AI-Powered Education: A Cross-Country Exploration of AI Literacy among Hospitality and Tourism Educators

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Abstract: While there is a growing acknowledgement of the importance of AI literacy in educational settings, there is a notable scarcity of specific studies focusing on the AI literacy levels of hospitality and tourism educators in the Asian region. Notably, this study explores the AI literacy levels and integration of AI technologies among hospitality and tourism educators. We interviewed 25 educators from Malaysia and China using a cross-country qualitative study approach to evaluate their mastery of AI tools, their integration of AI into their teaching, and their challenges. The results revealed notable differences in AI literacy between the two groups, with Malaysian educators generally reporting higher proficiency and more frequent use of advanced AI tools. In contrast, Chinese educators had more limited knowledge of AI, often utilising it for content creation or administrative purposes. Key challenges identified include the accuracy and reliability of AI-generated content, the high cost of AI tools, insufficient institutional support, concerns about students' over-reliance on AI, and ethical issues related to data privacy and security. The study's findings highlight the need for increased institutional investment in AI infrastructure, professional development programmes, and ethical guidelines for AI use in education. Future research should investigate the long-term effects of AI integration in hospitality and tourism education and expand its scope to encompass a broader range of countries and educational contexts.

Keywords: AI Literacy, Artificial Intelligence, Education, Hospitality and Tourism

1. Introduction

Artificial Intelligence (AI) is profoundly impacting the educational framework within the hotel and tourism industry. The capacity of AI to enhance learning experiences in tourism and hospitality education is demonstrated by the use of virtual reality technology, which improves student motivation and knowledge retention (Elsayed & Daif, 2023). There is a growing emphasis for stakeholders in the hospitality and tourism sector, such as institutions, policymakers, and tour management teams, to

effectively leverage AI-based technology to enhance business operations (Zimik, 2024). AI applications can streamline repetitive tasks, such as booking management and guest enquiries, which allows staff to focus on providing high-touch customer service. Furthermore, AI-powered analytics can enable better understanding of customer preferences and behaviours, fostering personalised marketing strategies and improved guest experiences. Thus, more scholars are highlighting the importance of AI literacy in preparing people to navigate an increasingly AI-driven environment (Faruqe et al., 2022; Ng et al., 2021).

Recent studies highlight the need for AI literacy in higher education environments. A survey conducted by Yu-mi (2021) sought to define AI literacy and investigate the fundamental abilities necessary for existence in the AI era. The research concentrated on elucidating the educational objectives of AI literacy and the essential skills required to traverse an AI-driven environment adeptly. Salhab (2024) also examined the use of AI literacy within curriculum development in higher education contexts. The study examined college professors' views on AI literacy and underscored the increasing acknowledgement of the need for extensive AI instruction across many disciplines in higher education. Additionally, Southworth et al. (2023) introduced a study that created a model for AI literacy throughout the higher education curriculum. The research sought to revolutionise the higher education sector by innovating AI literacy, emphasising the necessity of incorporating AI literacy across diverse disciplines.

Incorporating AI in tourism and hospitality education entails numerous consequences and issues necessitating consideration (Aydin, 2024). Faruqe et al. (2022) concentrated on creating a competency model for AI literacy, highlighting the necessity of core knowledge and abilities in AI for success in the AI workforce. The study emphasised the difficulties educators and educational institutions encounter in adapting to the swift progress of AI technologies. Rütti-Joy (2023) underscores the necessity for educators to be sufficiently equipped to instruct with AI, as their comprehension and application of AI will profoundly impact students' learning experiences. These findings underscore the necessity of comprehending AI literacy as a requirement for its integration into the curriculum and developing creative approaches for AI literacy education. This aims to equip educators and students with the essential skills and knowledge to excel in an AI-driven environment.

Despite the increasing recognition of AI literacy's significance in educational contexts, there is a conspicuous lack of targeted research examining the AI literacy levels of hospitality educators in Southeast Asian nations (Ibrahim, 2024). Current studies have primarily focused on AI literacy within general educational settings, including librarians (Mutia, 2024), library and information science researchers (Paladhi & Maruthaveeran, 2023), and primary and middle school educators (Zhao et al., 2022). Putera et al. (2024) examined AI responsibility in healthcare from the legal education framework perspective. Nonetheless, limited comparative research examines explicitly the AI literacy skills and needs of hospitality and tourism educators in the Asian region. The scant study on AI literacy among educators in Asia highlights the necessity for specialised studies that explore the unique difficulties, skills, and training requirements of hospitality educators in these countries.

In line with the research gaps, this study explores the AI literacy levels and integration of AI technologies among hospitality and tourism education educators in Malaysia and China. The study provides a novel understanding of the current AI literacy levels among hospitality educators in this part of the world. It can help to pinpoint areas necessitating further training and support, which is vital for enhancing the quality of education in the hospitality sector. Additionally, exploring hospitality educators' knowledge and practices on AI integration in teaching practices can offer valuable insights into the strategies needed to bridge the existing AI literacy gap in this specific educational domain.

2. Literature Review

2.1 AI Literacy, Hospitality and Tourism Higher Learning Education

Although digital technologies play a pivotal role in higher-education pedagogy (Na et al., 2024), the concept of AI literacy is still developing. Several studies suggest it should encompass competencies linked to the critical assessment of AI technologies and the ethical implications of their application (Alamäki et al., 2024). Ng et al. (2021) characterise AI literacy as encompassing both the technical comprehension of AI and the perceived competencies, confidence, and preparedness to engage with AI learning. This comprehensive strategy highlights the need for school curricula to promote AI literacy

via experiential learning opportunities. This study defines AI literacy, following the work of Ng et al. (2021), as the skills that empower individuals to comprehend, assess, and interact proficiently with artificial intelligence systems. It includes several abilities, such as critically evaluating AI tools, effectively communicating and collaborating with AI systems, and employing AI as an educational resource. Educators need to be well versed in digital technologies, as the learners are becoming more technology savvy (Tai et al., 2022).

The significance of AI in higher education is progressively attracting attention from scholars. Ruiz (2023) examined the influence of AI in higher education, highlighting its transformative capacity to enhance educational experiences. Abbas et al. (2023) discovered that AI tools can improve students' academic performance at advanced levels, facilitating a more profound comprehension of utilising AI technologies for educational enhancement. Hannan (2021) emphasised the effective implementation of AI technology in enhancing student learning experiences, support systems, and enrolment management in higher education institutions. Singh et al. (2024) demonstrated the efficacy of AI systems in creating digital learning platforms inside higher education. Zawacki-Richter et al. (2019) delineated significant domains of AI applications in higher education, encompassing profiling and prediction, assessment and evaluation, adaptive systems, and intelligent teaching systems. Kong (2023) examined the effect of AI perception on career resilience and informal learning within the tourism and hospitality sector, offering insights into AI's impact on employees' career advancement and learning endeavours.

In hospitality and tourism education, AI literacy is essential for equipping educators to incorporate AI tools and technology into their instructional methodologies effectively. Wang et al. (2023) proposed a reconfiguration of tourism and hospitality pedagogy and assessment quality assurance within a post-COVID-19 higher education context, responding to the changing educational demands following the pandemic. AI literacy is becoming essential for educators in higher education to navigate the changing educational landscape adeptly. Salhab (2024) underscores that AI literacy is a crucial foundation comprising the skills and knowledge required for educators and learners to do practical activities utilising AI within an educational framework. Educators must enhance their AI literacy to remain updated on advancements in AI technology and advocate for AI literacy to promote ethical awareness regarding AI usage (Boscardin, 2023). Moreover, Biagini (2024) emphasised that AI literacy seeks to democratise comprehension and accessibility of AI technology, guaranteeing that many groups may engage critically with AI systems.

Yetişensoy and Rapoport (2023) emphasised that educators must cultivate AI literacy to enhance sustainable education and organisational advancement in higher education institutions. They must improve their AI literacy to remain informed about advancements in AI technology and act as advocates for AI literacy, promoting social responsibility and ethical consciousness for AI usage (Boscardin, 2023). Modran (2024) asserted that educators must comprehensively understand AI to equip students for the AI-centric environment they will encounter after graduation. By cultivating AI literacy, educators can utilise AI resources to augment student learning experiences, refine teaching approaches, and maintain relevance in an industry progressively influenced by AI (Zimik, 2024). Furthermore, they can proficiently assist students in comprehending the fundamentals of AI, its benefits, drawbacks, and diverse applications in higher education (Chan & Hu, 2023). AI literacy seeks to democratise comprehension and accessibility of AI technology, enabling many populations to learn about and critically interact with these systems (Biagini, 2024).

2.2 AI Literacy in Malaysia and China: Challenges and Opportunities for Educators

The proficiency of higher education educators in Malaysia and China regarding AI is becoming a critical priority as institutions endeavour to equip pupils for a future dominated by AI technology. In Malaysia, the incorporation of AI literacy into higher education remains in its early phases. Salhab (2024) emphasised the necessity for extensive AI literacy across diverse disciplines, observing that the existing emphasis has predominantly been on particular areas like data science and computer science. This indicates a deficiency in the comprehensive incorporation of AI literacy within the hospitality and tourism curriculum, which is vital for preparing educators with the requisite abilities to succeed in an AI-centric environment. The study reinforced the significance of faculty development programmes to improve educators' AI literacy, enabling the successful utilisation of AI tools in their teaching methodologies. In China, Shen and Cui (2024) indicated that higher education institutions must

sufficiently address the necessity of AI literacy. The absence of specialised AI literacy training for educators can impede the successful incorporation of AI into educational practices. Zhao et al. (2022) highlighted the imperative of cultivating AI literacy among educators, especially in primary and secondary education, which may subsequently influence higher education.

In both nations, AI literacy comprises technical abilities, ethical issues, and the capacity to evaluate AI technologies critically. Yetişensoy and Rapoport (2023) contended that AI literacy is increasingly a requisite for citizenship, emphasising the necessity for educators to impart AI concepts while fostering a feeling of responsibility concerning the ethical ramifications of AI technologies. Consequently, it is imperative to investigate AI literacy among educators in hospitality and tourism. The insights can clarify the precise skills and expertise educators need to incorporate AI tools and technology into their teaching techniques properly. Ng et al. (2021) emphasised the significance of perceived competencies, self-assurance, and preparedness in instructors' acquisition of AI knowledge. They proposed that cultivating a culture of AI literacy among instructors is essential for improving the overall educational experience and equipping students for future difficulties. Academic institutions and policymakers are pivotal in developing specialised training programmes, curriculum improvements, and support systems to provide hospitality instructors with the necessary AI literacy competencies.

3. Research Method

A qualitative approach is deemed the most suitable method for this study because it provides in-depth insights into hospitality and tourism educators' experiences, perceptions, and attitudes regarding AI literacy. Qualitative research allows for a comprehensive exploration of complex phenomena, which is essential in understanding how AI is integrated into educational practices and its impact on teaching methodologies. This approach captures the subjective experiences and contextual factors that quantitative methods might overlook (Aspers & Corte, 2019). The target population for this study comprises hospitality and tourism educators in higher learning institutions in China and Malaysia. Purposive sampling was employed to select educators with more than three years of experience who specialise in teaching hospitality and tourism. This sampling method is appropriate as it ensures that participants have sufficient expertise and familiarity with the subject matter, thereby providing rich and relevant data for the study. By focusing on experienced educators, the study can gather detailed insights into the practical implications of AI literacy and its impact on teaching practices within the hospitality and tourism fields.

The data was collected through semi-structured interviews, allowing flexibility in exploring various aspects of AI literacy while ensuring that key topics are covered consistently across interviews. Twenty-five informants (11 from Malaysia and 14 from China) who fit the sample criteria volunteered to participate in the study. They were interviewed face-to-face or online to ensure accessibility and convenience for participants, accommodating their preferences and schedules. They were asked about their mastery of AI tools (rank 1 – 10), integration of AI into their teaching, and their challenges. We obtained consent and approval from all informants before the interview sessions. We protect their privacy and encourage candid participation by keeping their identities and responses private and confidential.

4. Data Analysis and Results

We conducted a thematic analysis of interview data using NVivo 14. This method is suitable for the study as it systematically identifies, analyses, and reports patterns or themes within qualitative data (Clarke & Braun, 2017). NVivo 14 provides robust tools for coding and organising data (Ioannidis & Kontis, 2023), facilitating a thorough examination of themes related to AI literacy among hospitality and tourism educators. This ensures a systematic data analysis, comprehensively understanding the participants' experiences and perspectives.

4.1 Educational Background and Professional Experience

The Malaysian informants possess advanced academic qualifications, with the majority holding PhDs in fields related to hospitality and tourism. Seven of 11 informants hold PhDs in areas such as

tourism planning, technology, and management, while the remaining four possess master's degrees in hospitality or tourism management. One is a current PhD candidate. The Malaysian informants have extensive teaching experience, ranging from 4 to 21 years. Most have specialised in tourism marketing, management, technology, and customer behaviour. Their combined expertise highlights a deep connection with academia and the tourism and hospitality sectors. The Chinese informants also have advanced qualifications, but with a more balanced distribution between master's and doctoral degrees. Five informants hold PhDs in hospitality and tourism-related fields. At the same time, nine possess master's degrees, often in international hospitality management, business administration, and related fields—teaching experience among the Chinese informants ranges from 3 to 17 years. Before transitioning into academia, many informants have practical experience in the hospitality industry, such as working in hotels, travel agencies, or food and beverage departments. Their dual exposure to both the professional and academic fields is evident, though they tend to have fewer years of teaching experience compared to their Malaysian counterparts.

4.2 AI Literacy and Familiarity

Participants from Malaysia and China demonstrated different spectrums of familiarity and types of AI tools used. These themes highlight the level of hospitality and tourism educators' AI engagement and their comfort with its application in their teaching and research. Concerning the level of AI literacy, most Malaysian informants ranked themselves 7 and above (72.73%), indicating relatively high confidence in using AI tools. For instance, MY01 rated himself 9, as he interacts with AI technologies daily. The remaining 27.27% ranked their AI literacy level between 4 and 6. The most frequently used AI tools include ChatGPT (30.30%), QuillBot (12.12%), and other tools (57.58%), such as Canva and Scite. A few informants cited that they incorporate reality-based technologies into their teaching for more immersive teaching experiences. Most Malaysian informants use AI for research-related tasks such as paraphrasing, generating ideas, and checking grammar, but they have yet to use it entirely for teaching. For example, informant MY11 cited, "*I mostly use ChatGPT. I don't use it all the time in my teaching so far.*"

In contrast, Chinese informants' AI literacy scores were generally lower, ranging from 2 to 6. The majority (60%) mentioned they fall in the 4 to 6 range; 33.33% ranked themselves as three and below. Only one (6.67%) ranked herself 7.5. Most informants admitted to having limited knowledge of AI and primarily used basic tools such as ChatGPT (22.22%), Kimi (16.67%), and other tools (61.11%) such as ERNIE Bot and WPS AI. These AI tools were often used in supporting roles, including writing, translation, or content creation. Most of them rarely used AI for teaching purposes, as their engagement with AI was mainly introductory or limited to specific functions such as essay editing and data collection. Informant CN03, for example, mentioned, "*only the basic definition of AI is understood, ... only some simple software is used, ... little is known about establishing strict privacy laws and regulatory mechanisms, ...*". The lower scores reflect less familiarity and comfort with AI tools than their Malaysian counterparts. Thus, Malaysian informants demonstrated higher adaptability to AI, with many expressing a willingness to learn new tools and technologies. Most Chinese informants viewed their AI literacy as introductory compared to Malaysian informants. They often reported using AI for basic tasks like writing or summarising but expressed a lack of deeper understanding and proficiency with more advanced AI tools. Although different AI tools were used by Malaysian (e.g., Grammarly, Jenni.ai, Canva) and Chinese (e.g., Kimi, ERNIE Bot) educators, a common tool used is ChatGPT.

4.3 AI Integration in Teaching and Challenges

Despite the varying AI literacy levels in both countries, AI integration in teaching remains limited, though key differences emerged in the extent of use and the challenges educators face. Only half of the Malaysian informants (50%) have successfully integrated AI into their teaching methods. Most informants leveraged AI to prepare quizzes, teaching notes, and research projects. At the same time, few used virtual and augmented reality in tourism-related courses to simulate real-world experiences (e.g., informant MY01 stated using virtual and augmented reality such as Google Maps and street views in tour guiding courses to assist students' immersion and visualisation). However, there was also some hesitation regarding AI's role in teaching, with 30.77% of informants expressing

concerns about over-reliance on AI among students. They are worried that students' "*critical thinking skills can be demised*", as stated by informant MY06. Similarly, AI integration in teaching among Chinese informants is minimal. Only 46.67% had integrated AI to assist their teaching content and materials, and 13.33% used it to assist students in data collection and analysis. A few informants noted using AI tools like ChatGPT (22.22%) to query specific topics and Kimi (16.67%) to assist students in writing assignments or planning tourism activities. Most mentioned that AI is not yet widely embedded in their curriculum (40%).

Malaysian informants mentioned three significant barriers to AI integration: Functional Issues, focusing on the danger of AI information inaccuracy and reliability (38.46%); Economic Issues, on the high cost and accessibility of AI tools (30.77%); and Social and Personal Issues, on students' over-reliance on AI (30.77%). Chinese informants reported similar but slightly different barriers, with two additional challenges. The most significant barrier is National Education and Organisational Issues associated with insufficient training for faculty and students, unclear guidelines for AI usage, and the need to balance between technology-based and traditional teaching methods (31.25%), followed by economic issues on high cost and concerns on digital divides (18.75%); Social and Personal Issues related to insufficient technical knowledge and skills and instructor-student interaction reduction (18.75%); Functional Issues focusing on information accuracy and depth (15.63%); and Ethical Issues (15.63%) concerning AI usage and privacy concerns.

Findings showed three common notes. First, Malaysian and Chinese educators worry about the reliability and accuracy of AI-generated information. As noted by informant CN10, "*When using AI in writing, I found that sometimes the content written by AI is far from the truth. I need to have the awareness and ability to tell right from wrong.*" Secondly, Malaysian and Chinese institutions do not subscribe to premium AI services, limiting their ability to integrate AI into teaching. AI tools that require expensive subscriptions or specialised software were identified as an obstacle. Thus, Malaysian and Chinese informants highlighted the need for more institutional support, such as subscriptions to AI tools and access to training on AI integration. Lastly, concerns about the pedagogical impact of AI were prevalent, with both groups noting that AI could undermine students' original thinking if not carefully managed. Informants expressed concerns about students becoming too dependent on AI for academic tasks.

Findings also observed three diverse views between Malaysian and Chinese educators. First, regarding social and personal issues, Malaysian educators are concerned about students' over-reliance on AI usage. At the same time, the Chinese highlighted a significant challenge as insufficient technical knowledge and AI proficiency. As highlighted by informant CN09, "*Many educators may not have enough basic AI knowledge or skills to integrate it into the teaching process effectively. They may not understand the basic principles of AI, how to apply it, and how to choose the right tools to support teaching.*" Many reported being at a basic level of AI understanding and lacking the skills to apply AI meaningfully in teaching. Secondly, Chinese educators are bound to national education and organisational regulations. According to informant CN01, "*the curriculum and teaching and research objectives of China's tourism higher education are relatively old, and the teaching concepts and education and teaching systems based on AI technology do not have sufficient theoretical and technical support.*" Most Chinese educators did not fully incorporate AI into teaching because of the national education policy. Lastly, Chinese educators are concerned about the ethical implications of AI (e.g., informant CN11 cited that "*...concerns about how student information is stored and used. As an educator, it is crucial to maintain the trust of students and parents by ensuring that all data practices comply with privacy regulations and ethical standards.*" Thus, Malaysian educators particularly emphasised how AI might diminish critical thinking and creativity among students, while Chinese informants were more focused on adhering to national and organisational regulations and ethical issues such as privacy, data security, and the social impact of AI.

5. Discussion and Implications

Although both informant groups encounter similar challenges, notable AI familiarity and usage disparities are evident. This indicates diverse institutional, societal, and individual elements that influence the adoption of AI in higher education in hospitality and tourism. The discrepancy in AI literacy between Malaysian and Chinese informants is notable. Most Malaysian educators rated their

AI literacy higher, with scores ranging from 7 to 9, compared to the more modest ratings from Chinese educators, who mostly scored between 2 and 6. Several factors account for this discrepancy. Malaysian informants reported a broader use of AI tools, directly incorporating more advanced applications like virtual and augmented reality into their teaching methods. On the other hand, Chinese educators utilised AI primarily for administrative tasks and content creation, employing tools like ChatGPT, Kimi, and WPS AI for essay writing and summarisation. We could link this variation in AI literacy to differences in institutional infrastructure and exposure to AI tools. Malaysian educators appeared more open and adaptable to new technologies, likely due to better access to AI tools and more substantial institutional support for integrating these technologies into the curriculum. However, Chinese educators were more cautious, citing limited familiarity with advanced AI systems and a lack of formal training. This is consistent with the findings of Shen and Cui (2024), who highlighted a gap in professional development and institutional investment in AI education in China.

AI integration in teaching also varied significantly between the two groups. Malaysian educators were more likely to incorporate AI into their teaching methods, using virtual and augmented reality tools to simulate real-world tourism experiences and help students visualise tour packages. Some Malaysian informants also leveraged AI to create quizzes, prepare teaching materials, and generate new research project ideas. The proactive approach to AI integration suggests higher comfort and familiarity with the technology. Nevertheless, there were concerns about students over-relying on AI, potentially reducing critical thinking skills and creativity. This fear reflects broader global concerns about the impact of AI on education, where educators must balance technological benefits with the need for independent thinking and problem-solving. In contrast, Chinese educators reported much lower levels of AI integration in their teaching, with most informants using AI for basic tasks, such as data collection or student assessments. While some Chinese educators acknowledged the potential for AI to improve lesson efficiency, they hesitated to fully adopt AI in their curriculum due to national education regulations, concerns about data privacy, the cost of AI tools, and the need for proper training. Furthermore, some informants indicated that their institutions discouraged using AI in teaching, with policies preventing students from bringing smartphones to class, thus limiting the potential for mobile AI-enabled learning environments.

Malaysian and Chinese informants faced common challenges regarding AI integration. However, their concerns took on different emphases. Malaysian educators expressed frustration over the cost of AI tools, noting that institutional subscriptions to premium AI services were often unavailable. This limited their ability to fully utilise AI's capabilities, especially in more advanced applications, such as immersive learning with virtual and augmented reality. Chinese informants also cited cost as a barrier but were more focused on ethical concerns, including data security, privacy, and the potential social impact of AI. Several informants highlighted the risks associated with AI's growing role in education, such as algorithmic biases and the erosion of teacher-student relationships due to over-reliance on technology. Moreover, both groups acknowledged the need for ongoing training and professional development to keep pace with rapidly evolving AI technologies. Ng et al. (2021), Salhab (2024), and Zhao et al. (2022) echoed this, suggesting that educators should have broader access to AI literacy professional development training. Despite their relatively high AI literacy, Malaysian educators acknowledged the challenges of staying updated with new AI tools. In contrast, Chinese educators indicated that the lack of AI training and institutional support was a significant barrier to more extensive AI adoption.

The findings of this study offer several practical implications for relevant stakeholders in hospitality and tourism education, including higher education institutions, educators, policymakers, and technology providers. For higher education institutions, there is a pressing need to strengthen support for AI adoption in hospitality and tourism education. They should invest in AI tools and technologies to facilitate interactive and immersive learning experiences. This entails AI-driven platforms that aid in content creation, data analysis, and assessment, providing educators with the resources to design more dynamic and efficient courses. Also, AI-based education policies should address concerns about data privacy, ethics, and over-reliance. For example, guidelines on how students should use AI tools responsibly in assignments can prevent ethical issues and ensure that students continue to develop critical thinking skills. Furthermore, institutions should offer training and workshops to improve AI literacy among educators. Continuous professional development programmes focusing on AI's technical and pedagogical aspects are critical in empowering educators to use AI more effectively.

For educators in hospitality and tourism, the results suggest a need for more proactive engagement with AI technologies. While some Malaysian educators already use AI tools like ChatGPT, Canva, and QuillBot, many Chinese educators report only using basic or introductory AI. Educators must recognise AI's value, not as a tool for administrative tasks but as a pedagogical asset that can enhance students' learning outcomes. Educators can incorporate AI into their teaching methods by exploring AI tools that align with their curriculum, such as using AI to simulate real-world industry experiences or assist students with research and content creation. However, they must also be cautious of the challenges of AI integration. Over-reliance on AI tools can weaken students' ability to think critically and creatively, so educators should balance AI with traditional teaching methods that encourage independent thought. Practical strategies include using AI to support lesson preparation or grading, ensuring students engage in tasks requiring problem-solving and collaboration without AI intervention. Educators can also guide students through ethical AI use, emphasising the importance of data privacy and responsible digital behaviour in an increasingly AI-driven world.

To promote the widespread adoption of AI, relevant government bodies should prioritise developing national AI literacy programmes aimed at educators. These programmes can provide training on AI tools, practical applications in teaching, and ethical guidelines. Educators, particularly in China, often raise ethical concerns about data privacy, algorithmic bias, and the impact of AI on social equity, prompting policymakers to address these issues. Regulatory frameworks safeguarding student data and protecting privacy are essential in building trust in AI technologies. Furthermore, policies that ensure equitable access to AI tools, especially for students in under-resourced areas, can help mitigate the digital divide. This can allow them to benefit from AI-enhanced learning environments. Additionally, policymakers can incentivise higher education institutions to incorporate AI into their curricula through funding, grants, or partnerships with technology providers. Financial support for AI infrastructure, such as AI labs or subscriptions to premium AI tools, can enable institutions to experiment with innovative AI applications. This, ultimately, can enhance the quality of education.

AI technology developers must consider the unique needs of hospitality and tourism educators. The findings show that while AI tools like ChatGPT, QuillBot, and ERNIE Bot are being used in limited capacities, there is a demand for more specialised AI solutions tailored to the specific requirements of hospitality and tourism education. For instance, AI tools that simulate real-world tourism scenarios or allow students to design and analyse hospitality services can help bridge the gap between theoretical knowledge and practical applications. They should also focus on creating user-friendly and accessible tools that educators with varying levels of AI literacy can adopt. Given the concerns about AI tools' high costs, AI offerings should consider scalable solutions or discounted subscriptions for educational institutions. By collaborating with universities and colleges, AI technology developers can develop custom solutions that align with institutional goals, curricula, and budget constraints. Moreover, they must prioritise ethical considerations in developing AI systems that are transparent, understandable, and free from biases. Building robust AI tools that safeguard data privacy and security is critical for gaining trust among educators and students.

6. Conclusion

This study intended to investigate AI literacy among educators in hospitality and tourism education in Malaysia and China. It sought to examine their familiarity with AI tools, their integration of AI into pedagogy, and the obstacles they encounter. The thematic analysis indicated that Malaysian educators had elevated AI literacy, regularly utilising ChatGPT, QuillBot, and immersive technologies. Conversely, Chinese educators demonstrated a more constrained familiarity with AI, frequently confining its application to fundamental administrative functions or content generation. Prevalent obstacles encompassed elevated expenses, insufficient institutional backing, apprehensions about pupils' excessive dependence on AI, and ethical dilemmas about privacy and data security. The results underline the disparate levels of AI literacy and the differing extents of AI integration in hospitality and tourism education among educators in Malaysia and China. While both groups of informants share common challenges, there are significant differences in AI familiarity and application. This signifies varying institutional, cultural, and individual factors shaping how AI is adopted in higher education.

Notwithstanding the valuable insights obtained, the study possesses certain limitations. The limited sample size may restrict the generalisability of the findings. Additional quantitative research with larger sample sizes should be undertaken to examine the adoption of specific AI tools among hospitality and tourism instructors with diverse socio-demographic backgrounds. Future empirical research may investigate how educators adjust to emerging technology and their effects on pedagogical methods and student learning experiences. Furthermore, the study exclusively examined educators from two nations, indicating that the results may only partially reflect the worldwide context of AI literacy in hospitality and tourism education. Subsequent research would broaden the parameters of this study by incorporating educators from a more comprehensive array of countries and areas to yield a more thorough comprehension of AI literacy in hospitality and tourism education on a worldwide scale.

7. Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Authors 1 and 3 conducted the fieldwork, compiled the literature review, and supervised the entire article's composition. Author 4 composed the study technique and conducted the data entry. Author 2 conducted the statistical analysis and interpreted the results. Author 5 enhanced the manuscript to augment clarity. All writers reviewed and endorsed the final manuscript.

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