



AI-Driven Career Readiness: Exploring the Challenges Faced by Hotel Management Graduates in the Digital Hospitality Era

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ABSTRACT

The swift development of the Artificial Intelligence (AI) is redefining the hospitality sector by altering the functioning of a hotel, its customer care, income administration, advertising and human resources policy. The capabilities anticipated of professionals in the hospitality industry have changed dramatically due to AI-based applications like chatbots, service robots, predictive analytics, smart property management systems, facial recognition, and automated guest services. As a result, graduates in hotel management are finding themselves more and more to be equipped with technical skills, digital literacy, analytical skills, flexibility, and interpersonal skills in order to be competitive in the work place dominated by AI. Although, the current literature suggests that even after graduates have completed their courses and training programs, numerous graduates face significant challenges in career readiness because of the lack of exposure to AI technologies in academic programs, lack of curriculum / industry fit, lack of digital skills training and lack of experiential learning opportunities. The main obstacles are poor AI literacy, low levels of digital competency, poor collaboration in the industry, competition among faculty, and technological displacement concerns. The conclusion of the review offers strategic suggestions on curriculum redesign, experience learning, faculty development and enhanced collaboration between the institutions and the hospitality industry as a means of enhancing graduate employability in the digitalized hospitality field.



Introduction

The hospitality sector underwent a massive digital transformation in the last ten years due to hastened development of Artificial Intelligence (AI), big data analytics, cloud computing, the Internet of Things (IoT), robotics, and automation tools. Hotels worldwide are increasingly adopting AI-enabled applications in their day-to-day operations to improve the quality of their services, to promote operational efficiency, lower expenses, and to create personalized experiences to their guests. Intelligent reservations engines, chatbots, facial recognition check-in services, intelligent concierge, facial recognition, maintenance, automated revenues management, smart housekeeping, and m-chatbots, powered by AI have become a part and parcel of the hotel management of this era. The innovations are reshaping the hospitality practices traditionally and developing new demands of skills and competence that hospitality professionals need to possess.

Contrary to earlier technological changes, which mainly centered on automation of repetitive processes, AI has brought into the picture decision-support systems that are intelligent, can make predictions based on large data volumes, optimise pricing plans and aid decision making processes among managers. As a result, the workforce in the hospitality industry will cease to be only operationally and customer-facing competency holders but will also undergo a shift to demonstrate digital literacy, data decoding proficiencies, technological flexibility, and provide effective cooperation with AI-enabled systems. This has radically altered the idea of graduates entering the hospitality industry being career ready.

Career readiness is the ability to acquire knowledge, skills, attitudes and professional competencies that allow graduates to successfully leave the world of higher education and enter into the workplace. In hospitality education, career preparedness has been traditionally oriented towards communication, customer service, teamwork, leadership, problem-solving, and operational expertise. Nonetheless, with the advent of AI, the concept has now gone to encompass technological proficiency, digital resilience, lifelong learning, ethical cognisance, and innovation skills. Graduates are also being expected to accommodate the changing technology without losing the human-friendly services values, which make the hospitality industry unique.



The COVID-19 crisis also stimulated the rise of AI in the hospitality organisations. Hotel owners became more willing to invest in contactless technologies, self-service kiosks, electronic payments, online apps, cleaning robots, and artificial intelligence-based customer support since hotels had to minimize physical contact, raise the level of hygiene, and optimise the performance of their organizations. Such changes have permanently transformed the employment landscape in the hospitality industry due to a surge in the need to acquire graduates with hospitality-related expertise that are coupled with digital skills. Consequently, employers are currently focusing on potential employees who have the capacity to perform in technology-boosted settings and are able to exhibit flexibility and life-long learning abilities.

Regardless of these changes, several researches have indicated that hospitality graduates still face significant challenges in living up to the expectations of the industry. The number of challenges that are found to be most common is the constant discrepancy between hospitality course work and the swiftly evolving technological demands of the hotel sector. Most learning institutions still pay more attention to the old forms of operation and offer minimal exposure to students to practically use AIs-enhanced hospitality technologies. Therefore, the newly graduated tend to be unprepared to learn to operate digital hotel management systems, AI-assisted decision-making applications, customer relationship management systems, or data analytics applications that continue to gain momentum in the modern hotel business.

The other key challenge is related to the digital competency gap in hospitality students. Although most students are accustomed to generic digital technologies, they often lack the specialized information that has to do with the use of AI in hospitality. Some of the competencies that are too advanced in many hospitality education programmes include understanding algorithmic decision-making, managing AI-supported revenue systems, interpreting predictive analytics, and implementation of smart property management systems. Moreover, the lack of equal access to technological devices in educational institutions is also a contributing factor to differences in the readiness of graduates, especially in the developing world where the investment in AI-oriented learning infrastructure is not a priority.



Faculty preparedness is another significant course of driver of career readiness through AI. To introduce AI in the most successful way possible in the context of hospitality university education, teachers must have both teaching and technology skills. Nevertheless, some studies also suggest that not all hospitality educators are well-versed in using AI applications, and that most of them have difficulties with integrating newer technologies in teaching and learning processes. This scenario limits the chances students have to gain applied AI skills and innovation in curriculum.

Besides technical issues, graduates need to cope with ethical and psychological problems linked to the adoption of AI. The issues relating to job displacement, automation, data privacy, algorithmic bias, and evolving professional selves affect the way graduates perceive career opportunities in AI-enhanced hospitality settings. Resistance and anxiety about technology will further decrease the confidence of the graduates towards the adoption of intelligent system in the organisation. In turn, career readiness can be considered a multidimensional concept with technical level as only one of its aspects, including the elements of adaptability, resilience, ethicism, critical thinking, and lifelong learning.

The expanding research on AI integration into the hospitality sector, hospitality management education, and graduate employability show rising academic curiosity in comprehending the effects of digital change on workforce readiness. Nevertheless, the extant research is not cohesive as it may tend to tackle specific issues including AI application, educational technology, digital skills, or employee abilities. Very little attention has been paid to synthesising this evidence specifically regarding the view of graduates of hotel management and their readiness towards AI-driven careers. A thorough overview is thus needed to summarize the existing knowledge, specify the issues that manifest themselves regularly, define the research gaps, and make strategic suggestions to the educator, policymaker, and hospitality organisations.



Literature Review

Digital Transformation and the use of Artificial Intelligence in the Hospitality Industry.

Artificial Intelligence (AI) has become one of the most disruptive technologies within the hospitality sector, fundamentally reshaping the functioning of hotels, their communication with guests, as well as the internal processes. The hotel operations were traditionally based more on the human factor, and decision making. Nonetheless, new technologies have made the process of AI-enabling system adoption faster in recent times in the form of intelligent reservation systems, chatbots, facial recognition, predictive analytics, robots, smart room technologies, and automated revenue management systems. These technologies have streamlined operations, minimized service delivery time, increased personalization, and assisted with making decisions based on data within all departments of hotels (Kong et al., 2023). There is growing recognition that AI applications are strategic resources that can optimize operational performance and customer experience and revolutionize models of service delivery.

Application of AI has further penetrated in front-office and housekeeping, food and beverage, marketing, customer relations management and human resource management. Predictive analytics assisted by AI allows hotels to predict demand and improve cost control and marketing campaigns in accordance with customer demand. Equally, robotic technologies would facilitate room service, cleaning, concierge services, such that the employees attend to the high-value customers. With AI progressively integrated in routine tasks of hotels, employees will have to partner with intelligent systems in their daily work instead of executing manual procedures. The change has shifted the competency of the hospitality workforce from the old operational skills to digital literate, thinking, flexible in their use of technologies, and lifelong learning (Ivanov and Webster, 2019; Kong et al., 2023).

Boosted rivalry in the hospitality industry has been caused by the high rate of digital revolution. Hotel companies that have implemented AI technologies have shown increases in service both in quality and efficiency, and it has led to increased customer satisfaction, putting pressure on hospitality organization to hire graduates who are able to work in technology-intensive settings.



As a result, AI has emerged as an organizational competitiveness strategy, affecting recruitment, and future career expectations of hospitality graduates (Kong et al., 2023).

Hospitality Education Career Readiness.

Career readiness is defined as the degree to which graduates have knowledge, technical skills, professional attitudes as well as transferable skills to be clinically employed. Career readiness as a part of hospitality education is traditionally more focused on customer service, communication, collaborative work, leadership, problem-solving, knowledge of operations, and professional ethics. The advent of AI has greatly broadened the concept, though, with the introduction of digital capabilities, technological flexibility, creativity, and fact-driven decision-making (Nguyen et al., 2023).

Recent researches reveal that employers are placing growing emphasis on graduates with unique abilities in digital capabilities alongside their hospitality skills. Career preparedness would not be judged based on the academic score or the technical aspects of the hotel but acclimatize learners to learn new technologies, process digital information, work with AI systems, and adapt to new work conditions. Such ever-changing expectations necessitate the re-design of hospitality education programs that would incorporate AI-related skills and competencies with traditional hospitality management education (Nguyen et al., 2023; Ngoepe and Wakelin-Theron, 2023).

The importance of the industry-academia partnership in producing graduate engineers capable of working in practice is paramount. The studies indicate that internships, work integrated learning, industry certification, and collaborative curriculum development contribute immensely to graduate employability as they expose students to the practical aspects of technological applications. Close associations between hospitality institutions and hotel organizations are helpful in experiential learning which is able to bridge the disproportion between the classroom learning and real expectations of the workplace. However, any discrepancies between teacher views and the competence demands of employers remain issues in equipping graduates with AI-based hospitality jobs (Nguyen et al., 2023).



The AI Skills Hotel managers graduate should have.

The extensive use of AI has capitalized the competency profile that is anticipated of hospitality graduates. Besides traditional hospitality management skills, employers are increasingly demanding graduates to have digital literacy, technological proficiency, analytical thinking, and innovation skills (El Hajal, 2025).

Digital literacy is one of the most essential skills needed in AI-powered work-places. The graduates should be familiar with digital platforms, cloud-based solutions, property management system (PMS), customer relationship management (CRM) software, revenue management software, and AI-based decision-support systems. Knowledge of such technologies helps graduates to play a bigger role in hotel operations and adapt to technological changes.

Literacy in data has also grown to be significant. Artificial intelligence (AI) systems continuously produce great amounts of operational and customer data, which means that hospitality experts need to read reports, analyze performance indicators, determine consumer trends, and justify managerial decisions that are based on evidence. Analytical skills and data interpretation have, in turn, become key employability skills (El Hajal, 2025).

Besides technical skills, employers still stress human abilities that are unique and complement AI technologies. Communication, emotional intelligence, creativity, ethical judgment, leadership, critical thinking, cultural intelligence, and complex problem-solving are also greatly emphasized since the competencies cannot be effectively simulated by intelligent systems. Instead of substituting hospitality workers, AI is transforming the work patterns through the automation of routine activities and augmenting the strategic, interpersonal, and customer-centered skills (El Hajal, 2025).

Difficulties Hotel Management Graduates Will encounter in the AI Age.

Although the level of awareness about AI has grown, hospitality graduates still face various challenges at the level of joining digitally transformed workplaces. The last phenomenon is the longstanding incompatibility between the education curriculum taught in the hospitality sector in



relation to what the industry requires. Some of the institutions are still focusing on traditional hotel practices and drawing little focus to the application of AI, predictive analytics, intelligent hotel management systems, and digital business strategies. As a result, students are oftentimes not exposed to currently existing technologies in modern hotels (Hewitt and Sao Joao, 2023).

The other important issue is the skills gap on the digital front. Despite the overall understanding of basic means of technology, many students lack the experience of working with AI-based solutions specific to the realm of hospitality. Practical skills that relate to AI-aided revenue management, predictive analytics, intelligent systems that can serve customers, chatbot management, and automated operational platforms are not well developed. This disconnect lowers the sense of confidence among graduates and constrains their capabilities in their initial employment phases (Ngoepe & Wakelin-Theron, 2023).

Little experiential education is another factor that makes graduates less prepared. Practical internships are still among the most efficient tools of gaining industry-specific skill sets, but since numerous hospitality students become a placement in organizations that do not implement AI extensively or are simply subjected to daily company operations but not digital innovation. As a result, graduates tend to graduate without any experience in working with AI-enforced technologies in practice in the hotel setting (Nguyen et al., 2023).

Readiness in faculty also has an impact on graduate career readiness. The effectiveness of AI implementation will be contingent on a teacher with an adequate level of technological literacy to restructure the curriculum, implement new methods of teaching and to familiarize the students with new industry trends. Nonetheless, a higher number of faculty still face challenges in adopting AI in hospitality education because of a lack of training, institutional backing, and fast-evolving technological advancements. All these issues limit student access to AI-related skills in their academic learning period (Goh et al., 2025).

Ethical and psychological issues make the process of graduate-level entry into AI-enabled employment more complex. The growing automation in the hospitality services has created anxiety in the job security, professional identity, and future careers. The anxiety of students towards technological displacement and the fear that smart systems could be the cause of loss of



jobs in the conventional hospitality professions are expressed by many. Moreover, because of the varying ethical challenges associated with algorithmic prejudice, information protection and security, responsibility, and ethical usage of AI, graduates must include normative reasoning to technical talent (Goh et al., 2025).

Plans to improve AI-based Career Preparation.

It is consistently implied in the literature that enhancing AI-driven career readiness necessitates a conjunct of work across educational entities, hospitality companies, policymakers, and technology vendors. Curriculum redesign has often been cited as the most significant measure. AI ideas cannot be implemented as part of the occasional elective courses in hospitality programs; instead, they ought to be embedded within the essential course units. Artificial intelligence uses and applications in the hospitality industry, automation, hospitality digital marketing, cybersecurity and responsible AI, among others, must be introduced as part of learning in hospitals (El Hajal, 2025).

Industry partnerships, internships, simulation laboratories and live industry projects must also be established to enhance experiential learning. Working in AI-based hotel settings allows students to gain practical skills and gain self-confidence in the use of digital technologies in the workplace. Graduate employability can also be supported by industry qualifications and technology-powered learning systems which gives accepted evidence of digital competence (Nguyen et al., 2023).

Faculty development is also important. Colleges need to allocate resources towards ongoing professional growth opportunities where teachers can keep up with the latest AI-based technologies and new pedagogical skills. Learners with AI knowledge can more effectively design learning experiences that are relevant and mentor students in digitally transformed learning contexts (Goh et al., 2025).



Research Methodology

This research uses a systematic literature review (SLR) in which secondary data is utilized in the analysis of how AI-led career readiness operates in hotel management graduates. Appropriate peer-reviewed publications of the years 2020 through 2026 were retrieved in databases like Scopus, Web of Science, ScienceDirect, Emerald Insight, SpringerLink, Taylor and Francis, and Google Scholar.

Research Objectives

1. To investigate how Artificial Intelligence (AI) can be used to improve career readiness of hotel management graduates in the digital hospitality sector.
2. To define and generalize the most acute issues of hotel management graduates in building the required AI-related competencies and employability skills basing on the literature on the topic.

Results and Findings

Objective 1: To explore the importance of Artificial Intelligence (AI) in improving career preparedness among graduates at hotel management in the digital hospitality industry.

According to the reviewed literature, Artificial Intelligence (AI) has had a substantial impact on the hospitality industry by reinventing the expectations and competence needs of the workforce. Hotels are accelerating the use of AI-powered technologies, including chatbots, service robots, predictive analytics, customer relationship management (CRM) systems, smart property management systems (PMS), thus driving the demand of digitally competent hospitality employees (Kong et al., 2023). The recent research shows that career readiness does not only focus on operating and customer service skills anymore but also digital literacy, awareness of AI, analytic thinking, flexibility, and the capacity to work with intelligent technologies.

Moreover, newly graduated students with AI-related skills are more employable and have an increased number of opportunities to apply their knowledge and adapt to the emerging needs and opportunities presented by tech-driven hospitality companies (El Hajal, 2024).



Another focus of the literature is that AI does not displace employees, but assists in automating routine operations and leaves the task of personalized experiences of guests and strategic thinking to hospitality professionals.

Objective 2: To reveal and summarize the most critical issues that the graduates of hotel management work with in current training to train their AI-related competencies and employability abilities.

Some of the barriers to the AI-driven career readiness of the hotel management graduates as determined in the literature include: The deficit in the alignment of hospitality curriculums with the technological demands of the hotel sector and the following lack of exposure to AI applications and digital technologies within the framework of academic training is considered to be one of the most common challenges reported (Ngoepe & Wakelin-Theron, 2023). A second significant obstacle is the digital skills gap, in which graduates have a basic level of computer literacy, but they do not have hands-on training in industry-specific expertise like Opera PMS, Fidelio, CRM platforms, and revenue management systems, as well as AI-enhanced hotel applications (Dimitriou et al., 2025). As well, there are not many opportunities to do internships, especially in AI-enabled hotels, lack of faculty knowledge about the new technologies, and insufficient institutional infrastructure makes the opportunities of applying practical digital skills to students who are studying it. Considerations regarding technology anxiety, job displacement, and ethical implications of AI adoption are also identified in the reviewed studies and not only affect the confidence and career readiness of graduates in the digital hospitality setting (Bakir et al., 2025).

Discussion

The analyzed articles all point to AI technologies like chatbots, service robots, predictive analytics, and smart property management systems as redefining the skills and knowledge hotel management graduates should have.



Although all the conventional skills of the hospitality industry, including communication skills, customer service skills, and teamwork skills, are all the more important, employers are starting to demand graduates to be digitally literate, AI-aware, data analysts, and able to collaborate with intelligent solutions (Kong et al., 2023; El Hajal, 2024). These conclusions imply that the professional competence needed in a digital age of hospitality industry is a harmonious set of technical and interpersonal abilities.

The examination also indicates a continuing disparity of hospitality training and expectation by the industry. Most institutions of hospitality still rely on traditional training of operational tasks with little exposure to AI and other digital technologies. Such a curriculum industry gap lowers the readiness of graduates to AI-enablers career opportunities and decreases their employability (Ngoepe and Wakelin-Theron, 2023). Dimitriou et al. (2025) made similar observations, suggesting that hospitality graduates are frequently digitally literate with little to no experience of industry-specific AI (e.g. property management systems, revenue management packages, and customer relationship management systems).

A second significant conclusion is that AI can be considered as an enabling technology, and not a substitute of the hospitality professionals. The literature is clear that despite the automation of repetitive and routine tasks by AI, human skills like emotional intelligence, creativity, empathy, ethical judgment, leadership, and problem-solving have not been substituted and will continue to play an essential role in the provision of an exemplary guest experience (Bakir et al., 2025). Hospitality education must thus be oriented to create hybrid skills that combine technological knowledge and interpersonal/ management skills.

Some obstacles to AI-based career readiness are also outlined in the review, such as insufficient faculty knowledge, inadequate technology, industry partnerships, and opportunities to engage in experiential learning. These problems highlight the necessity of modernizing the curricula, training employees to acquire advanced skills, implementing AI-based instructional strategies, and improving collaborations between educational institutions and hospitality companies. According to AI-oriented internship programs, simulation laboratories, professional qualifications, and online learning constitute collaborative efforts that can greatly improve



graduate employability and establish hospitality education as up to date with technological innovations.

In general, the results suggest that innovative hotel management graduates will be able to help the hotel industry to become more competitive not only because they know the functioning of hospitality but also can adjust to the quickly changing digital technologies. Schools, players in the hospitality industry and policymakers should collaborate to develop an AI prepared workforce that can achieve success in the digital economy.

Conclusion

Artificial Intelligence is essentially transforming the hospitality sector by changing how it operates, service delivery, and staff competency needs. This literature review, being systematic, discussed how AI can be used to improve career readiness and the key issues associated with the acquisition of AI-related competencies by graduates of hotel management programs. The results show that AI has broadened the concept of career readiness to encompass digital literacy, technological flexibility, critical thinking, and lifelong learning other than traditional hospitality skills. Meanwhile, there are still critical issues such as the incompatibility of the curriculum with the industry, less practical introduction to AI technologies, digital skills shortage, a lack of faculty readiness, and anxiety about technological change.

The review notes that the hospitality education institutions should immediately redesign curricula by inculcating the concept of AI, digital tools, and experience learning opportunities on academic programs. Enhancing partnerships between higher education institutions and hospitality sectors, faculty training, and encouraging technology-oriented training in the hospitality sector are likely to equip graduates with skills to meet the demands of technologically advanced workplaces. Moreover, the human-focused skills (including communication, empathy, creativity and making ethical decisions) and AI-related skills should be developed by future professionals in the hospitality industry, which will remain crucial in providing a high-quality guest experience.



The review makes a contribution to the present body of literature by summarizing recent findings related to AI-driven career readiness and offering some practical implications of these findings to educators, the industry practitioners, and policymakers. Future studies need to develop AI competency frameworks, analyze the efficacy of AI-enhanced hospitality-related curriculums, and compare the outcomes of various countries and learning systems to make a further contribution to improving graduate employability in the new digital hospitality environment.

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