invtur2024 conference

Proceedings of the INVTUR Conference 2024
8-10 May 2024, University of Aveiro, Portugal

Pages
711 – 723

Integration of artificial intelligence in hospitality management: A comprehensive literature review

BENCE CSAPODY & MELINDA JASZBERENYI

Corvinus University of Budapest

Contacting author: bence.csapody@uni-corvinus.hu

Abstract | Recent challenges in restaurant industry such as changes in consumer needs, shortage of workers and the COVID-19 pandemic have made digitalization even more crucial. Meanwhile, artificial intelligence solutions have emerged in the market to enhance management systems efficiency by controlling costs, boosting productivity, and enhancing customer satisfaction.

This study contributes to the knowledge on artificial intelligence's utilization in restaurant management through a systematic literature review. The review followed a four-step methodology and carried out inquiries across academic databases (Web of Science, Scopus) with a set of keywords to procure appropriate studies. From the initially identified 1,263 records, 22 studies published between 2019 and 2023 were selected for full-text literature analysis.

The predominant themes of the papers revolve around customer operations, marketing, and food and beverage preparation. Based on the results, AI technology presents a wide range of advantages for restaurants, encompassing elevated operational efficiency and customer service standards, diminished labor costs, and augmented revenue streams. Notwithstanding the obstacles, including the costs associated with implementation, technical expertise deficits, and concerns related to data security, AI holds a promising future within the restaurant sector.

Keywords | Artificial intelligence, Restaurant management, Hospitality digitization, Systematic literature review, Smart hospitality

1. Introduction

The concept of incorporating automated technologies into the hospitality sector has its roots in the insights of Collier (1983), who posited that the wave of automation would inevitably extend to various segments of the hospitality industry, encompassing establishments such as restaurants (Collier, 1983). By now, smart technology, artificial intelligence, robotics, and algorithms (abbreviated as STARA) have propelled the Fourth Industrial Revolution (Industry 4.0), which has completely transformed the daily operations of hospitality establishments (Ding, 2021). As the global demand for culinary experiences continues to rise, restaurant owners and managers are increasingly turning

to artificial intelligence (AI) solutions to enhance operational efficiency, customer satisfaction, and overall business performance (Blöcher & Alt, 2020). AI has brought a wide range of applications within the restaurant sector, ranging from automated order processing and inventory management to personalized customer experiences through recommendation systems.

A projection outlined in a report anticipates a substantial influence of AI on the restaurant sector by the year 2025 (Oracle, 2019). The trajectory of AI and robotic applications is expected to broaden within restaurant operations, encompassing various domains such as kitchen preparation, quality assurance in culinary processes, staff training initiatives, as well as guest service and seating management, among other areas (Oracle, 2019). As technology becomes an integral part of the dining experience, understanding the nuances of AI implementation in restaurant management becomes imperative for both scholars and industry practitioners.

This systematic literature review aims to provide a comprehensive analysis of the existing body of knowledge on the integration of AI in restaurant management, exploring its implications, challenges, and potential benefits. The review adhered to a four-step methodology, conducting inquiries across esteemed academic databases, including Web of Science and Scopus, utilizing a predefined set of keywords to retrieve pertinent studies. Out of the initially identified 1,263 records, a screening process led to the selection of 22 studies published between 2019 and 2023 for thorough, full-text analysis.

2. Methods

As the first step of the literature analysis, it was necessary to select the databases to search for literature. Accordingly, scientific databases Scopus, and Web of Science were used for literature collection. The selection of these interfaces was based on their recognized value in the scientific world. The strength of Scopus lies in the wide coverage of different journals, thereby greatly supporting keyword searches (Falagas et al., 2008). However, Wanyama et al. (2021) argue that the Scopus database does not include all available publications. Thus, another search engine (Web of Science) was selected to fill in some gaps, as these online interfaces proved to be popular in previous literature review of tourism and hospitality research (Rachão et al, 2019).

This research addresses the following review question: In what ways can AI-based solutions be effectively utilized in diverse restaurant business processes?

The review of relevant literature was a four-step process (see Figure 1) that began with a systematic search using the various online search engines and databases outlined above, using keywords related to the topic. The keyword search was conducted in the months of November and December 2023.

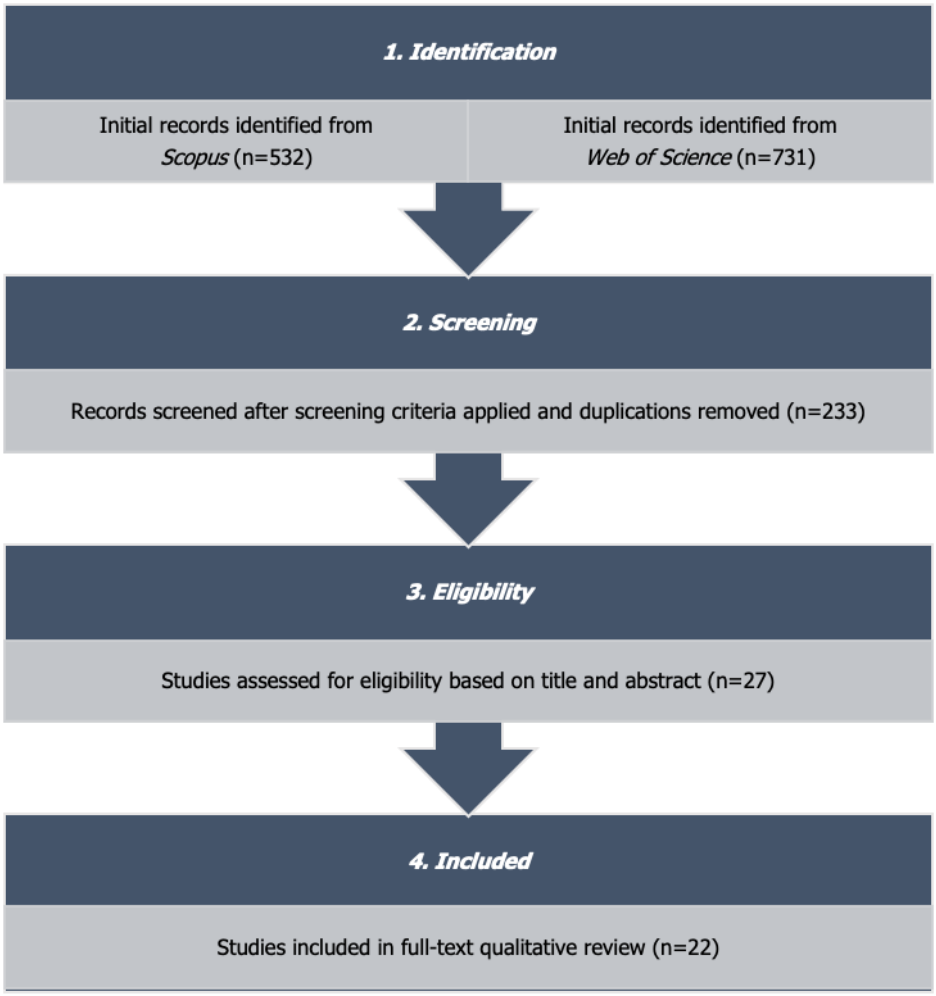

Figure 1 | Flow chart of the systematic literature analysis process

Source: own editing

In both databases, predefined keywords in English were used to obtain relevant results (see Table 1). Search was done in article title, abstract and keywords. With different combinations of these, 532 hits were generated on Scopus, and 731 hits resulted on Web of Science, totaling 1,263 hits, without filtering out duplicates.

Table 1 | Used Databases, Set of Keywords, and Results Identified

Database	Keywords	Total Number of Identified Hits
Scopus	*"artificial intelligence" "restaurant" "restaurant management"*	*n= 532*
Web of Science		*n= 731*

Source: own editing

To finally include only relevant journals and current articles in the analysis, the articles had to meet certain conditions (screening criteria):

- The publication date must be between January 1, 2019, and December 1, 2023 to process timely articles.
- Conference presentations and proceedings, research notes, textbooks, and book chapters were not included in the research.
- Finally, to ensure the reliability of the literature, articles published in English in international, peer-reviewed journals were included in the analysis.

After elimination of duplicates, 233 articles were selected to be assessed for eligibility. These articles have been assessed based on the publishing journal, titles, and abstract, based on the following criteria:

- The publications must deal with the use of artificial intelligence in the restaurant management and various fields of restaurant operation.
- The articles must deal partially or completely with catering establishments (different types of restaurants), but at the same time, those that focused exclusively on hotel or tourism management were filtered out of the results.

As a result, 206 additional articles were excluded, and 27 publications obtained in this way were processed in full text. After full-text processing, 5 more results were excluded as they did not focus on the research topic. In total, 22 studies were included in the analyzed literature.

Table 2 | Typology of analyzed studies, providing a description of research approaches

Authors	Journal name	Business processes	Empirical/ theoretical	Data collection technique	Sample size	Method of analysis
(Nozawa et al., 2021)	Food Quality and Preference	multiple processes	empirical	survey	991	descriptive statistics
(Lee et al., 2021)	International Journal of Contemporary Hospitality Management	marketing	empirical	content of online reviews	1,483,858	multiple
(Blöcher & Alt, 2020)	Electronic Markets	multiple processes	empirical	secondary data	99	content analysis
(Wong et al., 2022)	International Journal of Contemporary Hospitality Management	customer operations	empirical	online reviews; interviews	na	multiple
(Wang & Papastathopoulos, 2023)	International Journal of Contemporary Hospitality Management	customer operations	empirical	survey	1,667	SEM
(Goel et al., 2022)	Tourism Review	customer operations	theoretical	secondary data	na	SLR
(Adak et al., 2022)	Foods	marketing	theoretical	secondary data	na	SLR

(Rasheed et al., 2023)	Technological Forecasting & Social Change	customer operations	empirical	interviews	22	thematic analysis
(Ding, 2021)	International Journal of Contemporary Hospitality Management	multiple processes	empirical	survey	190	SEM
(Lee et al., 2022)	Service Industries Journal	marketing	empirical	online reviews	43,496	content analysis
(Pereira et al., 2021)	Data	(other)	empirical	sensor data	3	time series analysis
(Seo & Lee, 2021)	Sustainability	customer operations	empirical	survey	338	SEM
(Leung & Loo, 2020)	Asian Journal of Technology Innovation	customer operations	theoretical	secondary data	na	na
(Zhu & Chang, 2020)	International Journal of Contemporary Hospitality Management	food and beverage preparation	empirical	survey	221	SEM
(Khoa et al., 2022)	International Journal of Contemporary Hospitality Management	multiple processes	theoretical	secondary data	na	na
(Ashfia Jannat Keya et al., 2023)	Cognitive Computation and Systems	marketing	theoretical	na	na	na
(Nahar et al., 2023)	International Journal on Semantic Web and Information Systems	customer operations	empirical	survey	1,100	na
(Daradkeh et al., 2023)	Sustainability	customer operations	empirical	interviews	20	thematic analysis
(Cui & Zhong, 2023)	Asia Pacific Journal of Marketing and Logistics	customer operations	empirical	survey	400	CFA
(Hajek & Sahut, 2022)	Technological Forecasting & Social Change	marketing	empirical	online reviews	608,598	content analysis
(Sung & Jeon, 2020)	Sustainability	food and beverage preparation	empirical	survey	317	SEM
(Lu et al., 2019)	International Journal of Hospitality Management	customer operations	empirical	survey	1,348	EFA, CFA

Source: own editing

3. Results

The following section presents the findings of a systematic literature review (SLR) on the integration of AI-based solutions in restaurant management and various fields of restaurant operations, by processing papers published since 2019. The SLR employed a qualitative strategy, utilizing content analysis of 22 scientific papers with a deductive approach.

To comprehend the prevailing publication trends, the subsequent section also provides frequency distributions. The publication rate on this topic remained slow until 2021 when a total of 5 papers were published (refer to Table 2). The predominant timeframe for the papers utilized in this study spans from 2022 to 2023, with 7 publications each year.

Regarding the journals of publication, the International Journal of Contemporary Hospitality Management stands out as the journal with the highest publication frequency (6 publications on this topic). Most of the papers were published in Q1-ranked journals (18 publications) based on Scimago Journal & Country Rank, while only 3 papers are found in Q2 and only 1 paper in Q3-ranked journals. Concerning the number of authors, most papers had 2 authors (8 papers), followed by 3 authors in 4 papers, and 4 authors in 5 papers.

After a full-text review of the papers, they were categorized according to their focus on various restaurant business processes (Blöcher & Alt, 2021), where AI-based solutions may be applied. The majority of the papers concentrate on customer operations (10 papers), marketing (5 papers), or food and beverage preparation (2 papers). The diverse spectrum of processes examined in the papers underscores the necessity for a comprehensive exploration of AI-based solutions in the restaurant industry.

Subsequently, the research approaches employed in each paper were analysed based on different criteria. An empirical approach predominates in the analysed papers, with 17 papers identified, while only 5 employed a theoretical approach. Out of the 22 publications, only 4 utilized a qualitative approach, with 13 employing a quantitative approach. The papers employed a broad array of analysis methods, with structural equation modelling (SEM) (5 studies) and content analysis (3 studies) being the most prevalent.

3.1. AI for Fake Review Detection and Restaurant Recommendations

AI plays a significant and multifaceted role in restaurant marketing, offering various tools and capabilities to enhance efficiency, customer engagement, and decision-making. By leveraging these AI-driven capabilities, restaurants can gain a competitive edge, streamline operations, and provide a more personalized and satisfying experience for their customers (Blöcher – Alt, 2020; Lee et al., 2022).

The popularity of consumer review platforms, such as TripAdvisor and Yelp, has rapidly increased in recent years, and they now play a pivotal role in the hospitality sector, offering crucial insights into the quality of products and services. Meanwhile, fake reviews are a major concern for restaurants as they aim to gain a competitive edge by either promoting or demoting specific services and products (Hajek & Sahut, 2022). Lee et al. (2022) devised an improved method for detecting fake reviews on online platforms, utilizing seven supervised machine learning (ML) algorithms with three types of fake review characteristics and 16 predictors for fake reviews. Based on the research, the supervised ML-based classification technique 'random forest' is the best prediction model for fake review detection. Among the predictors, time distance was found to be the most important feature, followed by linguistic attributes and review attributes. However, Hajek and Sahut (2022) stated that, based on their research, sentiment-dependent linguistic feature extraction combined with behavioral

features was the most effective tool to detect fake reviews on review platforms. According to Adak et al. (2022), the effectiveness of machine learning models (Naïve Bayes, maximum entropy classification, and support vector machine) in sentiment classification is reported to be inferior to traditional topic-based categorization. This discrepancy arises from the fact that customer reviews may convey negativity even without explicit negative language in the sentences. These models for detecting reviews can play a pivotal role in assisting practitioners to enhance the credibility, transparency, and reliability of review systems, thereby aiding potential customers in making informed purchase decisions (Lee et al., 2022).

In terms of restaurant recommendations, Keya et al. (2023) introduced a methodology that suggests restaurants to users based on their preferences, employing two models. The first, A Lite BERT (ALBERT), has undergone training on an extensive text corpus, enabling it to comprehend diverse linguistic patterns and relationships. The second model, the Simple Recurrent Unit (SRU), is utilized to capture time dependencies among reviews, thereby enhancing the overall performance of the model. This system aims to provide users with personalized restaurant recommendations aligned with their preferences, influencing the human decision-making process (Keya et al., 2023).

3.2. Use of AI in Food and Beverage Preparation

The restaurant industry is witnessing a notable transformation as AI-based robots are gradually taking over traditional human roles in kitchen and bar operations (Wong et al., 2022). While the integration of emerging technologies undoubtedly contributes to the efficiency and accuracy of restaurant operations, insights from the study by Nozawa et al. (2022) underscore the difference in customer acceptance across different restaurant types. Specifically, their findings reveal that the introduction of AI-prepared food in luxury establishments may result in negative consumer evaluations. It is emphasized that maintaining a sense of humanity or homemade appeal in the cooking process may be important for the favorable assessment of such dining experiences. However, the study also notes that in the context of non-luxury dining, such as fast food or casual restaurants, there is generally no significant difference in consumer preferences between AI and human kitchen staff.

Conversely, Sung and Jeon (2020) propose an alternative strategy in the context of coffee shop management, asserting that the provision of AI-driven robot services is a crucial component for sustainability. This recommendation gains significance, especially amid the COVID-19 pandemic, where there is an increasing demand for "untact" services – those without direct human contact (Leung & Loo, 2022). Adopting such measures not only addresses health concerns but also aligns with changing consumer preferences, positioning robot services as a strategic response to evolving market dynamics in the coffee shop industry.

According to Zhu and Chang (2020), attributing human characteristics to robotic chefs, known as "robotic chef anthropomorphism", enhances the prediction of food quality by treating the robotic

chefs as human entities. To optimize this effect, designers are encouraged to incorporate specific anthropomorphic features in robotic chefs, including a human-like appearance and actions. The introduction of anthropomorphism in robotic chefs contributes to an increased perception of warmth, thereby mitigating the potential negative impact of substituting human chefs with robotic counterparts. Zhu and Chang's (2020) study also indicate that while warmth perception does not directly influence food quality prediction, it has an indirect positive influence through the mediating factor of competence.

3.3. Leveraging AI to Enhance Service Quality and Dining Experience

In recent years, artificial intelligence (AI) has emerged as a transformative force in in high-contact service industries such as restaurant industry. From streamlining operations to enhancing customer interactions, AI technologies are revolutionizing the way restaurants deliver services. The rise of smart dining, incorporating self-service tech, automated payment systems, and robotic services, has become a trend among consumers, particularly Generation Z (Wong et al., 2022). This review delves into the diverse applications of AI in the restaurant dining experience, uncovering how innovative technologies are reshaping everything from menu personalization to kitchen efficiency, ultimately redefining the landscape of culinary hospitality. This is also urging service operators to meticulously assess the appropriateness of current solutions and navigate the right balance between automation and human interaction (Blöcher & Alt, 2020).

According to Khoa et al. (2022), the effective integration of robotic technology in the hospitality sector depends on managerial ability in overseeing collaboration between humans and robots in the workplace. This involves the management of "cobotic teams" as a crucial focus for hospitality managers in the future. Successful management of these collaborative teams requires simultaneous attention to three key domains: "feeling intelligence, trust, and ethics." Ding (2021) emphasizes the importance for restaurant managers to address employees' work stress resulting from technological changes in the workplace. With the rapid adoption of STARA technologies, particularly in quick-service restaurants with routine-based tasks, employees are becoming more aware of new career opportunities and challenges in the evolving technological work environment. Therefore, restaurants should implement change management strategies that promote staff adaptability, including creating a supportive environment for change and providing training and support to help employees comprehend and embrace these changes (Daradkeh et al., 2023).

Rasheed et al. (2023) emphasizes the significance of AI integration in managing dining experiences and restaurant services. They explore customers' perceptions of the ease of interacting (PEOU – perceived ease of use) with AI-based robots in the hospitality industry, noting that respondents find placing orders through touch screens or voice-activated systems comfortable, attributing ease of handling to robots and associating robotic service with fewer errors, enhancing their pleasure levels. The study also delves into the perceived usefulness (PU) of AI-based robots in the hospitality

industry, revealing that customers consider technology more valuable and helpful than traditional hospitality services (Rasheed et al., 2023). Additionally, Seo & Lee's (2021) research emphasizes the direct impact of PU and the indirect impact of perceived ease of use (PEOU) on revisit intention, emphasizing the need for operators and marketers to enhance consumer PU through benefits like time savings and user-friendly processes. This aligns with Wang & Papastathopoulos's (2023) suggestion to highlight the positive aspects of AI technology in restaurant marketing campaigns.

In the exploration of consumer perceptions, Cui – Zhong (2023) identified that nonhumanoid robots generate higher performance expectations and service failure tolerance, consequently leading to a greater intention to revisit a restaurant. Interestingly, the study found that personalization of robots influences anthropomorphic design's effect on performance expectations, notably when a humanoid robot is given a name, resulting in a significant increase in performance expectations. Lu et al. (2019) discovered that while performance efficacy, intrinsic motivation, facilitating conditions, and emotions positively impact consumers' acceptance of service robots, anthropomorphism acts as a significant obstacle. The study suggests that human appearance, a critical dimension in technology acceptance model (TAM), divergently influences consumer willingness to integrate intelligent versus non-intelligent technologies.

Leung and Loo (2022) propose an AI-enabled interactive order recommender system that leverages historical consumption data for personalized dish recommendations. Additionally, they suggest using smart building technology to adjust restaurant ambience based on factors like cuisine, themes, seasons, and weather during customer wait times. Moreover, Nahar et al. (2023) present an advisory expert system for restaurants focused on promoting community health. By tailoring healthy meals to users' health states and body measures, the system encourages healthy dining outside of homes.

4. Conclusion

This research aimed to explore effective uses of AI-based solutions in diverse restaurant business processes. Using a four-step process, a systematic literature review was conducted on relevant papers published since 2019. The results show a steady increase in publications from 2021, with a focus on various restaurant business processes, particularly customer operations, marketing, and food and beverage preparation, using predominantly empirical approaches.

In restaurant marketing, AI integration proves transformative, enhancing efficiency, customer engagement, and decision-making. The challenge of fake reviews is addressed with improved methods, utilizing supervised machine learning and sentiment-dependent linguistic feature extraction (Hajek & Sahut, 2022; Lee et al., 2022; Adak et al., 2022). AI methodologies for restaurant recommendations based on user preferences showcase AI's potential to influence human decision-making (Keya et al., 2023).

The adoption of AI-based robots in the restaurant industry prompts varying customer acceptance, emphasizing the importance of maintaining a human touch, mainly in luxury dining experiences (Nozawa et al., 2022). For fostering acceptance, however, attention to anthropomorphic design in robotic chefs is crucial (Zhu & Chang 2020). Additionally, positive perceptions of AI and robotics can be encouraged through marketing campaigns highlighting their benefits in improving dining experiences (Wang & Papastathopoulos, 2023). Meanwhile, the growing popularity of untact services highlights the strategic role of AI-driven robot services in aligning with evolving consumer preferences (Sung & Jeon, 2020).

Managers navigating AI-based robot integration emphasize the importance of managing "cobotic teams," considering domains such as feeling intelligence, trust, and ethics (Khoa et al., 2022). Addressing employee stress resulting from technological changes is vital for restaurant managers, necessitating change management strategies for employee adaptation (Ding, 2021).

Restaurants leveraging AI for tailored recommendations and adopting smart dining strategies are positioned for improved customer satisfaction and competitiveness. The development of AI-enabled expert systems for recommending healthy meals aligns with societal health goals and caters to health-conscious customers (Nahar et al., 2023).

Managerial implications include using AI tools to enhance the credibility of customer reviews and addressing concerns related to fake reviews. Managers of luxury dining establishments should carefully consider AI-prepared food introduction, recognizing potential differences in consumer evaluations. Amid health concerns, adopting AI-driven robot services aligns with the demand for untact services and changing consumer preferences.

Studies based on systematic literature reviews serve as a valuable method for synthesizing existing literature within a specific domain; however, they have certain limitations. Despite extensive search efforts, there is a chance for the omission of some relevant studies. This can be attributed to several factors, including limitations in the chosen search terms (keywords), access constraints (databases), or the existence of studies published in languages other than English, not covered within the review's scope.

Acknowledgements

Supported by the ÚNKP-23-3, New National Excellence Program of the Ministry for Culture and Innovation from the source of the National Research, Development and Innovation Fund.

References

Adak, A., Pradhan, B., & Shukla, N. (2022). Sentiment Analysis of Customer Reviews of Food Delivery Services Using Deep Learning and Explainable Artificial Intelligence: Systematic Review. *Foods*, 11(10), 1500. https://doi.org/10.3390/foods11101500

Blöcher, K., & Alt, R. (2020). AI and robotics in the European restaurant sector: Assessing potentials for process innovation in a high-contact service industry. *Electronic Markets*. Springer. https://doi.org/10.1007/s12525-020-00443-2

Collier, D. A. (1983). The service sector revolution: The automation of services. *Long Range Planning*, 16(6), 10–20. https://doi.org/10.1016/0024-6301(83)90002-x

Cui, J., & Zhong, J. (2023). The effect of robot anthropomorphism on revisit intentions after service failure: a moderated serial mediation model. *Asia Pacific Journal of Marketing and Logistics*. https://doi.org/10.1108/apjml-10-2022-0862

Daradkeh, F. M., Hassan, T. H., Palei, T., Helal, M. Y., Mabrouk, S., Saleh, M. I., Salem, A. E., & Elshawarbi, N. N. (2023). Enhancing Digital Presence for Maximizing Customer Value in Fast-Food Restaurants. *Sustainability*, 15(7), 5690. MDPI. https://doi.org/10.3390/su15075690

Ding, L. (2021). Employees' challenge-hindrance appraisals toward STARA awareness and competitive productivity: a micro-level case. *International Journal of Contemporary Hospitality Management*, ahead-of-print(ahead-of-print). https://doi.org/10.1108/ijchm-09-2020-1038

Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: Strengths and Weaknesses. *The FASEB Journal*, 22(2), 338–342. https://doi.org/10.1096/fj.07-9492lsf

Goel, P., Kaushik, N., Sivathanu, B., Pillai, R., & Vikas, J. (2022). Consumers' adoption of artificial intelligence and robotics in hospitality and tourism sector: literature review and future research agenda. *Tourism Review*, ahead-of-print(ahead-of-print). https://doi.org/10.1108/tr-03-2021-0138

Hajek, P., & Sahut, J.-M. (2022). Mining behavioural and sentiment-dependent linguistic patterns from restaurant reviews for fake review detection. *Technological Forecasting and Social Change*, 177, 121532. https://doi.org/10.1016/j.techfore.2022.121532

Keya, A. J., Arpona, S. A., Kabir, M. M. & Mridha, M. F. (2023). Recurrent ALBERT for recommendation: A hybrid architecture for accurate and lightweight restaurant recommendations. *Cognitive Computation and Systems*. https://doi.org/10.1049/ccs2.12090

Khoa, D. T., Gip, H. Q., Guchait, P., & Wang, C.-Y. (2022). Competition or collaboration for human–robot relationship: a critical reflection on future cobotics in hospitality. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/ijchm-04-2022-0434

Lee, M., Kwon, W., & Back, K.-J. (2021). Artificial intelligence for hospitality big data analytics: developing a prediction model of restaurant review helpfulness for customer decision-making. *International Journal of Contemporary Hospitality Management*, ahead-of-print(ahead-of-print). https://doi.org/10.1108/ijchm-06-2020-0587

Lee, M., Song, Y. H., Li, L., Lee, K. Y., & Yang, S.-B. (2022). Detecting fake reviews with supervised machine learning algorithms. *The Service Industries Journal*, 1–21. https://doi.org/10.1080/02642069.2022.2054996

Leung, R., & Loo, P. T. (2020). Co-creating interactive dining experiences via interconnected and interoperable smart technology. *Asian Journal of Technology Innovation*, 1–23. https://doi.org/10.1080/19761597.2020.1822748

Lu, L., Cai, R., & Gursoy, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management*, 80, 36–51. https://doi.org/10.1016/j.ijhm.2019.01.005

Nahar, K.M.O., Banikhalaf, M., AlZobi, F.I. Abual-Rub, M.S., Almomani, A. & Gupta, B. B. (2023). A Rule-Based Expert Advisory System for Restaurants Using Machine Learning and Knowledge-Based Systems Techniques. *International Journal on Semantic Web and Information Systems*, 19(1), 1–25. https://doi.org/10.4018/ijswis.333064

Nozawa, C., Togawa, T., Velasco, C., & Motoki, K. (2021). Consumer responses to the use of artificial intelligence in luxury and non-luxury restaurants. *Food Quality and Preference*, 104436. https://doi.org/10.1016/j.foodqual.2021.104436

Oracle. (2019). Restaurant 2025: Emerging technologies destined to reshape our business. Retrieved from https://www.oracle.com/webfolder/s/delivery_production /docs/FY16h1/doc36/Restaurant-2025-Oracle-Hospitality.pdf (last retrieved: December 5, 2023)

Pereira, L., Aguiar, C., & Fábio Perdigão Vasconcelos. (2021). FIKWaste: A Waste Generation Dataset from Three Restaurant Kitchens in Portugal. *Data*, 6(3), 25–25. https://doi.org/10.3390/data6030025

Rachão, S., Breda, Z., Fernandes, C., & Joukes, V. (2019). Food tourism and regional development: A systematic literature review. *European Journal of Tourism Research*, 21, 33–49. https://doi.org/10.54055/ejtr.v21i.357

Rasheed, H. M. W., He, Y., Khizar, H. M. U., & Abbas, H. S. M. (2023). Exploring Consumer-Robot interaction in the hospitality sector: Unpacking the reasons for adoption (or resistance) to artificial intelligence. *Technological Forecasting and Social Change*, 192, 122555. https://doi.org/10.1016/j.techfore.2023.122555

Seo, K. H., & Lee, J. H. (2021). The Emergence of Service Robots at Restaurants: Integrating Trust, Perceived Risk, and Satisfaction. *Sustainability*, 13(8), 4431. https://doi.org/10.3390/su13084431

Sung, H. J., & Jeon, H. M. (2020). Untact: Customer's Acceptance Intention toward Robot Barista in Coffee Shop. *Sustainability*, 12(20), 8598. https://doi.org/10.3390/su12208598

Wang, Y., & A. Papastathopoulos. (2023). Cross-segment validation of customer support for AI-based service robots at luxury, fine-dining, casual, and quick-service restaurants. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/ijchm-11-2022-1448

Wanyama, S. B., McQuaid, R. W., & Kittler, M. (2021). Where you search determines what you find: the effects of bibliographic databases on systematic reviews. *International Journal of Social Research Methodology*, 25(3), 1–13. https://doi.org/10.1080/13645579.2021.1892378

Wong, I. A., Huang, J., Lin, Z. (CJ), & Jiao, H. (2022). Smart dining, smart restaurant, and smart service quality (SSQ). *International Journal of Contemporary Hospitality Management*, 34(6). https://doi.org/10.1108/ijchm-10-2021-1207

Zhu, D. H., & Chang, Y. P. (2020). Robot with humanoid hands cooks food better? *International Journal of Contemporary Hospitality Management*, 32(3), 1367–1383. https://doi.org/10.1108/ijchm-10-2019-0904