ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 71, january-march 2025, № 1
P. 1-13

Aleksandra Vujko [1]
Singidunum University,
Faculty of Tourism and Hospitality Management

Zoran Papović[2]
Kosovo Metohija Academy,
Department: Peć - Leposavić,

Drago Cvijanović[3]
University of Kragujevac,
Faculty of Hotel Management anf Tourism in Vrnjačka Banja

ORIGINAL SCIENTIFIC ARTICLE
DOI: 10.5937/ekonomika2501001V
Received: November 25, 2024
Accepted: December 08, 2024

ARTIFICIAL INTELLIGENCE AND IT'S INFLUENCE ON SUSTAINABLE TRAVEL AGENCIES BUSINESS: THE ROLE OF CHATBOTS IN CREATING TOURIST ARRANGEMENTS

Abstract

Among the innovations that have garnered significant attention is the use of chatbots, which serve as automated agents designed to facilitate communication and streamline processes for both travel agencies and their clientele. This paper will explore how chatbots contribute to the sustainability of agency businesses by enhancing operational efficiency, improving customer experience, and embodying modernity and innovation. The research included 243 travelers who used ChatGPT for their trips, and factor analysis and Structural Equation Modeling (SEM) were used to analyze the data. The result was that chatbot users gather their positive experiences around three key factors: Simplicity of travel, Frequency of travel and Organization of travel, which confirmed the main hypothesis H that the deployment of chatbots not only aligns agency businesses with contemporary trends but also significantly enhances their operational efficiency, customer satisfaction, and overall market presence. One of the main limiting factors for the application of chatbots is the low prevalence of software that has such functions. The adoption of chatbots serves as a clear indicator of modernity and innovation within agency businesses, positioning them as forward-thinking entities in an ever-evolving market.

Key words: *AI, travel agencies business, chatbots, business sustainability, SEM*

JEL classification: *O3, Z3*

[1] avujko@singidunum.ac.rs, ORCID ID https://orcid.org/0000-0001-8684-4228

[2] 1zoranpapovic@gmail.com, ORCID ID (https://orcid.org/0009-0005-1501-9067)

[3] dvcmmv@gmail.com, ORCID ID (https://orcid.org/0000-0002-3816-3679)

ВЕШТАЧКА ИНТЕЛИГЕНЦИЈА И ЊЕН УТИЦАЈ НА ОДРЖИВО ПОСЛОВАЊЕ ТУРИСТИЧКИХ АГЕНЦИЈА: УЛОГА ЧЕТБОТОВА У КРЕИРАЊУ ТУРИСТИЧКИХ АРАНЖМАНА

Апстракт

Међу иновацијама које су привукле значајну пажњу је употреба цхатботова, који служе као аутоматизовани агенти дизајнирани да олакшају комуникацију и поједноставе процесе како за туристичке агенције тако и за њихову клијентелу. Овај рад ће истражити како чет-ботови доприносе одрживости агенцијског пословања тако што побољшавају оперативну ефикасност, побољшавају корисничко искуство и доприносе модернизацији пословања и иновативности. Истраживање је обухватило 243 путника који су користили ЦхатГПТ за своја путовања, а за анализу података коришћена је факторска анализа и Моделирање структурних једначина (СЕМ). Резултат је био да корисници цхатбот-а своја позитивна искуства прикупљају око три кључна фактора: поједностављена путовања, учесталост путовања и организација путовања, што је потврдило главну хипотезу Х да увођење цхатбота не само да усклађује пословање агенција са савременим трендовима већ и значајно унапређује њихову оперативну ефикасност, задовољство купаца и укупно присуство на тржишту. Један од главних ограничавајућих фактора за примену цхатбот-а је ниска распрострањеност софтвера који има такве функције. Усвајање цхатботова служи као јасан показатељ модерности и иновација у агенцијским пословима, позиционирајући их као субјекте који размишљају о будућности на тржишту које се стално развија.

Кључне речи: *вештачка интелигенција, пословање туристичких агенција, цхатботс, одрживост пословања, СЕМ*

Introduction

The advent of technology has transformed various sectors, with the travel industry being one of the most significantly impacted (Ku & Chen, 2024; Bešić et al. 2024). Among the myriad of innovations, artificial intelligence (AI) stands out as a pivotal force (Abou-Foul, 2023), particularly through the integration of chatbots (Dwivedi et al., 2023). According to Li et al. (2021) these AI-driven tools have begun to reshape the way sustainable travel agencies conduct their business, particularly in crafting tourist arrangements (Ku, 2022). As the global emphasis on sustainability grows, chatbots not only enhance operational efficiency but also promote sustainable tourism practices (Wang et al. 2024).

The integration of chatbots within sustainable travel agencies marks a significant evolution in the travel industry. Chatbots are AI-powered software applications designed to simulate conversation with human users, particularly over the internet (Kayeser,

2024). Their utilization in travel agencies is primarily aimed at improving customer service through instant communication. For sustainable travel agencies, the benefits of employing chatbots are manifold (Scarpi, 2024). They can handle a vast number of inquiries simultaneously, allowing agencies to operate efficiently without compromising on service quality. For instance, companies like Booking.com and Trivago have successfully implemented chatbots that assist travelers in finding eco-friendly lodging and travel options (Fraccastoro et al., 2021), showcasing how technology bridges the gap between customer needs and sustainable choices (Schuetzler et al., 2020; Hsu & Lee, 2023). Furthermore, these AI tools can provide real-time assistance on sustainability measures taken by the travel agency, enhancing transparency and building trust with environmentally conscious consumers (Krakowski et al., 2022). Such successful implementations suggest that chatbots can play an integral role in promoting the principles of sustainability within the travel sector.

Enhancing customer experience is another crucial role that chatbots play in sustainable travel agencies. The advantage of 24/7 availability cannot be overstated; customers can receive immediate responses to their inquiries at any hour, removing the frustration of waiting for business hours to connect with a representative (Kanan, 2019). This instant communication is particularly beneficial for international travelers who may be operating across different time zones (Haptik, 2022). Moreover, chatbots can provide personalized travel recommendations tailored to individual user preferences, analyzing past interactions and customer data to suggest trips that align with sustainable practices. For example, a user interested in eco-tourism may receive recommendations for destinations renowned for their conservation efforts, thus promoting responsible travel choices. Additionally, chatbots streamline the booking process by guiding customers through each step, reducing wait times and minimizing the likelihood of errors. This seamless user experience not only satisfies consumer expectations but also encourages them to engage with sustainable travel options more readily, thereby fostering a culture of responsible tourism (Adam eet al., 2021).

The role of chatbots extends beyond mere customer service; they are instrumental in promoting sustainable tourism practices. By providing comprehensive information about eco-friendly travel options, chatbots empower tourists to make informed decisions (Schanke et al., 2021). For instance, a chatbot could outline the benefits of staying at a green-certified hotel or the carbon footprint of various transportation methods, thereby encouraging responsible choices (Yu et al., 2022). Additionally, chatbots can promote responsible travel behaviors by proactively sharing tips on minimizing waste, respecting local cultures, and contributing to conservation efforts. Furthermore, through interactions with users, chatbots can collect valuable data on customer preferences and behaviors, enabling sustainable travel agencies to tailor their offerings accordingly (Zhou, C., & Chang, 2024). This data-driven approach allows agencies to create customized sustainable travel packages that resonate with the values of eco-conscious consumers, thus enhancing customer satisfaction while promoting sustainable practices (Li et al., 2023).

This paper will explore the integration of chatbots into sustainable travel agencies, their role in enhancing customer experiences, and their contribution to promoting eco-friendly travel options. By critically analyzing these facets, we can understand how chatbots are not just technological advancements but essential partners in the movement

towards sustainable tourism. The work started from the starting hypothesis of the work that the use of chatbots in agency business contributes to the sustainability of business because agencies keep up with the times and modern changes, which is reflected in the greater number of trips. At the same time, this AI tool serves as a powerful motivator that stimulates tourist needs and thereby influences the increase in the sale of arrangements. A conclusion has been reached that the use of chatbots contributes to Simplicity of travel, Frequency of travel as well as better Organization of travel.

Theoretical backgrounds

In practice though, there are several types of chatbots in business. Acccording to Larsen & Følstad (2024) the simplest type are Rules-based chatbots.This is today's simplest chatbot type. It works with buttons, which is how people would engage with it— using predefined options. In most cases, such chatbots also require several selections by a person so that they can answer with something that would be relevant. Hence, bots have the longest user journey and take the slowest in leading the customer to his/her goal. However, this type of bot works best where lead qualification is concerned. The question is posed by the bot, people answer by pressing any one of the options available, and then the bot, which already has defined answers for this, will make the statement. For some other more complicated things, such chatbots are not so good since they can not decide anything on their own —and this is the reason there are chatbots supported by artificial intelligence (Lin et al., 2022).

Aaccording to (Luo et al., 2029), Chatbots based on artificial intelligence also exist. Artificial intelligence (AI) is a simulation of human intelligence. AI is a field of computer science but is actually an endeavor to create intelligent machines that work and think like humans do (McLean et al., 2021). It can understand free language, but has a pre-defined flow to make sure the problem is solved. It remembers the context of the conversation and the users' preferences. Can jump from one conversation point to another. Therefore, it will address a random user request at any time. These use machine learning, artificial intelligence and natural language processing to understand people.

According to Han et al., (2023) Intellectually independent chatbots deploy machine learning, the capacity with which the chatbot learns from the inputs and the requests of the user (Meyer et al., 201). Machine learning is defined as the ability of computers to learn from data on their own accord by detecting patterns and making decisions with little human interference (Nilashi et al., 2022). Intellectually independent chatbots are specifically trained to understand certain keywords and phrases that would prompt the bot to respond in any way. They are only getting better with time, understanding more and more questions. One could say they learn by doing and get better with practice (Markovitch et al., 2024).

One of the great advantages of chatbots is that, unlike applications, they are not downloaded, do not need to be updated, and do not take up space in the phone's memory. Another possibility we have is to integrate several bots in the same chat. Online chatbots automate customer support, thereby saving time and effort. They are also applicable to some other business tasks such as collecting data from customers, helping to organize meetings, and reducing overhead costs. No wonder the market for chatbots is of an

imposing size. Automatization and digitization are the crucial factors in the sphere of tourism development (Mandić et al., 2024). The key reason for it is not the replacement of the personnel but a complete liberation of employees from routine functions and later optimizing the work-hours factor of quality service and subsequent customer satisfaction plus resource-saving effects. Several companies set this as a goal within the framework of growth and development in their digital footprint and existence towards which they provide clients with chat conversations with a virtual assistant (Melian-Gonzalez et al., 2021).

This year, 80% of businesses will interact with consumers over a chatbot, according to (Mandić et al., 2024). But does this apply to tourism? According to Software Advice, an organization that performs research on technologies, in the report's survey results 91% of travelers would use smart self-service platforms if provided with the necessary information or service. Since 1966 chatbots were just imitating communication with the people by sending written messages (Meyer et al., 2014). Today, chatbots can respond by sending images, video clips, audio messages, pdf files, and even VR. The technology allows the chatbot to "understand" what the client wants and respond according to pre-programmed information. The virtual assistant works 24/7 and can communicate in several languages to help a big lot of consumers at the same time (Omarov et al., 2022).

It can be integrated into a business messenger account or a website as a software solution. Other than answering frequently asked questions, it can do several other duties too which are integrated to the database and other platforms to make reservations, to take requests for organizing events, room service, massages, and to reserve a table at a restaurant. The hotel or restaurant manager only needs to make a choice on what the chatbot will do to contribute to the business, staff, and consumers (Pham, 2024).

Methodology

Total Number of 243 travelers who used ChatGPT for their trips took part in the research. Of the total number of passengers, 140 (57.6%) were male, and 103 (42.4%) were female. Respondents used artificial intelligence to plan their trips, and they were referred to AI by travel agents in several travel agencies in Novi Sad (Top Travel, Grand Tours and Šajka). When they arrived at travel agencies in the period from February to August 2024, they left their e-mail addresses, to which they were then sent a link with questions that had to be answered on a five-point Likert scale. The questions were grouped by similarity, and then the responses were analyzed using factor analysis. The model with the highest factor loading was then reached through the elimination system.

Factor 1. Simplicity of travel
v1 They direct me to interactive maps
v5 Travel decisions are made easier

Factor 2. Frequency of travel
v2 Travel is more meaningful
v4 More frequent travel
v7 Having a personal guide in pocket

Factor3. Organization of travel
v8 Saves resources, money and time
v3 Route suggestions are creative

The paper started from the starting hypothesis of paper H that the use of chatbots in agency business contributes to the sustainability of business because agencies keep up with the times and modern changes, which is reflected in the greater number of sold tourist arrangements and trips. In order to verify the initial hypothesis, it was necessary to answer three questions: In what way do chatbots contribute to the sustainability of travel agency business? What makes agency businesses viable when it comes to chatbots? How do chatbots contribute to the sustainability of agency business? In order to answer these questions, it was necessary to set sub-hypotheses of the work. The first sub-hypothesis h1: The role of chatbots in agency business is to enable the simplicity of travel for end users; Second sub-hypothesis h2: Chatbots represent a personal AI assistant; Third sub-hypothesis h3: Chatbots contribute to saving time and money.

Structural Equation Modeling (SEM) is like a multivariate approach to the application of a structural model to indicate causal relationships between observed variables. SEM is the technique that exposes these links amongst dependent data using path coefficients highlighting the degree to which these connections are strong. SEM is the powerful technique that can handle multicollinearity; in fact, it occurs when any variable has very high correlations with two or more other variables. One of the advantages of SEM over multiple regressions and factor analysis is that SEM has to be guided by all components of modeling. Model development and refinement are heavily dependent on theory. Major misuse might happen in SEM if the data are just adapted to fit any of the SEM rightly and then further expansion of theory based only on the results of the analysis.

Research results and Discussion

Factor analysis (see Table 1 and 2) yielded a model that categorizes the variables into three factors, which together account for 71.414% of the variance.

Table 1. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,010	28,708	28,708	2,010	28,708	28,708
2	1,805	25,791	54,499	1,805	25,791	54,499
3	1,184	16,915	71,414	1,184	16,915	71,414
4	,807	11,524	82,938			
5	,665	9,502	92,440			
6	,333	4,764	97,204			
7	,196	2,796	100,000			

Source: Prepared by the authors (2024)

Table 2. Component Matrix

	Factors		
	1	2	3
v1	,459	-,005	,728
v2	,663	-,650	,023
v3	,485	,605	-,304
v4	,526	,262	,180
v5	-,418	-,097	,690
v7	,591	-,704	-,166
v8	,568	,666	,158

Source: Prepared by the authors (2024)

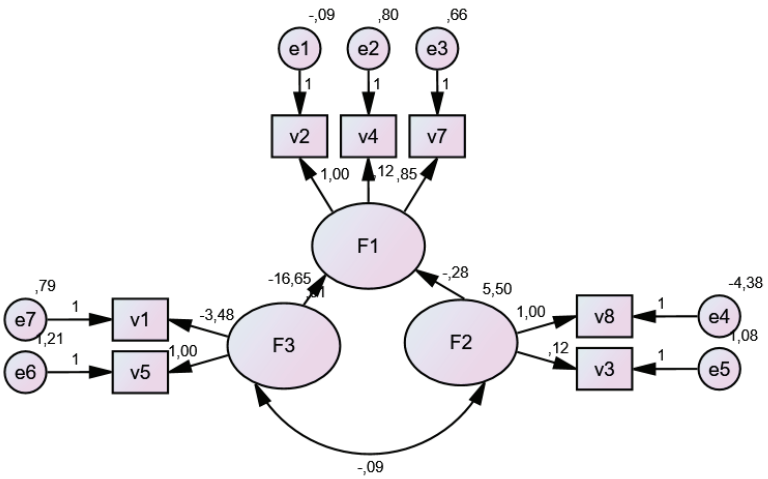
Table 2 shows the factors and variables grouped around them. Factor 1. "Simplicity of travel" answered the first question: In what way do chatbots contribute to the sustainability of travel agency business? Chatbots have emerged as a fundamental tool for travel agencies, characterized by their ability to provide instantaneous customer service and support. One of the most significant advantages of chatbots is their availability, which allows users to inquire about travel options, make bookings, and resolve issues at any hour of the day. This feature is particularly beneficial for travelers in different time zones or those seeking immediate assistance late at night or early in the morning. Additionally, chatbots can offer a level of personalization that enhances the user experience. By utilizing data analytics and machine learning algorithms, chatbots analyze user preferences and previous interactions to deliver tailored travel recommendations. For example, if a user frequently books family-friendly resorts, the chatbot can prioritize similar options in future searches, making the planning process more efficient and enjoyable. The ability to provide customized suggestions not only increases user satisfaction but also fosters loyalty, as clients are more likely to return to agencies that understand and cater to their individual needs.

Factor 2. "Frequency of travel" answered the second question: What makes agency businesses viable when it comes to chatbots? The applications of chatbots as personal AI assistants are extensive and varied, significantly impacting sectors such as customer service, personal productivity, and e-commerce. In customer service, chatbots offer 24/7 availability, addressing customer inquiries and resolving issues without human intervention. Moreover, chatbots enhance personal productivity by assisting users with scheduling, reminders, and task management. Applications like Microsoft Teams employ chatbots to help users organize meetings and track deadlines, streamlining workflow and reducing the cognitive load on individuals. In the realm of e-commerce, chatbots play a pivotal role in guiding customers through the purchasing process, offering personalized product recommendations, and answering questions about products. Shopify's chatbot integration, for instance, enables businesses to engage customers in real-time, increasing conversion rates and enhancing the overall shopping experience.

Factor3. "Organization of travel" answered the third question: How do chatbots contribute to the sustainability of agency business? Unlike human agents who are restricted by working hours, chatbots can handle inquiries 24/7, ensuring that customers receive assistance at any time of the day or night. For instance, a customer attempting to

purchase a product at midnight can receive immediate answers to their questions about product specifications or shipping options, thereby enhancing their shopping experience. Furthermore, chatbots boast rapid response times, often delivering answers in mere seconds, which is a stark contrast to human agents who may take minutes to respond due to factors like workload or personal schedules. This swiftness not only satisfies customers but also frees human staff from handling routine inquiries, allowing them to focus on more complex issues that require human empathy and problem-solving skills. Consequently, businesses can allocate their human resources more effectively, reducing the strain on customer service teams and improving overall operational efficiency. In addition to streamlining operations, chatbots significantly reduce operational costs for businesses. The most apparent cost-saving benefit stems from the decrease in labor costs associated with customer service representatives. By implementing chatbots, tourist agencies can limit the number of human agents needed to manage customer inquiries, as a single chatbot can handle thousands of requests simultaneously. This not only cuts down on salary expenses but also lessens the financial burden of employee benefits and overhead costs. Moreover, chatbots incur lower training and onboarding expenses for new employees, as there is less need for extensive training programs that are typically required for human staff. Additionally, chatbots minimize human error, which can lead to costly mistakes in customer interactions such as incorrect order processing or miscommunication. By ensuring consistency and accuracy in responses, chatbots contribute to a more reliable service experience, ultimately resulting in cost savings for businesses.

Figure 1. Structural Equation Modeling (SEM). Source: Prepared by the authors (2024)



Source: Prepared by the authors (2024)

In order to better understand the interdependence of factors and variables, an SEM analysis was performed. Looking at the graph (Figure 1) and table 3, you can see how certain factors and variables influence each other. Factor 3 “Organization of travel”

has a potentially negative impact on Factor 1 “Simplicity of travel”. Logically, because the simplified organization directly affects the simplification of the execution of tourist arrangements. Also, Factor 2 “Frequency of travel” can potentially negatively affect Factor 1 “Simplicity of travel”. Frequent trips that do not have quality content are directly proportional to the use of interactive maps. On the other hand, a large positive influence of the frequency of travel with money and free time can be observed. More money and more free time directly affects the frequency of tourist trips. In this connection, it is the chebots that help tourists to make faster decisions, and then to decide where and when to travel in accordance with their resources. All this confirmed the main hypothesis of the paper that the use of chatbots in agency business contributes to the sustainability of business because agencies keep up with the times and modern changes, which is reflected in the greater number of sold tourist arrangements and trips.

Table 3. Standardized Regression Weights:
(Group number 1 - Default model)

	Estimate
F1 <--- F3	-1,182
F1 <--- F2	-,617
v2 <--- F1	1,043
v4 <--- F1	,143
v7 <--- F1	,743
v8 <--- F2	2,218
v3 <--- F2	,257
v5 <--- F3	,068
v1 <--- F3	-,285

Source: Prepared by the authors (2024)

Table 4. Model fitting indicators

CFI	0,952
TLI	0,941
GFI	0,917
RMSEA	0,049
Chi-square	76,770

Source: Prepared by the authors (2024)

All of the model fitting indicators as shown in Table 4 indicates an acceptable fit. A RMSEA value of 0.049 (between 0.05 and 0.08) indicates a good fit. Higher values (>0.90) of CFI (0.952), TLI (0.941) and GFI (0.917) indicates a good fit. The Chi-square test shows that there are no significant statistical differences in the respondents’ answers

Conclusion

The integration of chatbots into sustainable travel agencies signifies a pivotal advancement in the travel industry, marrying technology with the imperative of ecological consciousness. By improving operational efficiency, enhancing customer experiences, and promoting sustainable practices, chatbots serve as vital tools in the quest for sustainable tourism. As travelers increasingly seek eco-friendly options and personalized experiences, the role of chatbots will continue to expand, ultimately leading to a more sustainable travel ecosystem. This synergy between AI technology and sustainable practices not only meets the demands of modern travelers but also contributes to the broader goal of protecting our planet for future generations. The future of travel lies in this harmonious blend, showcasing that innovation and sustainability can indeed coexist.

The integration of chatbots in the travel industry significantly enhances user experience by streamlining the booking process for flights and accommodations. Traditional booking methods often involve lengthy procedures, requiring users to navigate multiple websites or make phone calls to customer service representatives. Chatbots simplify this experience by allowing users to complete bookings through conversational interfaces, thus reducing friction and minimizing the time spent on travel arrangements. Furthermore, chatbots contribute to user satisfaction by drastically reducing wait times. Instead of placing a call and being placed on hold, users can receive immediate responses to their inquiries, which is especially critical during peak travel seasons when demand for support is higher. In addition to facilitating bookings, chatbots provide real-time updates and notifications regarding travel itineraries, such as flight delays or gate changes. This proactive communication ensures that travelers are well-informed, alleviating potential stress and enhancing their overall travel experience.

The paper showed that travelers are happy to use chatbots, that they help them to make travel decisions faster, easier and more efficiently. Also, chatbots save them money and time, making it possible for them to travel again. Therefore, chatbots are not a threat, but on the contrary, a powerful tool in the hands of tourism workers.

Despite the myriad benefits presented by chatbots in the travel industry, there are notable challenges and limitations that must be acknowledged. One primary limitation is their difficulty in understanding complex user queries, particularly those that require nuanced responses or involve multiple layers of information. For instance, a traveler seeking a multi-city itinerary with specific preferences may find that a chatbot struggles to provide satisfactory assistance, leading to frustration. Additionally, the reliance on technology introduces potential vulnerabilities, such as technical issues that may disrupt service or impair the chatbot's functionality. These challenges underscore the importance of balancing automation with the human touch in customer service interactions. While chatbots can handle routine inquiries and tasks, there remains a need for human agents to address more intricate issues and provide empathetic support. As the travel industry continues to evolve, the effective integration of chatbots will depend on the ability to harness their strengths while mitigating their limitations, ensuring that user needs are met holistically.

References

Adam, M., Wessel, M., Benlian, A., (2021). AI-based chatbots in customer service and their effects on user compliance. Electron. Mark. 31 (2), 427–445.

Abou-Foul, M., Ruiz-Alba, J. L., & Lopez-Tenorio, P. J. (2023). The impact of artificial intelligence capabilities on servitization: The moderating role of absorptive capacityA dynamic capabilities perspective (Article) Journal of Business Research, 157, Article 113609. https://doi.org/10.1016/j.jbusres.2022.113609.

Bešić, C., Bogetić, S., Bakator, M., & Petrevska, I. (2024). The impact of sustainability, digital technologies, and employee knowledge on the competitiveness of personalized tourist offer. *Hotel and Tourism Management*, *12*(1). https://doi.org/10.5937/menhottur2400010B

Dwivedi, Y. K., Balakrishnan, J., Baabdullah, A. M., & Das, R. (2023). Do chatbots establish "humanness" in the customer purchase journey? An investigation through explanatory sequential design. Psychology & Marketing. https://doi.org/10.1002/mar.21888

Fraccastoro, S., Gabrielsson, M., & Pullins, E. B. (2021). The integrated use of social media, digital, and traditional communication tools in the B2B sales process of international SMEs (Article) International Business Review, 30(4), Article 101776. https://doi.org/10.1016/j.ibusrev.2020.101776.

Hsu, W. C., & Lee, M. H. (2023). Semantic Technology and Anthropomorphism: Exploring the Impacts of Voice Assistant Personality on User Trust, Perceived Risk, and Attitude. Journal of Global Information Management, 31(1). https://doi.org/10.4018/jgim.318661

Haptik. (2022). 10 best chatbots in India - Chatbots Journal. Medium. https://chatbotsjournal.com/10-best-chatbots-in-india-b7df5e62021a.

Han, E., Yin, D., Zhang, H., (2023). Bots with feelings: should AI agents express positive emotion in customer service? Inf. Syst. Res.: ISR 34 (3), 1296–1311. https://doi.org/10.1287/isre.2022.1179.

Kayeser, J.F. (2024). Rapport with a chatbot? The underlying role of anthropomorphism in socio-cognitive perceptions of rapport and e-word of mouth. J. Retailing Consum. Serv. 77, 969–6989. https://doi.org/10.1016/j. jretconser.2023.103666.

Krakowski, S., Luger, J., & Raisch, S. (2022). Artificial intelligence and the changing sources of competitive advantage. Strategic Management Journal, 44(6), 1425–1452. https://doi.org/10.1002/smj.3387

Ku, E. C. S. (2022). Developing business process agility: Evidence from interorganizational information systems of airlines and travel agencies (Article) Journal of Air Transport Management, 103, Article 102247. https://doi.org/10.1016/j. jairtraman.2022.102247

Ku, E.C.S., & Chen, D.C. (2024). Artificial intelligence innovation of tourism businesses: From satisfied tourists to continued service usage intention. International Journal of Information Management, 76, 102757, https://doi.org/10.1016/j.ijinfomgt.2024.102757.

Kannan, P., (2019). Does your company really need a chatbot? Harvard Business Review. https://hbr.org/2019/05/does-your-company-really-need-a-chatbot

Li, L., Lee, K. Y., Emokpae, E., & Yang, S. B. (2021). What makes you continuously use chatbot services? Evidence from chinese online travel agencies. Electronic Markets, 31(3), 575–599. https://doi.org/10.1007/s12525-020-00454-z

Luo, X., Tong, S., Fang, Z., Qu, Z., 2019. Frontiers: machines vs. humans: the impact of artificial intelligence chatbot disclosure on customer purchases. Market. Sci. 38 (6), 937–947. https://doi.org/10.1287/mksc.2019.1192.

Larsen, A.G., & Følstad, A., (2024). The impact of chatbots on public service provision: a qualitative interview study with citizens and public service providers. Govern. Inf. Q. 41 (2), 101927. https://doi.org/10.1016/j.giq.2024.101927

Lin, X., Shao, B., Wang, X., (2022). Employees' perceptions of chatbots in B2B marketing: affordances vs. disaffordances. Ind. Market. Manag. 101, 45–56. https://doi.org/10.1016/j.indmarman.2021.11.016.

Li, B., Liu, L. N., Mao, W. C., Qu, Y. C. M., & Chen, Y. H. (2023). Voice artificial intelligence service failure and customer complaint behavior: The mediation effect of customer emotion (Article) Electronic Commerce Research and Applications, 59, Article 101261. https://doi.org/10.1016/j.elerap.2023.101261.

McLean, G., Osei-Frimpong, K., & Barhorst, J. (2021). Alexa, do voice assistants influence consumer brand engagement? - Examining the role of AI powered voice assistants in influencing consumer brand engagement. Journal of Business Research, 124, 312–328. https://doi.org/10.1016/j.jbusres.2020.11.045

Markovitch, D.G., Stough, R.A., Huang, D., (2024). Consumer reactions to chatbot versus human service: an investigation in the role of outcome valence and perceived empathy. J. Retailing Consum. Serv. 79, 103847. https://doi.org/10.1016/j.jretconser.2024.103847

Melian-Gonzalez, S., Gutierrez-Tano, D., & Bulchand-Gidumal, J., (2021). Predicting the intentions to use chatbots for travel and tourism. Curr. Issues Tourism 24 (2), 192–210. https://doi.org/10.1080/13683500.2019.1706457

Meyer, G., Adomavicius, G., Johnson, P.E., Elidrisi, M., Rush, W.A., Sperl-Hillen, J.M., O'Connor, P.J., (2014). A machine learning approach to improving dynamic decision making. Inf. Syst. Res. 25 (2), 239–263. https://doi.org/10.1287/isre.2014.0513

Mandić, D., Knežević, M., Borovčanin, D., & Vujko, A. (2024). Robotisation and service automation in the tourism and hospitality sector: a meta-study (1993-2024). Geojournal of Tourism and Geosites, 55(3), 1271–1280. https://doi.org/10.30892/gtg.55327-1299

Nilashi, M., Abumalloh, R. A., Samad, S., Alrizq, M., Alyami, S., Abosaq, H., Alghamdi, A., & Akib, N. A. M. (2022). Factors impacting customer purchase intention of smart home security systems: Social data analysis using machine learning techniques (Article) Technology in Society, 71, Article 102118. https://doi. org/10.1016/j.techsoc.2022.102118.

Omarov, B., Narynov, S., Zhumanov, Z., Alzhanova, E., Gumar, A., Khassanova, M.,

(2022). Artificial intelligence enabled conversational agent for mental healthcare. Int. J. Health Sci. 6 (3), 1544–1555. https://doi.org/10.53730/ijhs.v6n3.13239

Pham, H.C., 2024. What drives tourists' continuance intention to use ChatGPT for travel services? A stimulus-organism-response perspective. J. Retailing Consum. Serv. 78, 969–6989. https://doi.org/10.1016/j.jretconser.2024.103758.

Scarpi, D., (2024). Strangers or friends? Examining chatbot adoption in tourism through psychological ownership. Tourism Manag. 102, 104873. https://doi.org/10.1016/j.tourman.2023.104873.

Schanke, S., Burtch, G., Ray, G., (2021). Estimating the impact of "humanizing" customer service chatbots. Inf. Syst. Res. 32 (3), 736–751. https://doi.org/10.1287/ isre.2021.1015.

Schuetzler, R.M., Grimes, G.M., Scott Giboney, J., (2020). The impact of chatbot conversational skill on engagement and perceived humanness. J. Manag. Inf. Syst. 37 (3), 875–900. https://doi.org/10.1080/07421222.2020.1790204

Wang, L., Xiao, J., Luo, Z., Guo, Y., Xu, X. (2024). The Impact of Default Options on Tourist Intention Post Tourism Chatbot Failure: The Role of Service Recovery and Emoticon. Tourism Management Perspectives, 53, 101299, https://doi.org/10.1016/j.tmp.2024.101299.

Yu, S., Xiong, J.(Jill)., Shen, H., (2022). The rise of chatbots: the effect of using chatbot agents on consumers' responses to request rejection. J. Consum. Psychol. https://doi.org/10.1002/jcpy.1330. The Official Journal of the Society for Consumer Psychology.

Zhou, C., & Chang, Q., (2024). Informational or emotional? Exploring the relative effects of chatbots' self-recovery strategies on consumer satisfaction. J. Retailing Consum. Serv. 78, 103779. https://doi.org/10.1016/j.jretconser.2024.103779.