

Reviewing the digital skills and readiness of hospitality and tourism graduates: a way of success

Worldwide
Hospitality and
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Abstract

Purpose – The purpose of this study is to assess the digital skills and readiness of recent graduates from hospitality and tourism management programmes in Cyprus for job roles in the hotel industry. It seeks to identify gaps in their competencies and provide recommendations for enhancing educational curricula to better align with the evolving demands of the industry.

Design/methodology/approach – The study includes 19 semi-structured interviews with graduates of hospitality and tourism management programmes.

Findings – Recent graduates of hospitality and tourism management programs possess basic digital skills, including knowledge of Microsoft Office (Excel, Word and PowerPoint), email platforms and video conferencing tools (Zoom and Skype). However, there is a significant gap in their practical experience with industry-specific software, such as Opera, Fidelio, Booking.com and Expedia, which are critical for hotel operations. Graduates mentioned that those tools were only briefly covered in their academic programmes, leaving them underprepared for their application in real-world settings. Additionally, graduates expressed a need for more comprehensive training in digital marketing tools, social media management platforms and customer relationship management systems.

Originality/value – This preliminary research aims to give industry stakeholders, including educators, an initial understanding of the importance of digital skills and the readiness of hospitality and tourism graduates in this area. In countries that rely heavily on tourism but face a shortage of skilled employees, it is vital to understand the gap between what students are learning and what the industry actually needs.

Keywords Digital skills readiness, Hospitality and tourism graduates, Digital skills gap, Qualitative research

Paper type Research paper

Introduction

The hospitality and tourism industry is undergoing technological transformations in how its services and products are consumed and delivered (Buhalis *et al.*, 2019). The evolution includes adopting technologies such as online booking systems, virtual tours, robots, personalised experiences, social media advertising, automated check-ins, smart room technologies, Customer Relationship Management (CRM) systems, digital payment solutions, AI chatbots, and data analytics (Buhalis *et al.*, 2024; Ionescu and Sârbu, 2024). Accommodation providers, especially hotels, utilise innovations to enrich the guest experience, optimise operations, and maintain competitiveness in a dynamic market environment (Amoako *et al.*, 2023).

Despite technological advancements, research indicates a significant and urgent digital skills gap among employees entering the hotel sector at various positions, posing immediate challenges for technology integration and quality service delivery (Lubis *et al.*, 2024; Parsons *et al.*, 2023; Christ-Brendemühl, 2022). The rapid pace of technological changes has



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underscored the critical need for professionals to possess significant digital skills in almost all hotel positions, including front desk operations, revenue management, housekeeping, marketing, guest services, and food and beverage management (Carlisle *et al.*, 2023). Consequently, the gap between hospitality and tourism industry demands, digital readiness, and educational outcomes has become a pressing concern (Jackman *et al.*, 2021; Edenheim, 2020; Lugosi and Jameson, 2017).

This paper evaluates the digital skills readiness of recent Bachelor's graduates in hospitality and tourism who have recently entered employment in a hotel. It explores their experiences and perspectives, focusing on how well-prepared they are to meet the digital demands of the hotel sector. Furthermore, the study aims to identify gaps between the digital skills required by the hospitality industry and those possessed by the graduates based on the education received.

The research questions guiding this study are:

- (1) How prepared are recent Bachelor's level hospitality and tourism graduates in terms of digital skills for their hotel roles?
- (2) What are the gaps between the digital skills the hotel sector needs and those taught in hospitality and tourism management curricula?

Literature review

The European Union's (EU) digital policy, which seeks to attain technological readiness, reduce the digital divide, and promote a human-centred digital environment, depends heavily on digital skills (European Union, 2024). According to Boikova *et al.* (2021), advanced digital skills are necessary for driving innovation, economic growth, and competitiveness. Basic digital skills are necessary for participation in the workforce and society (Van Laar *et al.*, 2017). Digital skills have multiple interpretations, with no single universally accepted definition. According to van Laar *et al.* (2017), these skills can be divided into two main types: technical skills, which involve the ability to operate digital technologies, and digital literacy, which emphasises using technologies to process and manage information.

According to Nasution *et al.* (2018), digital readiness is defined as an "inclination and willingness to switch to and adopt digital technology and the readiness to create new innovative opportunities, bringing an individual, organisation, industry, and country to achieve their goals faster and with greater results". As digital technologies rapidly evolve, they impact the labour market, increasing the need for digital readiness, especially in emerging fields like Artificial Intelligence (AI), robotics, quantum technology, and 6G (Li, 2022). The Digital Decade Policy Programme (DDPP) outlines the EU's commitment to enhancing digital skills through vocational training, lifelong learning, and integrating digital competencies across education systems (European Union, 2024), an aim that increases digital readiness. The EU's targets include ensuring that 80% of adults possess basic digital skills and reaching 20 million Information and Communication Technologies (ICT) professionals, focusing on gender balance, by 2030 (European Union, 2024).

Research highlights the importance of digital skills and digital readiness in the hospitality and tourism industry education and emphasises the urgent need to bridge the digital skills gap among employees (Yulia and Irina, 2023; Zaragoza-Sáez *et al.*, 2022; Smith, 2019). The industry struggles with challenges such as insufficient training and difficulties attracting and retaining skilled professionals (Chung and D'Annunzio-Green, 2018). Furthermore, the European tourism industry has been found to exhibit a digital skills gap, notably in areas such as AI, robotics, and Augmented Reality and Virtual Reality (AR/VR) education (Carlisle *et al.*, 2023; Rane *et al.*, 2023; Tomažević *et al.*, 2023). The importance of digital transformation in hospitality cannot be overstated, with basic and advanced digital skills in this area being critical for the future workforce (Brown, 2018). Numerous studies highlight the urgent need for industry stakeholders to reassess the digital skills required for hospitality and tourism

professionals (Chu *et al.*, 2024; Yang *et al.*, 2024; Koc *et al.*, 2023; Tuan, 2021) and close the gap with a quality education system that can take many forms, including online, hybrid, and in-person learning opportunities (Dolasinski and Reynolds, 2023; Hussain *et al.*, 2023; Adeyinka-Ojo *et al.*, 2020).

Furthermore, industry employers have observed that graduates of hospitality and management programs at Bachelor's or Diploma level lack knowledge of crucial areas such as digital marketing, data analytics, and customer relationship management technologies (Minor *et al.*, 2024; Busulwa *et al.*, 2022), reducing their capacity to engage with modern tools and platforms that are useful for the hospitality and tourism industry, and consequently, jeopardising their employability and the future of the businesses (Minor *et al.*, 2024). As a result, educational institutions are called to urgently enhance or redevelop their curricula to include training programs on digital skills (Yulia and Irina, 2023).

The case of Cyprus

Cyprus is a significantly dependent island nation on its hospitality and tourism industry, which constitutes a key pillar of its economy. In 2023, the country experienced a remarkable recovery in its hospitality and tourism industry following the challenges posed by the COVID-19 pandemic, welcoming approximately 4 million tourists (Cyprus Statistical Service, 2023). The recovery highlights tourism's critical role, accounting for around 20% of Cyprus's GDP (European Union, 2023).

To support the vital hospitality and tourism industry, Cyprus offers diverse higher education programs specifically tailored to these fields. Across 18 universities and colleges, students can pursue Bachelor's, Master's, Doctoral degrees, and Diplomas. There are 17 Bachelor's degrees, 8 Master's degrees, and various diploma programs related to hospitality, tourism and associated fields (Cyprus Agency of Quality Assurance and Accreditation in Higher Education, 2024).

According to Zopiatis and Constanti (2007), the hospitality and tourism education industry is well-established in Cyprus, with local institutions catering to both Cypriot and international students. The degrees and diplomas offered are available in either English or Greek, primarily through face-to-face instruction, with some programs also incorporating online components. The duration of the programs varies according to the level of study: Bachelor's degrees three to four years, Master's degrees one to three years, and diploma programs are completed in two years. Public and private universities adhere to the European Credit Transfer and Accumulation System (ECTS). The curriculum for these programs integrates foundational courses in management and business administration with specialised coursework in hospitality and tourism, along with the inclusion of one or two language courses. Most programs also incorporate practical components such as internships, placements, or apprenticeship opportunities to achieve industry employability.

The analysis of the curricula for the programs above, as detailed on the websites of each higher education institution, reveals a limited number of courses specifically focused on digital skills and technologies. For instance, the University of Nicosia's Bachelor's degree includes courses such as "Business Software Applications" and "Technologies for the Social Web". Similarly, the Cyprus University of Technology offers a course titled "E-commerce in Tourism," while the European University features a course on "Social Media and Marketing Communications." UCLan's bachelor's program includes "Marketing and ICT for Visitor Economy Managers". However, colleges' websites identified no relevant courses related to these topics. Furthermore, an examination of the learning outcomes for each program of study indicates that none are specifically aimed at developing digital skills.

Methodology

This study employs a qualitative research approach to explore the perspectives of Bachelor’s hospitality and tourism graduates who have recently started a job in a hotel in Cyprus for at least six months. The decision to utilise a qualitative methodology was driven by the need to gain in-depth insights into the experiences and perceptions of the participants (Merriam and Tisdell, 2015, p. 48) regarding their digital skills readiness and the alignment between their education and industry demands.

The research took place for three months, starting in June 2024 and ending in August 2024. We first identified the relevant degrees and diplomas through the list of all registered institutions from the Cyprus Ministry of Education, Culture, Sport and Youth, and we then visited the website of each institution to identify the relevant programs and categorised them in terms of course structure, curriculum and learning outcomes. Then, we contacted all the institutions by telephone and asked them if we could contact some of their graduates per our participants’ profiles to arrange the interviews with them. The participants came from the following universities and colleges: Cyprus University of Technology, European University of Cyprus, University of Nicosia, UCLan Cyprus and Intercollege.

A total of nineteen (19) graduates who had completed their studies in hospitality and tourism management from the aforementioned universities were selected as participants for this study. The convenience sampling method was chosen as the participants were selected based on their willingness to contribute to the research and interview availability.

The semi-structured interviews were conducted in Greek, the native language of the participants. The interviews lasted between 20 to 30 min and were conducted either in person or via video conferencing (Zoom), depending on the preference and availability of the participants. The interviews were guided by predetermined questions of an interview protocol (Table 1) to obtain responses related to the participants’ digital skills, their experiences during their studies, and their perceptions of the industry’s demands. The interviews were recorded with the consent of the participants and later transcribed verbatim for analysis.

The final interview protocol included the following questions:

Table 1. Interview protocol of the study

A/A	Questions from the interview protocol	Key themes
<i>Section 1: Digital skills preparedness</i>		
1	<i>Educational experience</i>	
1.1	Can you describe the digital skills training you received during your Bachelor’s program?	Curriculum relevance
1.2	Which digital tools and technologies were emphasised in your courses and used during coursework?	Key technologies
2	<i>Initial employment experience</i>	
2.1	Can you describe how prepared you felt in terms of digital skills when you first started working at the hotel?	Self-assessment
2.2	Can you give examples of specific tasks or technologies you felt well-prepared for?	Practical readiness
3	<i>On-the-job learning</i>	
3.1	What digital skills have you had to learn or improve upon since starting your job?	Skill development, learning curve
3.2	How did your initial training help you adapt to the digital demands of your role?	Training effectiveness, adaptation

(continued)

Table 1. Continued

A/A	Questions from the interview protocol	Key themes
<i>Section 2: Gaps between industry needs and educational training</i>		
4	<i>Industry expectations</i>	
4.1	What digital skills and technologies are most frequently used in your current role?	Industry tools
4.2	Are there specific digital competencies that are particularly critical for your job?	Job requirements
5	<i>Skill gaps</i>	
5.1	Were there any digital skills or tools that you encountered on the job which you felt unprepared for?	Unpreparedness
5.2	Can you identify any areas where your education did not adequately prepare you for the digital requirements of your job and how?	Skills mismatch
6	<i>Suggestions for improvement</i>	
6.1	How do you think your academic program could have better prepared you for the digital aspects of your role?	Recommendations
Source(s): Authors' own work (2024)		

The transcribed interviews were analysed using coding and thematic analysis on NVivo and VOSviewer, a method for identifying, analysing, and reporting patterns or themes within the data (Rivas, 2012). Also, the study was pilot-tested in May 2024 and adhered to the ethical guidelines set forth by the participating universities. Informed consent was obtained from all participants before the interviews, and participants were assured of the confidentiality and anonymity of their responses. Also, participants were informed of their right to withdraw from the study at any time without providing a reason. The participants' profiles are presented in Table 2.

Findings

This section presents the findings regarding the digital skills readiness of recent graduates in the tourism and hospitality industry. The profiles of the participants presented in Table 2, who were all recent graduates working in various roles within the industry at either entry, supervisor or managerial level, provide reflections on their experiences and preparedness in digital skills in their positions.

According to Figure 1, the skills frequently mentioned by the graduates are primarily basic digital skills. These include Microsoft Excel, Microsoft Word, Microsoft PowerPoint, SPSS, Galileo, Email (e.g. Outlook, Gmail), Zoom, and Skype, Teams, Google Drive and Google Docs, Prezi, Canva, Opera, Fidelio, Booking.com and Expedia.

Most participants reported good knowledge of basic digital tools, such as the Microsoft Office Suite (Excel, Word, and PowerPoint). However, during their academic education or training, they noted a lack of emphasis on hospitality-specific software, including Opera and Fidelio.

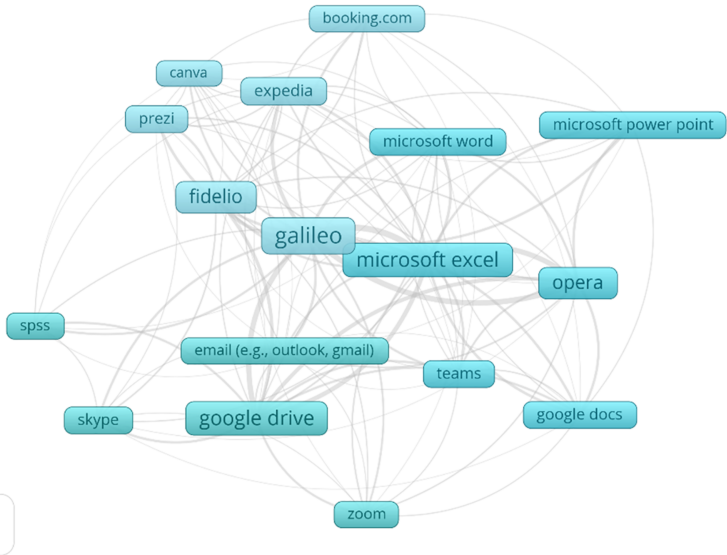
Despite theoretical exposure to these software applications during their studies, most participants expressed a need for additional training to bridge this gap. They highlighted the importance of self-learning and on-the-job training, especially concerning modern technologies such as social media management platforms (e.g. Hootsuite, Canva) and booking systems (e.g. Expedia, Booking.com).

A recurring theme in the discussions was the gap between academic training and the requirements of real-world employment in the hospitality industry. Participants noted that university curricula often prioritised theoretical knowledge over practical and more hands-on training with industry-standard software. Many expressed concerns about their lack of experience with essential technologies, such as Point of Sales (POS) systems (e.g. Micros) and Customer Relationship Management (CRM) systems (e.g. Guestline).

Table 2. Participants' profile

Informant	Pseudonym	Gender	Age	Position in the organization	Years of experience after graduation
1	Graduate I	Female	26	Marketing department, 4* hotel	2
2	Graduate II	Female	26	Restaurant, 4* hotel	2
3	Graduate III	Female	25	Front Office department, 3* hotel	1
4	Graduate IV	Female	25	Restaurant, 4* hotel	1.5
5	Graduate V	Female	27	Banqueting department, 5* hotel	3
6	Graduate VI	Male	25	Duty Manager, 5* hotel	1
7	Graduate VII	Female	27	HR department (officer), 5* hotel	4
8	Graduate VIII	Male	26	Restaurant, 5* hotel	3
9	Graduate IX	Female	25	HR department, 5* hotel	1
10	Graduate X	Male	28	Front Office, 3* hotel	4
11	Graduate XI	Female	28	Marketing department, 5* hotel	4
12	Graduate XII	Male	24	Restaurant department, 3* hotel	1
13	Graduate XIII	Male	25	Front Desk department and part-time at Bars department, 3* hotel	1
14	Graduate XIV	Male	27	Duty Manager, 4* hotel	3
15	Graduate XV	Male	30	Banqueting Manager, 4* hotel	4
16	Graduate XVI	Female	24	Front Office, 4* hotel	2
17	Graduate XVII	Female	25	Front Office, Boutique Hotel	2
18	Graduate XVIII	Female	26	Front Desk Officer, 4* hotel	2
19	Graduate XIX	Male	27	Restaurants supervisor, 4* hotel	4

Source(s): Authors' own work (2024)



Source(s): Authors' own work (2024)

Figure 1. Overview of graduates' digital skills and tools knowledge upon the completion of their degree

Furthermore, graduates in marketing roles notably highlighted their unfamiliarity with digital marketing tools and practices, including social media platforms and Review Management Systems (RMS) like TrustYou. Several participants highlighted that their

education primarily concentrated on traditional marketing and customer service techniques, often discussing face-to-face interactions, print advertising, and basic customer engagement strategies. For instance, many graduates recalled being taught how to create marketing plans using conventional methods, such as distributing brochures in the guest rooms, or conducting direct mail campaigns, rather than using digital platforms to reach their target audiences.

At the same time, the graduates noted that their curriculum did not adequately address the impact of digital transformation on the hospitality industry. Many expressed a lack of training in essential digital marketing tools and strategies that are now vital for success in the field. For example, participants mentioned feeling unprepared to utilise social media for marketing, where platforms like Instagram and Facebook are pivotal for engaging with guests and promoting brand awareness. They emphasised the importance of understanding how to create compelling social media campaigns, analyse engagement metrics, and respond to guest feedback in real time.

Moreover, graduates pointed out their limited exposure to data analytics, which is crucial for making informed business decisions. They discussed the significance of understanding how to use data from CRM systems, such as Guestline or Salesforce, to track customer behaviour, personalise guest experience, and improve guest satisfaction.

When most participants first began working in hotels, they encountered a significant learning curve as they adapted to various new systems and platforms. Many graduates reported needing to quickly familiarise themselves with online booking systems like Expedia and Booking.com, which are essential for managing reservations and optimising occupancy rates. The rapid pace of technology change meant that they had to learn how to navigate these platforms efficiently to provide excellent customer service.

In addition to booking systems, participants mentioned the challenge of using revenue management tools that help hotels analyse pricing strategies and forecast demand. They acknowledged that understanding these systems is crucial for maximising profitability. Yet, they felt underprepared for this aspect of their roles due to a lack of formal training during their studies.

To bridge this skills gap, many participants suggested using online resources, such as YouTube tutorials and free courses, to learn about these systems independently. They found that online courses offered insights and practical demonstrations not covered in their academic programs. Additionally, participants appreciated hotel-provided training sessions, which allowed them to gain on-the-job experience with the specific software used by their employers.

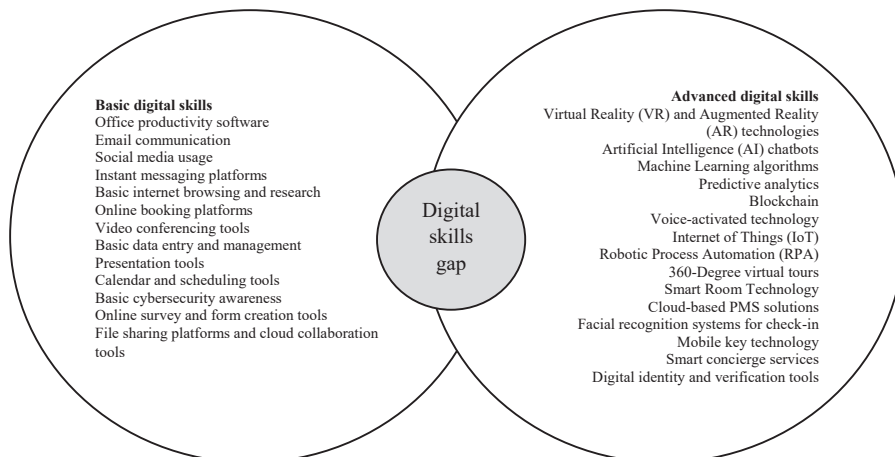
Subsequently, participants offered several recommendations on how academic programs could better prepare future graduates for the digital demands of the hospitality industry.

Several participants emphasised the importance of incorporating workshops and short courses on industry-specific software, AI technologies, and digital marketing tactics into academic programs. They argued that practical, hands-on training in these areas would significantly enhance graduates' readiness for the workforce.

According to the interviews, participants felt equipped with basic digital skills but often lacked the practical experience to use industry-specific technologies after graduation. Key weaknesses identified included insufficient hands-on training with essential software, a lack of emphasis on digital marketing, and the need for curriculum modifications to align with current business expectations and industry trends. Many participants highlighted the importance of internships and on-the-job training as crucial means to bridge the gap between theoretical knowledge and practical application.

This research underscores the importance of enhancing practical training opportunities in hospitality management programs and encouraging partnerships with hotels to ensure students gain valuable real-world experience. Given the rapid evolution of the hospitality industry, graduates must be equipped with up-to-date skills and knowledge that meet the demands of modern employers, especially in an industry characterised by constant technological advancements and shifting guest preferences.

Figure 2 illustrates the relationship between basic and advanced digital skills required in the hospitality industry, highlighting the notable gap between them. The left circle represents basic



Source(s): Authors' own work (2024)

Figure 2. Basic and advanced digital skills and the gap

digital skills essential for entry-level positions, as mentioned by the participants. The right circle encompasses advanced digital skills derived from the literature, necessary for more specialised and managerial roles (Minor *et al.*, 2024; Yulia and Irina, 2023; Busulwa *et al.*, 2022). The overlapping area in the middle indicates the digital skills gap, emphasising the need for graduates to acquire advanced competencies that align with industry demands, thus ensuring they are adequately prepared for the evolving technological landscape of the hospitality sector.

Conclusions

This study aims to evaluate how well recent graduates from hospitality and tourism management programs are prepared for hotel jobs regarding digital skills and to identify areas where educational programs can be improved to better meet industry needs. The findings reveal a noticeable gap between graduates' basic digital skills and the more advanced digital skills expected by employers in the hospitality sector (Adeyinka-Ojo *et al.*, 2020). Basic digital skills, such as proficiency in Microsoft Office tools, are essential; however, the industry increasingly demands familiarity with advanced digital tools and software, including Property Management Systems, Customer Relationship Management tools, and data analytics platforms—particularly for graduates who are more likely to become managers. Thus, graduates must acquire at least a minimum of advanced digital skills to ensure they are competitive and effective in their roles (Buhalis *et al.*, 2024).

Although hotels in Cyprus have not yet fully integrated advanced technologies, such as robotics and sophisticated data analytics systems, it is imperative that educational institutions revise their curricula to incorporate comprehensive training that aligns with current industry trends and expectations aiming to equip graduates for the challenges they will face in the evolving hospitality landscape.

This study has its limitations. As a preliminary investigation and practitioner opinion paper, it offers insights and acknowledges the need for further research in this area. There is a lack of studies examining the readiness of hospitality graduates with digital skills, highlighting a significant gap in the literature (Busulwa *et al.*, 2022). Additionally, the small sample size and the qualitative nature of the research limits the generalisability of the findings.

Future research should involve a larger sample of graduates and employ both qualitative and quantitative methodologies to provide a more comprehensive understanding of the skills landscape in hospitality education. Researchers can measure the digital skills of first-year

students at the end of each semester, tracking their progress throughout their studies. The proposed longitudinal approach would enable the identification of trends and areas of improvement in digital skills as students advance through their programs. By the end of the academic program, conducting qualitative research through interviews with graduates will provide an understanding of their perceptions of skill readiness and the effectiveness of their education.

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