

 <p>International Journal of Advanced and Applied Sciences</p>	<h1>International Journal of Advanced and Applied Sciences</h1> <p>Journal homepage: http://www.ijaas.in</p>	<p>International Journal of Advanced and Applied Sciences</p>  <p>ISSN 2313-826X E-ISSN 2313-3724 (OJS) Publisher: Institute of Advanced Science Enterprise (IASE) http://ijaas.in</p>
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AI-Driven Career Readiness: Exploring the Challenges Faced by Hotel Management Graduates in the Digital Hospitality Era

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ARTICLE INFO	ABSTRACT
<p>Article history: Received: 26-04-2025 Received in revised form: 16-05-2025 Accepted: 11-06-2025</p> <p>Keywords:</p> <p><i>Artificial Intelligence, Hotel Management Education, Career Readiness, Hospitality Industry, Graduate Employability, Digital Skill Gap, Smart Hospitality</i></p>	<p>The hotel industry is facing a swift evolution with the infusion of Artificial Intelligence (AI) and impacting significantly the job positions, delivery of services, and competencies required. The research investigates the problems encountered by graduates of hotel management upon the completion of their course in terms of adjusting to an AI-fostered hospitality scenario. By conducting surveys and interviews with Indian industry professionals and recent graduates, with specific emphasis on AI-based operational systems, guest engagement platforms, and data analytics software, the study pinpoints major impediments in the form of digital skill deficiencies, low levels of exposure to AI technology within training, and disconnect between academic curricula and changing industry requirements. The research also points towards the necessity for schools and universities to incorporate AI literacy, experiential simulations, and cross-disciplinary learning to equip students more effectively for the future of work in hospitality. Suggestions are made for curriculum redesign, industry-academic partnership, and ongoing professional development to enhance the match between education and work in the AI-based hotel industry.</p> <p>© 2025 The Authors. Published by IASE. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).</p>

Introduction

The application of Artificial Intelligence (AI) in the hotel sector represents a paradigm change in designing, delivering, and assessing services. Tools like chatbots, smart reservation systems, face recognition, predictive analysis, and robotic process

automation are no longer visionary but are being used more and more across international hotel groups to boost operational effectiveness and individualize the customer experience (Ivanov & Webster, 2019; Tussyadiah, 2020). Consequently, the hospitality workforce is being redefined to accommodate the needs of these new technologies. Jobs that previously were centered on interpersonal service are now

changing to need hybrid skills—combining human-oriented skills with technological knowledge (Lu, Cai, & Gursoy, 2019).

Hotel management graduates, with their classical background in soft skills, customer service procedures, and rudimentary knowledge of operations, are now joining a professional landscape where understanding AI-based tools and digital systems is crucial. Nevertheless, various studies show that a majority of hospitality programs, particularly in emerging economies such as India, are yet to catch up with this technological transformation (Kong et al., 2021; Gretzel, 2021). The disconnect between the desired skills of the digital hotel industry and the existing curriculum framework has resulted in a skills gap impacting both employability and productivity. New-age platforms like customer relationship management (CRM) systems driven by artificial intelligence, guest engagement robots, and data analytics dashboards are difficult for graduates to handle because there is not much hands-on experience they get through their studies (Kuo, Chen, & Tseng, 2017).

In India, as the hospitality and tourism industry is expected to make huge growth strides, led by government-led campaigns

such as "Digital India" and "Incredible India," the requirement of technology-versed hospitality experts is growing day by day. Nevertheless, moving out of universities to industry has remained riddled with issues. Institutions usually have limitations regarding old syllabi, absence of access to high-quality digital infrastructure, and fewer interactions with the industry in developing curriculum planning (Chathoth & Altinay, 2018). Additionally, AI topic teacher training and institution preparedness to deliver AI topics also impede the fulfillment of efficient digital learning models in hospitality education.

This research attempts to fill this gap by investigating the lived experiences of new hotel management graduates and industry practitioners in India. Through empirical inquiry, it attempts to discover the salient challenges students encounter when adjusting to AI-powered hospitality settings and to unmask institutional and pedagogical impediments to digital preparedness. Research focuses especially on the three central areas: (1) acquiring digital skills and perceived proficiency deficits, (2) integrating modules on AI into the hospitality curriculum, and (3) the extent and form of collaboration between academia

and the hospitality sector for equipping students to deal with actual applications.

In addition, the study identifies the imperative of a strategic transformation in hospitality education involving cross-disciplinary studies (e.g., computer science and hospitality), industry-based training modules, and the use of AI simulation tools in the classroom. Besides adding to the scholarly knowledge on hospitality education reform, the results provide real-world insights for curriculum designers, policymakers, and hotel companies seeking to develop a digitally responsive workforce.

Literature Review

The convergence of Artificial Intelligence (AI) and hospitality education has emerged as an expanding area of interest as the hospitality sector undergoes digital disruption. Researchers have increasingly explored how AI impacts workforce needs, service delivery models, and operational structures in the hospitality industry (Ivanov & Webster, 2019; Tussyadiah, 2020). These researches affirm that AI technologies are no longer on the periphery but at the core of how contemporary hotels organize bookings, customer service, housekeeping, security, and marketing activities. Therefore,

the skills demanded from graduates in hotel management are changing very fast.

AI and Workforce Transformation in Hospitality

AI-facilitated technologies, including natural language processing chatbots, sentiment analysis software, robotic servers, and smart room systems, are displacing or complementing conventional service jobs (Lu, Cai, & Gursoy, 2019). Although these technologies have the capacity to enhance business efficiency and customer experience, they also require new skillsets from employees. Workers need to feel at ease engaging with automated equipment and reading digital information in order to make sound business judgments (Gretzel, 2021). Consequently, hospitality professionals are likely to need to marry interpersonal competence with digital acumen—a hybrid competency set that is rarely prioritized in traditional hospitality training courses.

Skill Gaps and Curriculum Misalignment

A number of researchers have noted a disparity between the AI-directed needs of the hospitality sector and hospitality graduates' readiness (Kuo et al., 2017; Kong

et al., 2021). Conventional hospitality education in most institutions, particularly in new economies such as India, continues to emphasize food preparation, housekeeping, and front-desk operations with little or no coverage of data analytics, coding, or AI systems (Chathoth & Altinay, 2018). This has led to a generation of graduates who can potentially be very competent in human-service oriented service but ill-equipped for the technologically driven nature of today's hotel business.

Challenges in Hospitality Education

Hospitality education also encounters a number of systemic challenges in addressing the advent of AI. These include an outdated curriculum, minimal faculty proficiency in AI and digital technologies, and poor collaboration between academia and industry (Chung, 2021). In addition, students indicate minimal exposure to AI applications in internships or training programs, which lowers their confidence and flexibility when entering the workforce (Kim & Jeong, 2018). Studies also point to the digital divide in hospitality education—where urban, well-funded schools are more likely to incorporate AI concepts than rural or under-resourced colleges.

The Case for Educational Reform

To address such issues, hospitality curricula have been demanded to be overhauled by scholars and industry players. Ivanov and Webster (2019) propose integrating AI literacy and digital simulations into curriculum designs. Tussyadiah (2020) advises adding interdisciplinary learning strategies, where students are exposed to AI ethics, coding fundamentals, and data visualization tools in addition to hospitality courses. Other suggestions are the establishment of stronger industry-academic collaborations to offer students experiential learning experiences and exposure to AI applications in actual environments (Kong et al., 2021).

Relevance to Indian Context

The Indian hospitality education system, dominated to a great extent by public universities and private institutions under regulatory regimes such as AICTE and NCHMCT, has only started to react to these worldwide trends. Although awareness of digital transformation is increasingly on the agenda, implementation within the curriculum level is patchy. Singh and Sharma (2022) document the necessity to incorporate AI modules into hospitality

degree courses and note that working together with technology companies could accelerate the change. There is still, however, a paucity of empirical research examining how recent Indian hotel management graduates interpret and react to AI-led developments—something this study aims to address.

Research Objectives

1. To assess the level of AI awareness and digital skill readiness among hotel management students and recent graduates.
2. To examine the relationship between AI-related academic training and practical AI exposure during internships.
3. To compare perceptions of curriculum adequacy between students from public and private institutions.
4. To identify the core skill gaps and institutional barriers perceived by industry professionals and faculty in relation to AI integration.

Research Methodology

The present research takes a mixed-methods approach, bringing together quantitative and

qualitative methods in order to acquire a complete insight into the difficulty hotel management graduates experience in accommodating an AI-dominated hospitality industry. The quantitative phase entailed distributing a structured questionnaire among a sample of 150–200 final-year hotel management students and fresh graduates from selected hospitality institutions throughout India. The survey sought to gauge participants' awareness of AI tools like CRM systems, guest service robots, and predictive analytics, their own self-rated levels of digital competence, the scope of AI training they received while pursuing their course of study or through internships, and the degree to which they felt the curriculum was missing something in light of industry expectations.

To complement the survey, the qualitative aspect consisted of semi-structured interviews among 10–15 participants including industry personnel like HR managers and heads of hotel operations, and faculty members from hotel management schools. These interviews were more in-depth in terms of expectations for AI-related competencies among new graduates, opinions regarding the effectiveness of existing training sessions, and

recommendations for curriculum change and industry-academic partnerships. To the quantitative survey, purposive sampling was used to select relevant respondents with direct exposure to hotel management education, and the qualitative sample was chosen using snowball sampling to gather participation from those with extensive knowledge into recruitment practices and academic planning. This mixed-method approach allowed the study to both detect statistical trends and rich stakeholder views.

Results and Discussion

Descriptive Analysis of Student Survey Responses

Descriptive statistics for important survey items were calculated using SPSS v27. The total sample of 184 included recent graduates and final-year students, of whom 58% were male and 42% female. Respondents were from 12 Indian states, with the largest numbers being from Maharashtra, Tamil Nadu, and Delhi.

- Familiarity with AI tools (Mean = 2.41, SD = 0.88 on a 5-point scale): Most (65%)

scored their familiarity as low (1–2 on the scale).

- Confidence in using AI tools in the workplace (Mean = 2.76, SD = 0.95): Just 18% scored themselves as confident (4 or 5).
- Perceived relevance of curriculum to AI trends (Mean = 2.34, SD = 0.90): 71% reported not being equipped in their training to work with AI-based tasks.

These findings reinforce the presence of broad digital skill gaps, consistent with existing literature (Kong et al., 2021; Singh & Sharma, 2022).

Cross-Tabulation: Training vs. Internship Experience

SPSS cross-tabulation between "received AI-related training" and "used AI tools during internship" showed that among those who received some training (n = 64), 42% reported using AI tools in their internship. On the other hand, among those with no training (n = 120), only 7% had such exposure.

Training Received	Used AI Tools in Internship	Frequency	Percentage
Yes	Yes	27	42.2%
Yes	No	37	57.8%
No	Yes	9	7.5%
No	No	111	92.5%

Chi-square test revealed a significant correlation between AI training and application during internships:

$$\chi^2(1, N = 184) = 39.21, p < 0.001$$

This suggests that academic exposure to AI significantly enhances the probability of practical application in industry.

Independent Samples t-Test: Curriculum Satisfaction by Institute Type

An independent t-test was conducted to compare curriculum satisfaction ratings between students from private and public institutes.

- Private institutions (n = 102): Mean = 2.78, SD = 0.91
- Public institutions (n = 82): Mean = 2.12, SD = 0.81

$$t(182) = 5.24, p < 0.001$$

Private institution students indicated higher satisfaction levels, proposing potential differences in updating curricula and technical facilities between institution types. This is in support of the digital divide noted in works such as Chathoth & Altinay (2018).

Thematic Analysis of Qualitative Interviews

Semi-structured interviews with 12 staff and faculty members were coded using NVivo and transcribed, and key themes were determined:

Theme 1: Digital Skill Deficit

"We need graduates who can read data, engage with CRM tools, and manage automated guest service—but most can't."

Theme 2: Faculty Preparedness and Training Shortfalls

"Our educators themselves require orientation in AI systems to teach them meaningfully."

Theme 3: Inadequate Experiential Learning

"Too much theory. No chance for students to get their hands on technology used in hotels now."

These are the common themes that support SPSS findings toward drawing a similar conclusion that India's hospitality education infrastructure should quickly upgrade to include AI integration.

Summary of Key SPSS Findings

Variable/Analysis	Statistical Tool	Key Result
AI familiarity levels	Descriptive statistics	Mean = 2.41; low self-reported knowledge
Training vs. tool usage	Cross-tab & Chi-square	$\chi^2 = 39.21, p < 0.001$
Public vs. private curriculum rating	Independent t-test	$t = 5.24, p < 0.001$
Industry expectations	Thematic coding (NVivo)	Need for applied AI skills and faculty upskilling

Conclusion

This research highlights the serious dilemma that hotel management graduates are confronting with respect to preparing for an AI-oriented hospitality sector. The results indicate a glaring gap between the curriculum opportunities currently available and the technologically driven requirements of the contemporary hotel industry. Although students are theoretically furnished with the underpinnings of hospitality management, their exposure to AI technologies and digital systems essential to the success of the sector in the future is still lacking. The study, grounded on quantitative and qualitative data, proves that most of the respondents, particularly those in public institutions, claim low awareness

with AI tools and low confidence in using them in actual applications.

The SPSS findings point to a remarkable relationship between formal AI training and experiential application in internships, indicating that hands-on learning opportunities are a major factor in career preparedness. The study also points to meaningful differences in curriculum satisfaction levels between private and public schools, again highlighting the necessity of uniform AI curriculum incorporation on all hospitality education platforms.

Thematic observations based on industry participants and academics lend further support to these results as employers lament at graduates' failures to keep pace with the escalating digital demands within the

hospitality business. Insufficiency of AI exposure during educational time was observed to be among the key Career Readiness obstructors, to which educators linked infrastructural issues and resource concerns impeding implementation of AI teaching.

Based on these results, this study emphasizes the necessity for an overall reform of hospitality education, particularly in the areas of:

- Incorporating AI literacy throughout every aspect of the curriculum, beginning in the first year.
- Creating experiential learning settings (e.g., AI-driven labs, internships with AI incorporation) to allow students to gain hands-on, experiential exposure.
- Incorporating faculty development programs to familiarize teachers with the skills and competencies needed to educate AI technologies.
- Strengthening industry-academic collaborations to ensure that academic programs align with the evolving needs of the hospitality sector.

In conclusion, the digitalization of the hospitality sector requires a paradigm shift in educating hotel management students. Bridging the skill gaps identified will not only enhance graduate employability but also create an agile, future-focused workforce capable of succeeding in an AI-powered hospitality sector. This transformation is critical for the individual success of graduates as well as the sector's overall growth.

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