p. 316) and as a commitment of a firm to its partners (Grönroos, 2000). Although the benefits of long-term relationships are undeniable, not all companies have the ability to endure their relationship with partners (Henneberg, 2006).

According to Locker (1995), high-quality customer communication is addressed by customers' needs for interaction, problem-solving, and customization. Customization helps hotel providers adapt to customers' references and in turn establish long-term relationships with customers (Chakrabarty et al., 2014), which allows efficient and accurate information through communication (Haas & Kenning, 2014). Enjoyment interaction encourages further intention to use services. Muntinga et al., (2011) showed that guests will be satisfied if they use e-service agents for accessing related information. Kang and Lee, (2015) confirmed that customization contributes to guests' opportunity to facilitate a better fit between their preferences and hotel services. Given that one of the Chatbot's dimensions is customization, it is important for hoteliers to understand how Chatbot customization influences the communication quality with their guests and

guests' willingness to pay for hotel services. Therefore, this study proposes the hypotheses:

*H1a: Customization has a positive impact on communication quality.*

*H1b: Customization has a positive impact on long-term relationships.*

According to Dennis and Wixom, (2001), anonymity motivates individuals to make purchasing decisions. In using a Chatbot e-service, anonymity alleviates pressure on people by the shielding of the electronic bot, which provides lower status and more equality. Tan et al., (1998) suggested that electronic communication is suitable for application in both individualistic and collectivistic cultures. Several prior studies suggested that anonymity positively affects individual behavior. Zimbardo et al., (1970) firstly showed that individuals believing their anonymity status lead to "a lowered threshold of normally restrained behavior". Following Zimbardo et al., (1970), Alonzo and Aiken, (2004) also suggested that anonymity increases customer behavior in electronic communication. In the context of the hotel industry, anonymity perceptions are becoming important since an IT-related behavior poses a risk of identification by sharing sensitive information. Appel et al. (2014) and Vance et al., (2017) found that anonymity increases customer intention to use services. Hence, this anonymity makes guests feel more comfortable (Buhalis & Sinarta, 2019). In such scenarios, this study proposes that anonymity pushes a higher quality of communication between guests and hoteliers and that guests' belief about anonymity when using hotel Chatbots increases their actual behavior in using hotel services. Hence, these hypotheses follow:

*H2a: Anonymity has a positive impact on communication quality.*

*H2b: Anonymity has a positive impact on long-term relationships.*

Chatbots allow businesses in the hospitality industry to transform their operations, reduce costs, increase productivity, and enhance the reliability and quality of services they provide (Ivanov, 2019). Service automation and self-

service technology have been widely used at hotels for checking in/out or providing information (Del Rio et al., 2016), decreasing waiting times, and improving service quality (Bogicevic et al., 2017). Even though AI Chatbots have been introduced in hospitality later than in other industries, they are currently being implemented by many hospitality businesses because they offer cost-effective solutions and improve customer service (Ivanov & Webster, 2018). The findings of Ivanov, (2019), showed that Chatbots change customer understanding of service and their way of dealing with customers. Hence, these hypotheses follow:

*H3a: Problem-solving has a positive impact on communication quality.*

*H3b: Problem-solving has a positive impact on long-term relationships.*

*Communication quality* includes accuracy, timeliness and reliability of information exchanged (Monczka et al., 1998). Edwards et al. (2014) argued that quality of communication requires credibility, competence, and accuracy. Information presented to consumers should be timely, accurate and relevant (Clikeman, 1999). Since adopting Chatbots in hotel operations, hotel employees, through Chatbots, identify accurate information as well as check for updates in real-time (Buhalis and Cheng, 2020). Chatbots can help hotels provide accurate information faster and more efficiently. Chatbots contribute to problem-solving and in turn Chatbots increase the quality of communications with customers.

Since salesmen convey relevant, trustworthy and accurate information, they encourage positive attitudes of customers to their services, enhance psychological connections, and repurchase services (Yuan et al., 2016). If the reliability and completeness of communication is accurate, customers trust Chatbot e-services (Chung et al. 2019). Customers believe that information is credible and persuasive when they have good relationships with communicators (Yuan et al., 2016). Hence, computer communicators listen to customers' concerns,

correctly diagnose their problems, and provide necessary information (Clokie and Fourie, 2016). Edwards et al., (2014) found that Chatbots on Twitter act as human agents for offering reliable communication and customer satisfaction. Companies, through Chatbots, communicate with their customers and provide timely answers and deep information which make customers purchase products/services (Mimoun et al., 2017). Hence, the following hypothesis is:

*H4: Communication quality has a positive impact on long-term relationships.*

*Social distance* is considered as the degree of social-interactive separation between one group and another (Joo et al., 2018). Social distance is "the positive bond developed from behavioral, cognitive, and affective ties between an individual or groups and their environments" (Gimpel et al., 2016). Under the COVID-19 pandemic, social distance reduces interpersonal contact and decreases the spread of COVID transmissions in the community (Shin and Kang, 2020), which has been seen as an exclusionary process to prevent the spread of the pandemic (Morgan, 2010). In the hotel industry, as social objects include guests and hotel staff (Chen et al., 2021), social distance is seen as the separation among those groups.

Hotel Chatbot involvement influences the interactions among guests and hotel staff during service encounters. Since social distance is a compulsory solution to reduce the impact of the COVID-19 pandemic, the intervention of a Chatbot service supports hoteliers to deal with customers' demands and requirements (Qiu et al., 2020). Recently, Chen et al., (2021) suggested the moderating role of social distance on the relationship between information sharing and customer satisfaction in the hotel industry. They argued that social distancing effectively enhances a good relationship between guests and hoteliers and improves guest satisfaction. When customers are satisfied with the service, they are willing to pay for that service the next time (Amfor and Ali, 2020). In these perspectives, social distance is expected to enhance the relationship between communication quality and

guests' willingness to pay for hotel services. Therefore, the hypothesis is proposed:

*H5: Social distance positively strengthens the relationship between hotel communication quality and long-term relationships.*
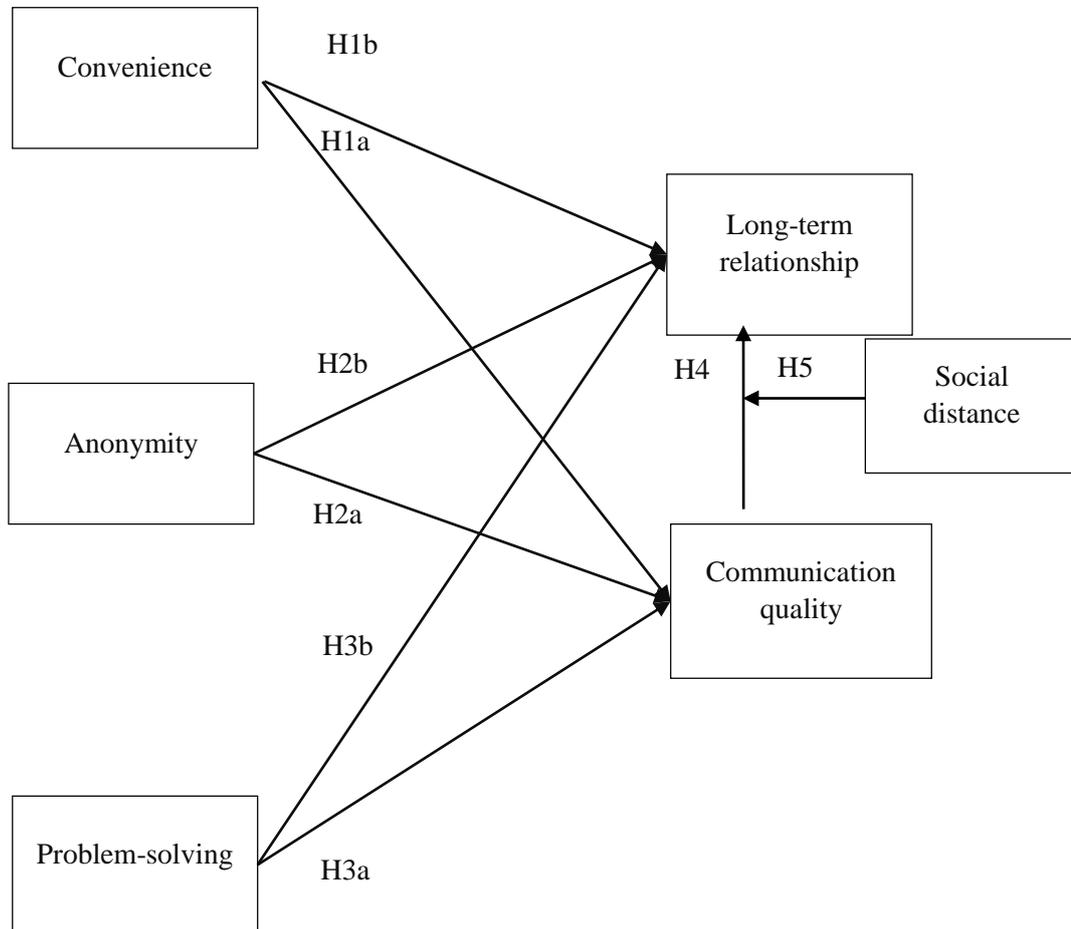


Figure 1: The proposed framework

*Source:* Authors' compilation.

## 3. Research method

To operationalize latent constructs in the study, scales have been taken from prior literature with relevant modifications in item wordings to fit the context. Four items of anonymity are respectively in conformity with the studies of Vance et al., (2017). Meanwhile, four items of problem-solving are captured from Chung et al., (2020). Convenience is captured using four items from the study of Chung et al.,

(2020). *Long-term relationship* has three components and is adapted from Chi, (2021). *Social distance* has four components from the study of Baber (2021). Finally, *communication quality* has five items from Chung et al., (2020). These items been measured on a five-point Likert scale ('1' - strongly disagree to '5' - strongly agree).

This research focuses on domestic tourists who had already used Chatbot apps for booking

rooms, and finding information. The data were collected using structured questionnaires that were distributed by eight trained research assistants. Regarding the sample size, we follow Horng et al. (2012) to use a 95% confidence interval and ±0.05 sampling error to calculate the required samples. As the number of domestic tourists was approximately 85 million in 2020 (Vietnam Economy, 2020), sample size is determined as at least 384. Therefore, over 550 questionnaires were handed to domestic travellers who had already used Chatbot apps. 425 valid survey questionnaires were returned and completed, representing a retrieval rate of 77.27%. This response rate is good, ensuring statical validity with an appropriate 95% confidence interval and ±0.05 sampling error. In the research sample, males account for 48% and females account for 52%. The group of people under 20 years old accounts for 36.4%, while from 21-40, accounts for 63.6%. Of the research sample, people were fulltime employed, with a university academic qualification and with a monthly income of 1,000-1,500 USD.

Data is analyzed with the help of covariance based - SEM (structural equation modeling)

using AMOS 26 software. Since the data meets the conditions of a normal distribution and requisite items to response ratio (1:10), this study used SEM as a preferred and established multivariate analysis technique (Hair et al., 2010). Additionally, SEM is the preferred choice because the model involves simultaneous estimation of multiple dependent relationships (Malhotra and Dash, 2016).

## 4. Research results

### 4.1. Measurement model test-validity and reliability

The measurement model is tested following Hair et al.'s (2010) guidelines and using confirmatory factor analysis to confirm the factor structure. Reliability of the indicators is confirmed by capturing standard factor loadings ($\lambda > 0.70$). Composite reliability for the latent constructs remained significantly high (greater than 0.70) following Fornell and Larcker, (1981). Further, Cronbach's alpha ($\alpha$), known as the reliability coefficient, was found above the designated cutoff value of 0.70 (see Table 1).

Table 1: The reliability and convergent validity

| Constructs/ Variables | Standard loadings | Cronbach's Alpha | Composite Reliability | AVE |
|---|---|---|---|---|
| Anonymity | 0.705-0.859 | 0.778 | 0.812 | 0.52 |
| Convenience | 0.687-0.816 | 0.793 | 0.864 | 0.56 |
| Problem-solving | 0.782-0.855 | 0.875 | 0.825 | 0.64 |
| Communication quality | 0.758-0.798 | 0.862 | 0.889 | 0.62 |
| Long-term relationship | 0.831-0.897 | 0.896 | 0.901 | 0.75 |
| Social distance | 0.771-0.897 | 0.884 | 0.904 | 0.70 |

*Source:* Authors' compilation.

Regarding validity, items loading highly significantly onto corresponding constructs, confirm convergent validity that is further vetted by finding the average variance extracted score above 0.60. Discriminant validity is supported by comparing the √AVE scores with the

correlations between the pairs of constructs (Fornell and Larcker, 1981) (see Table 2). The measurement model fit indices indicate a good fit with $\chi^2/df = 1.718$, Goodness of fit index = 0.942, Comparative fit index = 0.941, and Root mean squared error of approximation = 0.045.

Table 2: Discriminant validity

| Constructs | ANO | CON | PRO | SDI | COM | LTR |
|---|---|---|---|---|---|---|
| Anonymity | 0.721 | | | | | |
| Convenience | 0.711 | 0.748 | | | | |
| Problem-solving | 0.662 | 0.725 | 0.800 | | | |
| Social distance | 0.540 | 0.589 | 0.673 | 0.837 | | |
| Communication quality | 0.461 | 0.557 | 0.534 | 0.598 | 0.787 | |
| Long-term relationship | 0.513 | 0.537 | 0.668 | 0.649 | 0.635 | 0.866 |

*Note:* INT-Interaction, ANO-Anonymity, CON- Convenience, PRO- Problem-solving, SDI-Social distance, COM-Communication quality, LTR- Long-term relationship.

*Source:* Authors' compilation.

### 4.2. Hypotheses testing

The theoretical model fits well to the data with $\chi2/df = 2.049$, Goodness of fit index = 0.925, Comparative fit index = 0.921, and Root mean squared error of approximation = 0.056. These fit indices are very near to the measurement model fit indices, which substantiates a good model fit. However, goodness of fit measures (e.g., $\chi2$) have a high value for the CFA model (measurement model) because they act as the upper bound to the SEM model (Hair et al., 2010) and confirm the theory behind the model fit through SEM. The proposed hypotheses (H1a, H2a, H3a, H3b and H4) are supported, except for H1b and H2b, which are not supported (Table 3).

Table 3: Path analysis results of the baseline model

| Relationships | | | Path Coefficient | P | Test result |
|---|---|---|---|---|---|
| H2a: Anonymity | → | Communication quality | 0.305 | ** | Supported |
| H1a: Convenience | → | Communication quality | 0.344 | ** | Supported |
| H3a: Problem-solving | → | Communication quality | 0.428 | *** | Supported |
| H2b: Anonymity | → | Long-term relationship | 0.005 | 0.113 | Not Supported |
| H1b: Convenience | → | Long-term relationshipv | - 0.439 | 0.513 | Not Supported |
| H3b: Problem-solving | → | Long-term relationship | 0.346 | ** | Supported |
| H4: Communication quality | → | Long-term relationship | 0.682 | *** | Supported |

*Note:* *** < 0.001, ** < 0.01.
*Source:* Authors' compilation.

Anonymity, convenience, and problem-solving all positively affect communication quality. Problem-solving has the highest impact (0.428) on communication quality, followed by convenience (0.344) while anonymity has a lower effect (0.305) than the others. Meanwhile, only problem-solving has a positively direct influence on long-term relationship (0.346); while anonymity, and convenience do not have direct impact ($p > 0.05$).

*4.3. The moderating role of social distance*

The analysis of the moderating effect of social distance was employed by using a process macro in SPSS 21.0. The results show that the

social distance enhances the relationship between communication quality and guests' willingness to pay for hotel service. Therefore, H6 is supported.

Table 4: Moderating role effect

| Path | ß | t | p | LLCI | ULCI | Moderation |
|------|-----|------|------|------|------|-----------|
| H6: SDIxCOM → WTP | 0.337 | 0.280 | 0.002 | 0.121 | 0.539 | Yes |

*Source:* Authors' compilation.

As can be seen from Table 6, social distance has a significantly positive impact on communication quality and guests' willingness to pay for hotel service (0.337).

## 5. Theoretical and managerial implications

This study contributes four significant contributions to the literature. Firstly, convenience, anonymity, and problem-solving play important roles in determining the quality of communication between hoteliers and guests. It can be concluded that hotel performance can be measured by a Chatbot system which focuses on convenience, anonymity, and problem-solving. Secondly, this paper finds the significantly positive impact of three dimensions of a Chatbot system on communication quality, which in turn lead to guests' long-term relationship. Out of three dimensions, problem-solving of the Chatbot system plays a more important role than the other two. The highlight of this study is that customers tend to pay for hotel services if their requests or problems were satisfyingly handled through the Chatbot system. The third highlight is that the Chatbot system is a good solution for hotel providers to enhance their relationship with customers under the COVID-19 pandemic. Finally, this study also finds the indirect effect of a Chatbot system on guests' long-term relationship. The results provide an enhanced understanding of how the Chatbot system influences customers' decision-making.

This paper also provides several implications for practice. First, this study suggests that hotel providers should increase their service quality

and tailor the flexible information provided by Chatbot services. They also have to choose Chatbot providers to be suitable for the characteristics of the hospitality industry. Second, hotel providers should check Chatbot services with their software provider to make sure that the Chatbot system offers highly reliable and quick information. Thirdly, hotel providers should create marketing campaigns which focus on introducing Chatbot usage. Finally, in the context of the COVID-19 pandemic, hotel providers should train their staff to operate and proficiently manage the information system when implementing Chatbot.

## 6. Limitations

This paper also has some limitations. At first, this research does not discuss the interrelationships among other factors influencing the long-term relationship between hotels and their customers. Secondly, the demographic characteristics in this study were not explored. The different sectors may be perceived differently in analyzing the impact of AI Chatbots. Thirdly, the other limitation is in data analysis. Future research might consider to investigate the moderating role of these constructs and use other analyzing methods instead of SEM. Finally, the scale of the proposed construct is also a limitation as this research used a structured questionnaire. Future research also needs to improve this limitation.

## Acknowledgments

## References

Ahmed, I. et al. (2021). A Deep Learning-Based Social Distance Monitoring Framework for COVID-19. *Sustainable Cities and Society*, *65*, 102571.

Alonzo, M., & Aiken, M. (2004). Flaming in Electronic Communication. *Decision Support Systems*, *36*(3), 205-213.

Appel, M. et al. (2014). Internet Use and Verbal Aggression: The Moderating Role of Parents and Peers. *Computers in Human Behavior*, *33*, 235-241.

Araujo, T. (2018). Living up to the Chatbot hype: The Influence of Anthropomorphic Design Cues and Communicative Agency Framing on Conversational Agent and Company Perceptions. *Computers in Human Behavior*, *85*, 183-189.

Baber, H. (2021). Social Interaction and Effectiveness of the Online Learning - A Moderating Role of Maintaining Social Distance during the Pandemic COVID-19. *Asian Education and Development Studies*, https://doi.org/10.1108/AEDS-09-2020-0209

Bogicevic, V. et al. (2017). The Impact of Traveler-Focused Airport Technology on Traveler Satisfaction. *Technological Forecasting and Social Change, 123*, 351-361.

Buhalis, D., & Cheng, E. S. Y. (2020). Exploring the Use of Chatbots in Hotels: technology Providers' Perspective. *Information and Communication Technologies in Tourism 2020* (pp. 231-242). Springer, Cham.

Buhalis, D., & Sinarta, Y. (2019). Real-time Co-creation and Nowness Service: Lessons from Tourism and Hospitality. *Journal of Travel & Tourism Marketing*, *36*(5), 563-582.

Chakrabarty, T. et al. (2014). Cluster Spin Glass Behavior in Geometrically Frustrated Zn3V3O8. *Journal of Physics: Condensed Matter*, *26*(40), 405601.

Chen, S. H. et al. (2021). Hospitality Services in the Post COVID-19 era: Are We Ready for High-tech and No Touch Service Delivery in Smart Hotels? *Journal of Hospitality Marketing & Management*, 30(8), 905-928.

Daniel, F. et al. (2018, May). Toward Truly Personal Chatbots: On the Development of Custom Conversational Assistants. *Proceedings of the 1st International Workshop on Software Engineering for Cognitive Services* (pp. 31-36). Gothenburg, Sweden.

Del Rio, J. S. et al. (2016). Automated Border Control e-Gates and Facial Recognition Systems. *Computers & Security*, *62*, 49- 72.

Følstad, A., & Brandtzæg, P. B. (2017). Chatbots and the New World of HCI. *Interactions*, *24*(4), 38-42.

Haas, A., & Kenning, P. (2014). Utilitarian and Hedonic Motivators of Shoppers' Decision to Consult with Salespeople. *Journal of retailing*, *90*(3), 428-441.

Ivanov, S. (2019). Ultimate Transformation: How Will Automation Technologies Disrupt the Travel, Tourism and Hospitality Industries?. *Zeitschrift für Tourismuswissenschaft*, *11*(1), 25-43.

Ivanov, S., & Webster, C. (2018). Adoption of Robots, Artificial Intelligence and Service Automation by Travel, Tourism and Hospitality Companies - A Cost-Benefit Analysis. In Marinov, V., Vodenska, M., Assenova, M. & Dogramadjieva E. (Eds.) *Traditions and Innovations in Contemporary Tourism* (pp.190-203). Newcastle upon Tyne, UK: Cambridge Scholars Publishing.

Joo, D. et al. (2018). Residents' Attitude towards Domestic Tourists Explained by Contact, Emotional Solidarity and Social Distance. *Tourism Management*, *64*, 245-257.

Kang, Y. J., & Lee, W. J. (2015). Self-Customization of Online Service Environments by Users and Its Effect on Their Continuance Intention. *Service Business*, *9*(2), 321-342.

Locker, K. O. (1995). *Business and Administrative Communication.* Chicago: Richard D.

Morgan, P. (2010). Towards a developmental theory of place attachment. *Journal of Environmental Psychology*, 30(1), 11–22.

Muntinga, D. G. et al. (2011). Introducing COBRAs: Exploring Motivations for Brand-related Social Media Use. *International Journal of Advertising*, *30*(1), 13-46.

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 Distance and Cleanliness. *International Journal of Hospitality Management*, *91*, 102664.

Vance, A. et al. (2017). Using Trust and Anonymity to Expand the Use of Anonymizing Systems that Improve Security across Organizations. *Security Journal*, *30*(3), 979-999.

Winkler, R., & Söllner, M. (2018). Unleashing the Potential of Chatbots in Education: A State-of-the-Art Analysis.

Zimbardo, P. et al. (1970). The Human Choice: Individuation, Reason, and Order versus Deindividuation, Impulse, and Chaos. In W. J. Arnold & D. Levine (Eds.) (1969). *Nebraska Symposium on Motivation* (pp. 237-307). Lincoln, NE: University of Nebraska Press.