

# **AI in the Tourism sector**

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## Abstract

This study investigates the role of Artificial Intelligence (AI) in tourism education at Breda University of Applied Sciences (BUas) through a mixed-methods approach. Quantitative data from 51 survey responses examine whether AI knowledge correlates with professional experience, explores differences in average and median AI expertise among educators, students, and support staff, and assesses whether AI proficiency relates to academic performance. A Chi-Square test showed no statistically significant association between professional experience and AI knowledge. Visual and descriptive analyses revealed educators generally report the highest AI expertise, followed by students and then supporting staff, although the small subgroup sizes limit broad conclusions. A Pearson correlation test ( $r = 0.21, p = 0.51$ ) indicated no significant link between AI knowledge and academic performance within this sample.

Qualitative interviews with students and an e-tourism lecturer complemented the survey data, providing insights into AI's perceived advantages—such as time-saving and the ability to manage large information loads—and its potential drawbacks, namely overreliance, erosion of critical thinking, and ethical concerns around AI-generated outputs. Overall, these findings underscore the nuanced impact of AI in tourism education: while AI can enhance learning efficiency, educators and students alike emphasize the importance of responsible integration, source validation, and the preservation of analytical skills.

## Introduction

Artificial Intelligence (AI) is transforming the tourism industry, influencing destination management, customer service, and data-driven decision-making (Buhalis & Leung, 2018; Xiang & Fesenmaier, 2017). Its growing use in tourism education raises critical questions about how educators, students, and support staff adapt to and integrate these technologies. While AI offers efficiency, personalization, and predictive capabilities, concerns persist around ethical use, transparency, and the potential erosion of critical thinking skills (Chen, Chen, & Lin, 2020).

In higher education, AI impacts administration, teaching, and learning (Chen et al., 2020). In tourism, this translates to automated support (e.g., grading), AI-driven teaching tools (e.g., chatbots), and personalized learning experiences (e.g., simulations). Key questions include whether tourism faculty and students possess sufficient AI knowledge, how expertise varies, and whether AI literacy correlates with academic performance.

This study explores both quantitative and qualitative aspects of AI in tourism education at BUas. It examines AI knowledge among students, faculty, and staff, investigates knowledge gaps, and links AI literacy to academic performance. It also assesses how AI tools shape study habits and ethical considerations. The findings aim to guide responsible and effective AI integration into tourism education.

## Literature Review

Recent advancements in artificial intelligence (AI) have reshaped the tourism industry, influencing destination management, customer service, and operational optimization (Buhalis & Leung, 2018; Xiang & Fesenmaier, 2017). As AI becomes more common in tourism contexts, both faculty and students need to develop skills and understanding. This need extends beyond practical applications to include AI's impact on learning, teaching, ethical considerations, and academic performance.

Chen, Chen, and Lin (2020) highlight that AI transforms education in three key areas: (1) administrative tasks, (2) instruction, and (3) learning processes. While their work covers various educational fields, it provides insights relevant to tourism education at BUas:

**Instruction and Teaching:** AI-based tools like chatbots, tutoring systems, and adaptive learning platforms personalize content, provide feedback, and foster collaboration (Chen et al., 2020). In tourism, such platforms can help students grasp concepts like destination marketing or revenue management through real-time simulations. However, trust issues arise when AI outputs lack transparency or verifiable sources, as highlighted in quantitative research question 2.

**Learning:** AI enhances learning by offering customized and engaging experiences, especially through mobile and web-based tools (Chen et al., 2020). Tourism students can simulate hotel operations or marketing campaigns, gaining experiential insights. Yet, over-reliance on AI-generated summaries, as predicted in the hypothesis for research question 1, may reduce independent research and critical thinking.

The increasing role of AI in tourism emphasizes preparing students for AI-driven careers in agencies, airlines, hotels, and destination management organizations. Findings from Chen et al. (2020) align with earlier tourism-focused studies:

**AI Knowledge and Academic Performance:** Chen et al. (2020) found that AI literacy enhances academic outcomes, enabling data-driven projects and simulations. In tourism, this translates to better performance in tasks like demand forecasting or traveler behavior analysis. However, uncritical reliance on AI may undermine critical research skills (Tussyadiah, 2020). Research Question 3 (Quantitative) explores whether AI literacy correlates with improved academic performance.

## Hypotheses

### Quantitative Research Questions

**Research Question 1:** Is there a relationship between AI knowledge and professional experience within the tourism sector at BUAs?

**Hypothesis:** Individuals with greater professional experience in the tourism sector will exhibit higher AI knowledge scores than those with less experience.

**Research Question 2:** What are the median and average levels of AI knowledge among educators, students, and supporting staff at BUAs?

**Hypothesis:** Educators will demonstrate the highest average AI knowledge, followed by students, while supporting staff will report the lowest levels overall.

**Research Question 3:** Is there a correlation between AI knowledge and academic performance among tourism students at BUAs?

**Hypothesis:** Students who possess higher AI knowledge will also achieve higher grade points, reflecting a positive correlation between these two variables.

### Qualitative Research Question

**Research Question 4:** How do students and and tourism educators perceive the advantages and drawbacks of using AI tools in tourism-related coursework, and what insights do they offer on balancing efficiency with critical thinking and ethical considerations?

**Hypothesis:** Students will report that AI tools streamline tasks such as summarizing large texts and sourcing information but also express concerns about overreliance and potential erosion of their independent research skills. Meanwhile, an e-tourism educator will highlight the need to integrate AI responsibly, emphasizing ethical considerations, validation of AI outputs, and the continued importance of critical thinking in the learning process.

## Methods

This study adopts a mixed-methods design to investigate the role and impact of AI in tourism education at Breda University of Applied Sciences. The approach combines a quantitative survey, administered via Qualtrics, and a series of qualitative interviews. By triangulating insights from these two sources, the research aims to obtain both broad numerical indicators and richer, contextualized perspectives on the integration of AI tools and resources.

### Purpose of Quantitative Method

The quantitative survey aimed to collect broad numerical data on AI awareness, usage, and perceptions across different roles in tourism education. This method provided a statistical basis to identify trends, compare groups, and explore potential relationships, such as between AI knowledge and academic performance.

### Purpose of Qualitative Method

The qualitative interviews were conducted to gain deeper insights into the contextual and experiential aspects of AI integration in tourism education. This method captured nuanced perspectives on the challenges, opportunities, and ethical considerations of AI in academic and practical settings.

In selecting the appropriate statistical methods, a clear purpose guided the approach. For group comparisons and associations, tests such as the Chi-Square test of independence, visual analyses of means/medians, and correlation measures (e.g., Pearson's  $r$ ) were chosen to suit the nature of the survey variables (e.g., categorical, ordinal, or continuous data). These methods were motivated by the study's objective to determine whether experience and role-based differences in AI knowledge existed, as well as to explore potential relationships between AI knowledge and academic performance. This choice of methods provides both descriptive clarity and inferential rigor, enabling a robust investigation of the hypotheses while respecting the sample size and data characteristics outlined in the research design.

## Participants

The survey yielded a total of 51 responses. Of these, 43 were from students, 4 were from educators, and 3 were from supporting staff. Despite efforts to achieve a larger sample size, the overall response rate remained modest, which places some constraints on the generalizability of results. The respondents' ages spanned multiple brackets: 40 participants were between 18 and 24 years old, 4 were aged 55–64, 3 were 25–34, 2 were 35–44, 1 was 45–54, and 1 was over 65. In addition to age data, respondents also reported their professional or study-related experience levels, indicating that 19 had 0–6 months of experience, 13 had 2–5 years, 9 had 1–2 years, 5 had 20 or more years, 3 had 5–10 years, 1 had 10–20 years, and 1 had 6–12 months of experience.

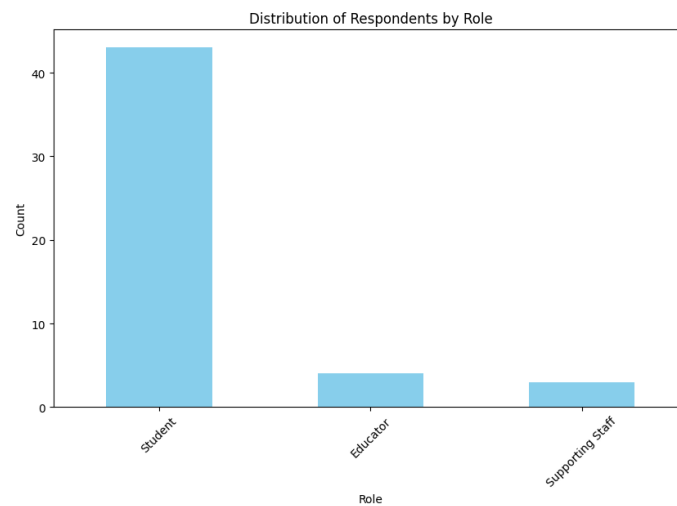


Figure 1: Distribution of respondents by Role

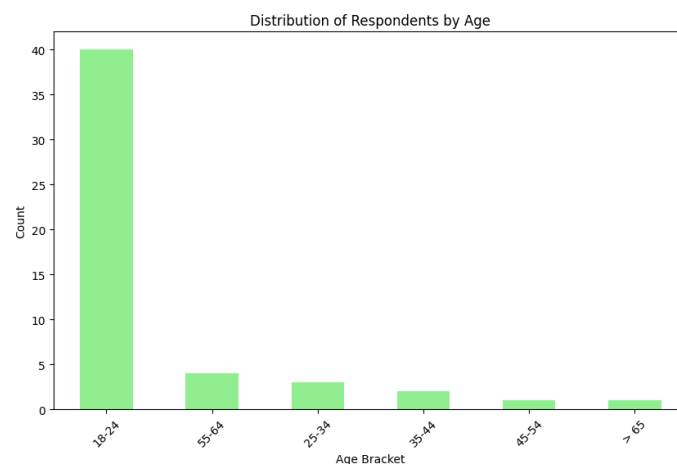


Figure 2: Distribution of respondents by age

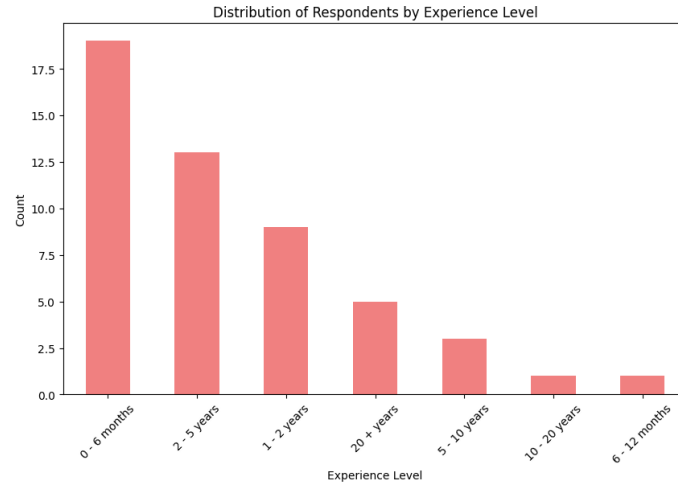


Figure 3: Experience distribution of respondents within Tourism domain

In addition to the survey participants, interviews were conducted with a small number of individuals to gain deeper insights into AI's role in tourism education. These included a BUas e-tourism lecturer, Joyce Zengerink, as well as several student interviewees. Their contributions offered more detailed perspectives on the integration of AI into coursework, the ethical and practical considerations of AI-driven tools, and the ways AI might reshape learning strategies in tourism-focused programs.

### Quantitative Method: Survey

A Qualtrics survey was developed to capture self-reported AI expertise, frequency of AI use, and beliefs regarding AI's effects on tourism education and the broader tourism industry. This questionnaire was divided into several sections to address a wide range of AI-related topics:

- Awareness:
  1. I am familiar with Machine Learning and Deep Learning technologies.
  2. I am aware of AI being used in my domain.
  3. I have taken courses related to AI in my programme.
  4. I am aware that many everyday devices and applications already use AI.
  5. I have used AI in my domain before.
- Knowledge:



1. What is the Turing Test in the context of AI?
  2. What does the acronym “NLP” stand for in the context of AI?
  3. Which of the following is an example of an AI-based virtual assistant?
  4. What is the main challenge associated with the ethical use of AI?
  5. Which of the following scenarios is most likely indicative of the presence of artificial intelligence (AI)?
- Positive Attitude:
    1. There are many beneficial applications of AI.
    2. AI systems can replace humans in repetitive tasks.
    3. AI systems can augment/assist humans in creative tasks.
    4. I think AI will be a great asset to many businesses in my domain.
  - Negative Attitude:
    1. The increase of AI usage threatens job security in my domain.
    2. I find AI scary.
    3. I am concerned about AI applications collecting my personal data.
  - Acceptance:
    1. I intend to use AI to automate repetitive tasks.
    2. I intend to use AI to assist me with creative tasks.
    3. I intend to use AI in my learning activities.
    4. I intend to stay informed about emerging AI technologies.

This structure allowed the survey to gauge not only participants’ familiarity and knowledge of AI, but also their attitudes—both positive and negative—and their willingness to adopt AI tools in tourism-related activities.

Data were collected electronically over a limited window, which may have contributed to the relatively small number of completed questionnaires. In processing the results, the research team performed descriptive analyses, including calculations of averages, medians, and frequencies for key variables, and considered the feasibility of inferential tests (such

as correlational analyses or t-tests) depending on group sizes and response distributions. Although the sample is modest, the survey data yield initial numerical insights into current levels of AI adoption and confidence among BUas tourism students, educators, and staff.

### **Qualitative Method: Interviews**

To enrich the quantitative findings, the research team conducted semi-structured interviews with selected participants, including an e-tourism lecturer at BUas, Joyce Zengerink, and a small number of tourism students. These interviews offered a deeper exploration of various aspects of AI in tourism education, building on preliminary insights gained from the survey.

Interviews were guided by a set of open-ended questions that allowed for probing follow-ups, ensuring that the conversation could adapt to each participant's unique perspective and experience. Topics covered during these interviews included:

- **Background and Domain Experience:** Participants discussed their roles, how long they had been studying or teaching in tourism, and any prior exposure to AI tools or concepts.
- **Personal Experiences With Chatbots and AI Tools:** Interviewees described whether they had used AI-driven applications, such as chatbots for research assistance or language translation, and reflected on how these experiences influenced their views of AI in tourism.
- **Knowledge About AI in One's Field:** Questions targeted participants' perceptions of AI's relevance to tourism, probing how aware they were of current AI trends and applications that might impact future job markets or course design.
- **Attitude Towards AI Introduction in Tourism:** Participants spoke about their hopes, concerns, and openness regarding increased AI integration—ranging from enthusiastic support to skepticism about potential pitfalls.

All interviews were recorded (with the participants' permission) and subsequently transcribed. A thematic analysis of the transcripts revealed recurring themes such as the risk of overreliance on AI-generated summaries, the imperative to maintain and foster

critical thinking skills, and ongoing debates about the credibility and ethics of AI in educational environments.

## **Research Design**

This research followed a series of structured steps to ensure rigorous data collection and analysis. These steps included identifying stakeholders, developing and distributing a survey, conducting interviews, and performing both descriptive and inferential analyses. The objective was to explore AI adoption, perceptions, and implications within the tourism domain at Breda University of Applied Sciences (BUas).

### **Stakeholder Analysis and Literature Review**

Key stakeholders in the BUas tourism context—students, educators, and support staff—were identified and mapped. This process was supported by an extensive review of academic and industry literature, providing a theoretical foundation for AI's role in tourism. Together, the stakeholder analysis and literature review helped refine the research questions and inform survey development.

### **Data Management Preparation**

Before data collection began, a comprehensive data management plan was created. This included a codebook, data collection procedures, ethics applications, consent forms, and storage protocols. Adherence to privacy regulations, including GDPR compliance, ensured ethical handling of participant information and research outcomes.

### **Survey Design and Integration**

A Qualtrics survey was developed to measure AI awareness, knowledge, attitudes, and acceptance among BUas tourism students and staff. Survey questions addressed both tourism-specific and general AI-related themes, aligning with broader AI research conducted at BUas.

### **Survey Distribution**

To promote the survey, a video was created emphasizing the study's importance, with a focus on AI in the sports industry. Personalized email invitations with survey links were sent to BUas staff, and QR-code fliers were distributed across campus. A second round of fliers was distributed to improve participation.

## **Interview Scheduling and Data Collection**

Semi-structured interviews were conducted with participants, including e-tourism lecturer Joyce Zengerink and several students. These interviews explored AI perceptions, integration challenges, and ethical concerns. All sessions were recorded with participant consent and transcribed for analysis.

## **Data Processing and Preliminary Analysis**

Survey and interview data were checked for completeness and cleaned for accuracy. Survey responses were coded and analyzed using statistical software for descriptive metrics such as frequency counts and averages. Interview transcripts underwent thematic analysis to identify common perspectives, including concerns about AI reliance and critical thinking.

## **Inferential Analysis**

Inferential tests were conducted to examine relationships in the survey data. For example, t-tests compared AI knowledge between staff and students, while correlation analyses and regression models assessed factors influencing AI attitudes. These analyses provided quantitative support for the qualitative findings.

This systematic approach ensured balanced data collection and rigorous analysis, offering comprehensive insights into AI's role in tourism education at BUas.

## Results

### Research Question 1

Is there a relationship between AI knowledge and professional experience within the tourism sector at BUAs?

A Chi-Square test of independence was conducted to explore whether professional experience (e.g., years working or studying in the tourism sector) is associated with participants' self-reported AI knowledge. The test produced a Chi-Square statistic of 30.32 and a p-value of 0.1743. Given that the p-value exceeds conventional significance thresholds (e.g., 0.05), these results indicate that there is *no statistically significant relationship* between AI knowledge levels and professional experience categories in this sample. In practical terms, it suggests that individuals who reported longer or shorter experience in tourism are not systematically reporting higher or lower AI knowledge scores based on the observed data.

```
r_code = ""
contingency_table <- as.table(matrix(c({}), nrow={}, byrow=TRUE))
chi2_test <- chisq.test(contingency_table)
print(chi2_test)
"".format(
    ', '.join(map(str, contingency_table.values.flatten())),
    contingency_table.shape[0]
)

# Execute the R code
ro.r(r_code)
✓ 24.9s
Chi-Square Statistic: 30.322952766531717
p-value: 0.17427732449422997
```

Figure 4: R code for Chi-square test

### Research Question 2

What are the median and average levels of AI knowledge among educators, students, and supporting staff at BUAs?

To address this question, a bar chart (Figure 5) was created to compare both the

median and the average AI knowledge scores across the three groups. The findings, as depicted in the figure, can be summarized as follows:

- **Educators:** Show the highest median (4.00) and highest mean (3.75) AI knowledge.
- **Students:** Hold a moderate position, with a median of 3.00 and a mean of 3.14.
- **Supporting Staff:** Report both the lowest median (2.00) and average (2.00) AI knowledge.

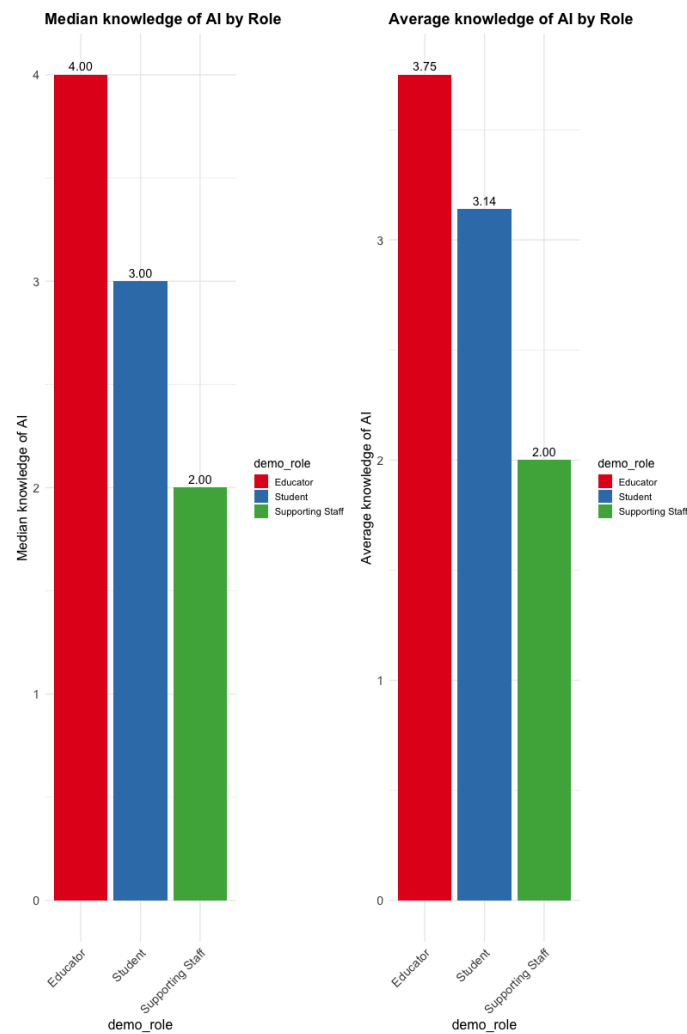


Figure 5: Median & average knowledge of AI by role

These patterns support the hypothesis that *educators tend to exhibit higher AI knowledge than students*, while *supporting staff generally report the lowest scores*. It is, however, crucial to note the limited number of educator and supporting staff responses in the dataset, which could affect the robustness of these estimates.

### Research Question 3

Is there a correlation between AI knowledge and academic performance among tourism students at BUas?

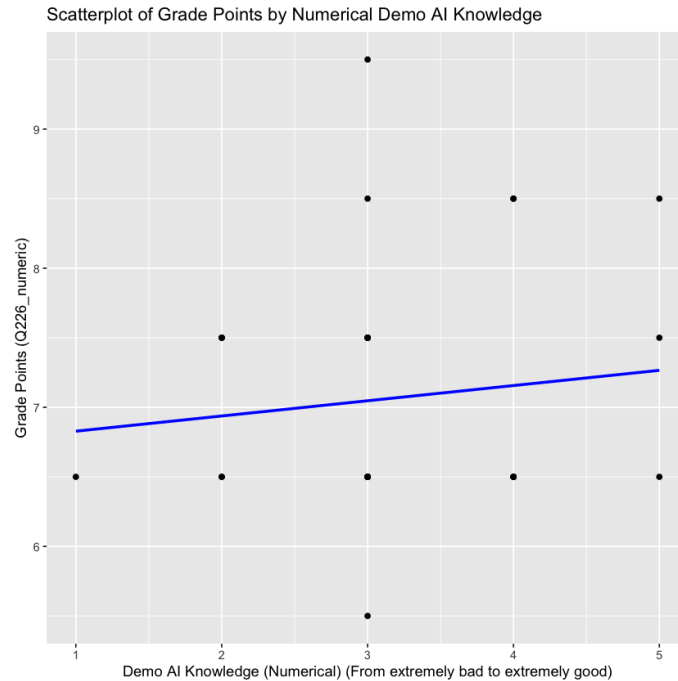


Figure 6: Scatterplot of grade points by AI knowledge (students)

A scatterplot (Figure 6) was used to illustrate the relationship between students' self-reported AI knowledge and their grade points. Although the visual suggested a slight upward trend, a Pearson correlation test revealed a correlation coefficient of  $r = 0.21$  with a p-value of 0.51. This indicates that *no statistically significant* relationship was found between AI knowledge and grade points in this sample. While the direction of the correlation is positive, the data do not provide strong evidence of a robust or meaningful relationship, especially considering the small sample size. Nonetheless, the trend remains consistent with the hypothesis that higher AI knowledge *may* correspond to better academic outcomes, albeit without sufficient statistical support in this dataset.

### Research Question 4

How do students and tourism educators perceive the advantages and drawbacks of using AI tools in tourism-related coursework, and what insights do they offer on balancing efficiency with critical thinking and ethical considerations?



To address this qualitative question, semi-structured interviews were conducted with a small number of students and with an e-tourism lecturer, Joyce Zengerink. An analysis of the transcripts revealed several recurring themes:

- **Convenience and Efficiency:** Students reported that AI tools (e.g., chatbots, summary generators) saved them time on research tasks and helped them manage large volumes of information more quickly. Multiple interviewees noted they felt “less pressure” meeting deadlines because AI could handle tasks like summarizing lengthy articles.
- **Risk of Overreliance:** Despite the perceived benefits, participants also expressed concern that they might depend too heavily on AI outputs. One student admitted that using AI “makes me a bit lazy,” particularly when summarizing long texts. This sentiment supports the notion that relying on AI might reduce deeper engagement and self-directed research.
- **Critical Thinking:** Both students and the educator emphasized the need to verify AI-generated content. There was a shared worry that automated outputs could limit the development of independent analytical skills. The educator, in particular, underscored the importance of “teaching students how to use AI responsibly,” including verifying sources and applying critical judgment to AI-driven summaries or solutions.
- **Ethical and Reliability Concerns:** Participants were broadly cautious about blindly trusting AI-generated information. They pointed out the absence of transparent references and the possibility of inaccuracies or biases in AI algorithms. This aligns with the educator’s focus on instructing students to question AI outputs, check facts, and remain mindful of ethical considerations like privacy, data security, and academic integrity.
- **Balanced Integration:** Despite reservations, students and the educator recognized the potential for AI to enhance learning experiences if used thoughtfully. Interviewees suggested that AI-based tools could free time for more creative or

analytical tasks, *provided* students do not treat AI outputs as unquestionable answers. Instructors, meanwhile, viewed AI as a catalyst for revamping coursework and assessments to encourage higher-order thinking.

Overall, these interview findings highlight the dual nature of AI integration in tourism education. Students appreciate the efficiency gains but remain wary of the potential erosion of research depth. The e-tourism lecturer's perspective echoes the call for ethical, informed usage, reinforcing the notion that AI in education should complement, rather than replace, critical and reflective learning practices.

## Conclusion

This study aimed to investigate four key questions concerning AI knowledge, its relationship to professional experience and academic performance, and the perceived advantages and drawbacks of AI tools in tourism education at BUAs.

- **Research Question 1:** *Is there a relationship between AI knowledge and professional experience within the tourism sector at BUAs?*

A Chi-Square test revealed no statistically significant association between participants' professional experience and their self-reported AI knowledge. In other words, individuals who have spent more time in the tourism field did not demonstrate systematically higher (or lower) AI knowledge compared to those with less experience. This finding suggests that factors other than length of professional involvement may play a stronger role in shaping AI-related competencies.

- **Research Question 2:** *What are the median and average levels of AI knowledge among educators, students, and supporting staff at BUAs?*

The results indicate that educators have the highest AI knowledge scores (both in terms of median and mean), followed by students, and then supporting staff with the lowest levels. This trend supports the hypothesis that role-based differences in AI awareness and skill exist, although the relatively small numbers in each subgroup should be kept in mind when generalizing.

- **Research Question 3:** *Is there a correlation between AI knowledge and academic performance among tourism students at BUAs?*

A Pearson correlation test produced a coefficient of  $r = 0.21$  with a p-value of 0.51, indicating no statistically significant relationship between self-reported AI knowledge and grade points. A 95% confidence interval for the correlation coefficient was calculated as  $(-0.10, 0.50)$ , suggesting that the true correlation may vary widely. Although the scatterplot suggested a slight positive trend, the data were insufficient to confirm a robust or meaningful association. Thus, higher AI knowledge was not conclusively linked to improved academic performance in this sample.

- **Research Question 4:** *How do students and tourism educators perceive the advantages and drawbacks of using AI tools in tourism-related coursework, and what*

*insights do they offer on balancing efficiency with critical thinking and ethical considerations?*

The interview findings show a consensus that AI tools confer substantial benefits in terms of speed and efficiency—particularly for summarizing large texts and performing routine research tasks. However, students expressed concerns about over-reliance on AI outputs and the potential erosion of independent critical thinking. The e-tourism educator similarly highlighted the necessity of verifying AI-generated materials, adhering to ethical standards, and integrating AI responsibly so that it augments rather than replaces in-depth learning. Together, these perspectives illustrate the dualistic nature of AI adoption, where convenience is balanced against the need for academic rigor and ethical accountability.

Overall, the study underscores the complexity surrounding AI use in tourism education. While educators appear to lead in AI proficiency, length of experience alone does not necessarily predict higher AI knowledge. Likewise, no strong evidence emerged of a clear link between AI knowledge and grades among students. Nonetheless, the qualitative insights reveal a shared commitment to harnessing AI’s potential without compromising critical thinking and ethical principles. These conclusions inform how BUAs—and similar institutions—might design policies, curricula, and support systems to foster both AI literacy and the essential human skills required for a forward-looking tourism industry.

## Discussion

The findings of this study shed light on how AI knowledge and practices are perceived and adopted within tourism education at Breda University of Applied Sciences (BUAs). While the results provide useful insights, they must be interpreted in the context of a relatively small sample size ( $N = 51$ ), which naturally limits the generalizability of the conclusions. This section critically examines the key findings, discusses possible reasons behind them, and offers policy implications as well as recommendations for future research.

### Interpretation of Findings and Critical Reflections

- **No Significant Link Between Experience and AI Knowledge (RQ1).** The absence of a statistically significant relationship between professional experience

and AI knowledge challenges the notion that longer exposure to the tourism sector automatically fosters higher AI competence. One explanation could be that formal AI training and personal enthusiasm for technology—rather than years in the industry—drive proficiency. Alternatively, some participants may have had limited need for AI skills in day-to-day tasks, regardless of their overall experience.

- **Differences in AI Knowledge by Role (RQ2).** The higher average and median AI knowledge among educators compared to students and supporting staff suggests that faculty who integrate AI into their teaching practices or research projects may become more adept at using these tools. However, the small number of educators and staff participating in the survey means these results should be treated with caution. There may also be a self-selection bias, where more tech-savvy educators chose to complete the survey.
- **Limited Evidence of Correlation Between AI Knowledge and Academic Performance (RQ3).** The lack of a statistically significant correlation (Pearson’s  $r = 0.21$ ,  $p = 0.51$ ) between AI knowledge and students’ grades implies that higher AI literacy alone may not guarantee better exam scores. Students’ overall academic success is multifaceted, involving study habits, motivation, course-specific challenges, and other personal factors. The small dataset underscores that more extensive studies are needed to draw definitive conclusions.
- **Perceived Advantages and Challenges in Using AI (RQ4).** Interviews revealed a nuanced view of AI’s role in tourism education. Participants highlighted time-saving benefits and the ability to handle large amounts of data quickly. However, they also raised concerns about overreliance on AI-generated summaries potentially undermining critical thinking skills. Ethical considerations—such as verifying AI outputs and maintaining academic integrity—were echoed by both students and educators, suggesting a consensus on the need for responsible AI integration.

## Policy Implications

Given the evolving significance of AI in tourism, educational institutions such as BUAs can:

- **Integrate Targeted AI Training.** Mandatory workshops or short courses for students, educators, and staff can help establish baseline competencies. This approach would be especially beneficial for supporting staff who reported lower AI knowledge, ensuring they, too, are equipped to leverage AI's potential.
- **Encourage Responsible AI Use in Curriculum.** Curriculum designers might incorporate modules on data ethics and critical evaluation of AI-generated content. Such an approach would address concerns around reliability, academic integrity, and ethical accountability.
- **Promote Collaborative Learning and Mentorship.** Pairing less experienced individuals with those who already use AI effectively could accelerate skill development. Educators who lead by example—demonstrating AI tools in lesson planning—may also reduce apprehension about AI's perceived complexity.
- **Measure and Reward AI-Driven Innovation.** Institutions could consider developing incentive programs or recognition systems for students and faculty who experiment with AI projects, thereby fostering a culture of ongoing learning and technological exploration.

## Recommendations for Future Research

- **Larger and More Diverse Samples.** To confirm or refine the patterns observed, it would be prudent to replicate this study with a broader pool of participants. Increasing both the number of respondents and the proportional representation of educators and staff would improve the robustness of group comparisons.
- **Longitudinal Studies.** Tracking the same participants over multiple semesters could reveal how AI proficiency evolves and whether ongoing experience or additional training eventually yields measurable improvements in academic performance.
- **Qualitative Deep Dives.** Given the complex ethical and pedagogical issues surrounding AI, more extensive qualitative investigations—e.g., focus groups or multiple interviews per participant—would provide deeper insights into motivations, barriers, and effective teaching strategies.

## **Conclusion**

In summary, this study's results highlight both the promise and the challenges of integrating AI into tourism education. While educators appear to lead in AI competency, the link between experience and knowledge remains inconclusive, and no firm correlation was found between AI literacy and grades. Nevertheless, qualitative insights underscore that AI can be a powerful tool if accompanied by critical thinking and ethical mindfulness. As tourism educators and students continue to adopt AI, higher education institutions would do well to promote balanced skill development, ensuring that efficiency gains do not come at the expense of deep learning and responsible tech use.

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