



## Investigating Tourism Higher Education Students' Perceptions towards Using ChatGPT

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### Abstract

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ChatGPT has recently gained popularity in various fields, including higher education, as an evolved human-like Artificial Intelligence (AI) chatbot tool that provides real-time responses in the context of virtual conversations. This research aims to explore Egyptian tourism higher education students' perceptions of ChatGPT usage. Accordingly, a quantitative approach was employed via an online semi-structured questionnaire to investigate students' perceptions of using ChatGPT, examining variations of perceptions across their gender, grade level, prior knowledge and experience with using ChatGPT. Data were collected in the fall semester of the academic year 2023-2024, involving Egyptian students of the faculty of tourism and hotels at Alexandria University. The results indicated that participants have positive perceptions of ChatGPT usage with a relatively lower level of concerns regarding credibility. Finally, research implications were discussed, shedding light on the way the students perceive ChatGPT, giving insights into the effective policies to adopt this tool in Egyptian tourism higher education institutions.

### 1. Introduction

Generally, one of the most crucial consequences of Artificial Intelligence (AI) advent is the emergence of AI chatbots that interact directly with humans, providing real-time quick responses to any user's question through analyzing and understanding text and audio data (Brachten et al., 2021; Demir & Demir, 2023; Das & J.V., 2024). AI chatbots are receiving more attention; since they have become well-known in different educational contexts, especially after the COVID-19 pandemic, for self-learning and student assessments, namely in the US and UK (Zhai et al., 2020; Crick, 2021; Mogavi et al., 2023; Schönberger, 2023).

In this regard, the AI chatbot, ChatGPT, was launched in November 2022 by a technology and research company, OpenAI, extending chatbots' capabilities through integrating language models that predict the typical sequence of words the same as real human interactions, relying on Generative Pre-training Transformer (GPT) structure (Cooper, 2023; Cotton et al., 2023; Dwivedi et al., 2023; Ivanov & Soliman, 2023; Marini et al., 2023). This transformative technology would change the core process of retrieving information. Consequently, the traditional way of searching on the academic level is about to be revolutionized (Ivanov & Umbrello, 2021; Phuong et al., 2023; Else, 2023; Yilmaz et al., 2023).

Accordingly, the wide adoption of AI applications in education has been examined critically in terms of effectiveness, ethical and legal concerns (Cooper, 2023; Cotton et al., 2023; Zhai, 2023). Furthermore, the rapid advancement of ChatGPT is reshaping the education sector, resulting in discussions and debates within the academic field concerning allowing or banning ChatGPT usage in higher education; which reflects the concept of individuals' resistance against any technological change (Dwivedi et al., 2023; Farrokhnia et al., 2023; Guo et al., 2023; Krügel et al., 2023; Strzelecki, 2023; Sulisworo & Dahlan, 2023).

In this respect, some studies acknowledged the ability of open AI platforms to facilitate rapid knowledge and enhance personal learning, while others raised concerns about the potential misuse by students for writing assessments and dissertations (Iskender, 2023; Ivanov & Soliman, 2023; Valova et al., 2024). Similarly, some universities have developed policies banning the use of AI platforms in assignments, requiring a declaration from students regarding the non-use of AI tools in their research. Meanwhile, other universities have discussed the AI tools' benefits in higher education. However, the acceptance of ChatGPT as a generative AI tool varies among different cultures and organizations (Trinidad, 2020; Ivanov & Umbrello, 2021; Dwivedi et al., 2023).

Hence, the fast-growing ChatGPT usage requires research into its adoption in higher education, considering the ethical and regulatory issues (Nayab & Hassaan, 2022; Qadir, 2022; Dwivedi et al., 2023). Generally, several studies have investigated applying AI technologies in education, suggesting that AI models and tools have an effective ability for personalized support in writing assignments (Chen et al., 2019), learning languages (Huang et al., 2018) and providing grammar and vocabulary feedback (Kim et al., 2019). At the same time, some studies discussed potential risks associated with AI tools such as reliability concerns (Cotton et al., 2023) and negative effects on critical thinking skills (Shidiq et al., 2023).

On the other side, despite the claims that there are still many students who do not have the full knowledge of ChatGPT and how to be used in their education, concerns started to be increased regarding the effect of ChatGPT and its AI-generated texts on education (Dwivedi et al., 2023; Hasanein & Sobaih, 2023; Maheshwari, 2023). Nevertheless, many authors agreed that a wide number of students have already relied on ChatGPT as a supportive tool in their research and, further, an automated tool to make assignments and even master theses (Abdaljaleel et al., 2023; Farrokhnia et al., 2023; Phuong et al., 2023; Zhai, 2023).

In this context, some studies employed Technology Acceptance Model (TAM), aiming to investigate the ChatGPT acceptance in higher education, emphasizing the importance of considering the disparity of gender, grade level, previous AI knowledge and experience with

ChatGPT in identifying perceptions of AI adoption (Iqbal et al., 2022; Hasanein & Sobaih, 2023; Maheshwari, 2023; Yilmaz et al., 2023; Das & J.V., 2024).

Nevertheless, prior studies that focused on exploring the students' perception towards using ChatGPT in higher education (Marini et al., 2023; Maheshwari, 2023; Sila et al., 2023; Yilmaz et al., 2023; Das & J.V., 2024; Valova et al., 2024) are still limited and namely conducted in Asia – especially in Indian and Malaysian universities. Hence, it is worth mentioning that this research is one of the first studies that investigates higher education students' perceptions of ChatGPT usage in Egypt.

In this regard, the research purpose is to explore the Egyptian tourism higher education students' perceptions towards ChatGPT usage at the faculty of tourism and hotel at Alexandria University, identifying potential variations of perceptions according to some factors that may affect students' technology acceptance including gender, grade level, prior knowledge of ChatGPT and past experience with using ChatGPT. Accordingly, the research questions are the following:

- Q1:** How do tourism higher education students perceive ChatGPT usage?
- Q2:** Is there a significant relationship between the gender of tourism higher education students and their perceptions towards ChatGPT usage?
- Q3:** Is there a significant relationship between the grade level of tourism higher education students and their perceptions towards ChatGPT usage?
- Q4:** Is there a significant relationship between the tourism higher education students' prior knowledge of ChatGPT and their perceptions towards ChatGPT usage?
- Q5:** Is there a significant relationship between the tourism higher education students' past experience with ChatGPT usage and their perceptions towards ChatGPT usage?

### **1.1 Importance of Research**

In light of the research objectives and questions, understanding how ChatGPT is perceived by tourism higher education students according to their gender, grade levels, prior knowledge and past experience with ChatGPT would provide valuable and deeper insights into the benefits and challenges associated with using ChatGPT in higher education. Consequently, this would help educators and policymakers in universities develop effective policies for ChatGPT to be successfully adopted to serve their educational needs.

## **2. Literature Review**

### **2.1 Artificial Intelligence and the Education Sector**

AI has noticeably influenced individuals and organizations, depending on learning to distinguish between the expected outcomes through adapting to its ecosystems' changes. Traditionally, older AI algorithms relied on structured data in order to build a model and process information, but these algorithms had limited capabilities. Over time, newer AI algorithms have been developed and become capable of mining raw text and images. Moreover, deep learning and other AI algorithms have evolved with an ability to analyze audio and videos as well (Lokman & Ameen, 2018; Ivanov & Umbrello, 2021; Marini et al., 2023; Yilmaz et al., 2023).

In this regard, AI chatbots have emerged as evolved AI algorithms in light of the rapid advancement of automated software tools, relying on both AI components: (a) Natural Language Processing technique (NLP); which refers to computer programs' ability to understand human spoken and written language; and (b) Machine Learning (ML) technique;

which enables imitating the way humans learn and improving its accuracy gradually (Kushwaha & Kar, 2021; Qadir, 2022; Haque, 2023).

Generally, factors such as personalization and enjoyment contribute positively to the AI chatbot experience (Zhu et al., 2021). They have demonstrated enhancement of service quality across various business sectors, including tourism, and are currently, strengthening the education sector by answering students' queries, navigating information and providing instant feedback (Okonkwo & Ade-Ibijola, 2021; Ivanov & Umbrello, 2021; Dwivedi et al., 2023; Yilmaz et al., 2023).

On the other hand, forms of AI chatbots can be as websites' pop-up virtual assistants, audio-based devices, or SMSs into mobile applications that can be used at home (Ivanov & Umbrello, 2021; Qadir, 2022). However, the pre-trained language model, ChatGPT is the most popular AI chatbot that provides users with information and assistance through chatting with a virtual assistant, depending on NLP and ML techniques (Dwivedi et al., 2023; Mogavi et al., 2023; Schönberger, 2023). The latest AI chatbot extension built on a language model is the freely available GPT-3 model which is trained on a dataset of different internet sources, followed by the GPT-4 version (Ivanov & Soliman, 2023; Valova et al., 2024).

## **2.2 ChatGPT Usage in Higher Education**

ChatGPT is considered a Large Language Model (LLM) that is trained to be human-like when answering questions or creating content through learning human interactions, relying on considerable conversational texts such as posts on social media and chat logs in order to predict the next upcoming words in a given sentence; which makes dialogues more realistic (Ivanov & Soliman, 2023; Marini et al., 2023; Phuong et al., 2023). Moreover, it can perform other tasks such as composing essays, translating, explaining art in details, taking tests, creating AI art prompts, etc. (Tlili et al., 2023; Zhai, 2023; Das & J.V., 2024).

It is worth mentioning that the open-source ChatGPT is trained on "a huge dataset of 40 GB in size, up to the year 2021, which is equivalent to 133 million pages, which would take 2200 years to read, gaining over one million users after the first five days of launching to exceed around 100 million users by January 2023" (Dwivedi et al., 2023, p. 23, 31). Afterward, ChatGPT has been fine-tuned based on supervised learning techniques, giving this tool a greater potential for learning, teaching and accessing information (Maheshwari, 2023; Strzelecki, 2023).

Consequently, there are various potential avenues for integrating ChatGPT in higher education; since this AI chatbot has the capability to eliminate the necessity for human involvement. It can replace the need for internet searches, providing basic educational materials and more interesting resources (Dwivedi et al., 2023; Schönberger, 2023; Das & J.V., 2024). In this respect, ChatGPT can enhance online learning and help higher education students through (a) providing answers to students' questions regarding their academic courses and assignments, along with preparing essays in a few seconds; and (b) developing digital learning for students regarding the way AI tools and applications work (Stokel-Walker, 2023; Tlili et al., 2023; Valova et al., 2024).

Furthermore, ChatGPT serves as a platform for personalized learning experiences that could enhance students' skills by offering individualized assistance in terms of summarizing texts, generating suggestions and contents based on specific criteria such as length and context (Gilson et al., 2023; Hasanein & Sobaih, 2023; Iskender, 2023). Moreover, ChatGPT supports learners of different languages by demonstrating better language writing skills for non-native speakers, as well as, correcting and giving instant feedback on grammar and sentence structures (Farrokhnia et al., 2023; 23; Ivanov & Soliman, 2023). Additionally, concerning adopting ChatGPT in research, the AI tool can generate hypotheses, conduct literature, analyze data and understand scientific results (Cotton et al., 2023; Strzelecki, 2023; Sulisworo & Dahlan, 2023).

On the other hand, ChatGPT facilitates teaching staff and lecturers' missions within the educational environment (Sila et al., 2023; Sulisworo & Dahlan, 2023). It enables them to focus on creative and strategic aspects of teaching and research through the capability to rapidly develop curriculum and generate educational materials, such as quizzes, activities, and interactive lessons. Adding to that, ChatGPT performs administrative tasks automatically such as grading tests and assessing the comprehension level of students (Dwivedi et al., 2023; Maheshwari, 2023; Marini et al., 2023; Mogavi et al., 2023; Phuong et al., 2023; Shidiq et al., 2023).

### **2.3 Factors Affecting Students' Perceptions of Using ChatGPT in Higher Education**

Generally, authors who investigated the perceptions towards using ChatGPT in education confirmed the positive perception among higher education students, especially in terms of benefits and easiness. Accordingly, the factors "perceived ease of use" followed by "perceived usefulness" are the most crucial determinants that influence students' technology acceptance; which contributes positively to their behavioural intentions (Mollick & Mollick, 2022; Hasanein & Sobaih, 2023; Maheshwari, 2023; Yilmaz et al., 2023; Das & J.V., 2024).

On the contrary, a study by Tiwari and Bhat (2023) concluded that the perceived easiness of ChatGPT usage has no significant influence on the students' behavioural intentions to adopt ChatGPT. Meanwhile, the study of Yilmaz et al. (2023) revealed that students have a moderate level of willingness to adopt Chat GPT in the future. Nonetheless, several authors including Abdaljaleel et al. (2023), Tiwari and Bhat (2023), Marini et al. (2023), Strzelecki (2023), Sila et al. (2023) and Das and J.V. (2024) indicated that students have a positive attitude towards ChatGPT utilization. Adding to that, the influence of others affects students' decision to employ ChatGPT in their education according to Iqbal et al. (2022).

In another context, trust may affect students' perception of using ChatGPT in higher education; since they tend to suspect the accuracy of the provided information by ChatGPT due to biases in responses. Consequently, several studies discussed the negative students' perception regarding ChatGPT credibility, mentioning their concerns about plagiarism issues and assessment fairness (Cotton et al., 2023; Tiwari & Bhat, 2023; Sila et al., 2023; Yilmaz et al., 2023; Das & J.V., 2024).

However, some authors agreed that students' positive perception towards ChatGPT adoption in higher education is not necessarily affected by students' gender and their grade level (Raman, 2023; Das & J.V., 2024). In this regard, according to the study of Raman (2023), students prioritize easiness of ChatGPT usage, regardless of their gender, unlike the studies of Hasanein and Sobaih (2023), Maheshwari (2023) and Yilmaz et al. (2023) that showed that male students perceive ChatGPT usage easier compared to females.

Additionally, it was found that female students prioritize the usefulness of ChatGPT usage compared to males in the study of Raman (2023) (Das & J.V., 2024). On the contrary, as



discussed by Yilmaz et al. (2023), many several authors such as Araujo et al. (2020) and Lozano et al. (2021) concluded in their studies that there is a difference in the perceived usefulness and attitude toward AI adoption according to gender, revealing that males perceive technology more useful and show a greater AI usage preference compared to females. On the other hand, a study by Yeh et al. (2021) identified a gender disparity regarding AI credibility, with males showing a higher confidence in AI reliability compared to females.

Moreover, past experiences and level of information about AI significantly affect individual perceptions (Yilmaz et al., 2023). Iqbal et al. (2022) discussed that students with previous AI chatbot experience perceive Chat GPT as more useful and easier to use, justifying this result due to the familiarity obtained from experiencing chatbots before. However, in the study of Das and J.V. (2024), it was revealed that the majority of students have a prior knowledge of ChatGPT, but they don't rely on it as a primary information source, also they have not experienced this AI generative tool more than two months.

#### **2.4 Key Considerations Regarding ChatGPT Usage in Higher Education**

Generally, integrating ChatGPT in higher education raises concerns regarding the information accuracy and reliability. The dependency on the pre-existing data that is limited to the year 2021, along with the lack of transparency on the ChatGPT mechanism for generating data pose challenges in understanding the rationale behind the ChatGPT output and may cause unintentional bias, such as gender and political biases (Chandra et al., 2022; Mollick & Mollick, 2022; Dwivedi et al., 2023; Schönberger, 2023). Consequently, this would lead to the risk of misleading students through the probability of generating wrong, inaccurate, or outdated information. Adding to that, ChatGPT tends to guess responses rather than seek clarification in case of unclear questions; leading to undesirable answers (Farrokhnia et al., 2023; Ivanov & Soliman, 2023; Sila et al., 2023).

On the other hand, ChatGPT could be used for passing exams and making assignments effortlessly. The high potential for misuse of ChatGPT capabilities could result in encouraging cheating on assignments and undermining the importance of enhancing students' writing skills and assessments (Sulisworo & Dahlan, 2023; Iskender, 2023; Das & J.V., 2024; Valova et al., 2024). Additionally, one of the consequences related to relying on ChatGPT solely for learning is the elimination of student's critical analysis, especially those who have lower attention span, which would endanger their creativity, critical thinking and problem-solving abilities (Qadir, 2022; Abdaljaleel et al., 2023).

However, essays produced by ChatGPT can be distinguished by certain flaws such as the writing style and wrong or non-existent references (Chandra et al., 2022; Dwivedi et al., 2023). Yet, institutions have not prepared a legal detection solution to identify ChatGPT-generated content in the educational process. Moreover, traditional plagiarism-detection tools are unable to detect AI-generated content due to its improved originality (Nayab & Hassaan, 2022; Else, 2023; Mogavi et al., 2023). Nevertheless, education software solutions such as AI detection capabilities have been developed globally with the aim of identifying AI-generated content in the future (Dwivedi et al., 2023).

### 3. Research Methodology

This research aims to investigate the Egyptian tourism higher education students' perceptions of using ChatGPT. Accordingly, this descriptive-exploratory research adopted a quantitative methodology using a survey method by conducting an online questionnaire to gather the primary data required for answering the questions of research.

#### 3.1 Research Design

This research relied on the Technology Acceptance Model (TAM) in order to explore Egyptian tourism university students' perceptions towards adopting ChatGPT. Generally, TAM is a concise and valid theoretical framework that has been widely applied over the years in studies related to exploring and understanding the extent of acceptance and usage of new technologies in different fields (Yilmaz et al., 2023).

This framework suggests that attitude toward adopting new technology is affected by two key factors: (a) Perceived Usefulness (PU), which reflects the individuals' perception of the ability of a new technology to facilitate their performance and enhance productivity; (b) Perceived Ease of Use (PEOU), which reflects a perception of the difficulty level of a new technology. However, this model can be extended by adding different factors according to the type and field of the new technology. Moreover, additional predictors can be incorporated such as past experience, gender and culture (Yilmaz et al., 2023).

In this regard, the TAM model was adapted to fit with ChatGPT usage in tourism higher education. However, upon the discussions of several studies mentioned earlier of various ethical concerns associated with ChatGPT, perceived credibility factor has been added as an independent construct to the model. Additionally, the importance of the surrounding environment and information provided by the closest people – especially among students' age group – would affect an individual attitude and behavior towards a technology (Abdaljaleel et al., 2023; Yilmaz et al., 2023; Das & J.V., 2024). Accordingly, social influence factor has also been added to the basic TAM model that typically includes the perceived usefulness of ChatGPT, perceived ease of ChatGPT usage, attitude towards using ChatGPT and behavioural intention to use ChatGPT, following the study of Yilmaz et al. (2023) that investigated the student's perception of ChatGPT at a private university in Kazakhstan.

#### 3.2 Sampling Design

The target population was Egyptian Alexandria University students at faculty of tourism and hotels, who enrolled in courses related to technology in order to get more accurate insights regarding their perceptions towards using the AI chatbot, ChatGPT. The two selected courses were in the tourism studies program: Computer Science course (second grade) and Information Technology Systems course (third grade). Accordingly, an online questionnaire was conducted and distributed among a sample of students.

The study employed a non-probability sampling, the representative convenience sampling technique as a non-random sampling method, which is often adopted in the social science and education field in which pre-existing groups such as students are convenient to participate. Nevertheless, this sampling method limits the representation of the total population, prohibiting results to be generalized beyond the sample, but at the same time give insights to investigate these results in different areas with different samples (Etikan, 2016; Golzar & Tajik, 2022; Yilmaz et al., 2023).

The online survey was distributed in the fall semester (November 2023) of the academic year 2023-2024. The total number of involved participants was 190; only 188 were valid due to the missing data (validity 97.1%). The analysis relied on Statistical Package for Social Sciences, IBM SPSS Statistical program (Version 25) for multiple regression analysis.

**Table 1: Profile of Respondents**

	<i>Gender</i>	<i>Freq.</i>	<i>%</i>
1.	Male	58	31
2.	Female	130	69

	<i>Grade</i>	<i>Freq.</i>	<i>%</i>
1.	Second grade	141	75
2.	Third grade	47	25

*The total number of respondents (n=188).*

The sample was represented by 141 second-grade students who enrolled in the Computer Science course (75% of the total population) and 47 third-grade students who enrolled in the Information Technology Systems course (25% of the total population). Additionally, 69% were female students and 31 % were male students aged between 18 and 22 years (generation Z) (See Table 1). Regarding the sample size in this exploratory research, it is within the acceptable range; since exploratory analyses require a sample of a minimum of 50 respondents. Adding to that, regression analysis often requires from 50 to 100 respondents (Hair et al., 2018; Memon et al., 2020).

### 3.3 Questionnaire Design

The questionnaire of this research was adopted from the study of Yilmaz et al. (2023). The 18 items (three-item scale per each independent variable) of the questionnaire measure the following 6 independent variables; perceived usefulness of ChatGPT, perceived ease of ChatGPT usage, attitude towards using ChatGPT, behavioural intention to use ChatGPT, perceived credibility of ChatGPT and perceived social influence.

On the other hand, the sections of the questionnaire were as follows; the first section was concerned with respondents' demographic characteristics, followed by a second section to explore the students' background regarding ChatGPT by asking participants about their prior knowledge of ChatGPT and their experience with using ChatGPT. Moreover, the third section aimed to assess the other factors affecting the participants' perceptions of using ChatGPT.

In this respect, respondents rated their agreement degree on a five-point Likert scale for each statement to measure the 6 constructs, with a higher number for a stronger agreement. Lastly, an open-ended question was added to this questionnaire concerning the perceived benefits of ChatGPT in the student's daily life in order to explore if they actually use this AI tool in the educational context.

### 3.4 Data collection

Before distributing the online questionnaire, a pilot study was conducted with experts working in the field of information technology, along with a number of academic faculty members for the purpose of testing questionnaire validity in the context of evaluating and addressing potential issues associated with the research design. Afterward, ethical permission from the faculty's ethical committee was taken and the students voluntarily participated in the questionnaire after being informed of the study's purpose and context.



Furthermore, students of the selected courses were asked to fill in the questionnaire after giving their consent and guaranteed that there would be no collection of personal information. Nevertheless, for the purpose of receiving honest answers that reflect reality, students were informed that there are no right and wrong answers, encouraging them to be as honest as possible.

#### 4. Results and Discussion

According to the table below, which demonstrates prior ChatGPT knowledge and past experience with ChatGPT usage, the majority of students had a prior knowledge of ChatGPT (94%) with a slightly lower percentage (76%) when it comes to their experience with using ChatGPT. However, the results showed that ChatGPT is a well-known and previously used AI tool with a relatively high percentage among Egyptian Alexandria University students.

**Table 2: Prior ChatGPT knowledge and past experience with ChatGPT usage**

Have you ever heard of ChatGPT?		<i>Freq.</i>	<i>%</i>
1.	Yes	176	93.6
2.	No	12	6.4

  

Have you ever used ChatGPT before?		<i>Freq.</i>	<i>%</i>
1.	Yes	143	76.1
2.	No	45	23.9

*The total number of respondents (n=188).*

**Table 3: Factors affecting tourism higher education students' perceptions of ChatGPT usage**

Factors	Degree of Agreement ( <i>n=188</i> )										<i>Mean</i> †	<i>Std. Deviation</i>	
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree				
	<i>F.</i>	<i>%</i>	<i>F.</i>	<i>%</i>	<i>F.</i>	<i>%</i>	<i>F.</i>	<i>%</i>	<i>F.</i>	<i>%</i>			
<b><i>Perceived usefulness of ChatGPT</i></b>													
1.	ChatGPT can help me find information quickly and easily.	1	0.5	1	0.5	9	4.8	87	46.2	90	47.9	<b>4.40</b>	<b>.659</b>
2.	ChatGPT is a valuable resource for answering my questions.	2	1.1	6	3.2	34	18.1	87	46.2	59	31.3	<b>4.04</b>	<b>.848</b>
3.	ChatGPT improves my learning ability.	3	1.6	8	4.3	36	19.1	89	47.3	52	27.7	<b>3.95</b>	<b>.885</b>
<b><i>Perceived ease of ChatGPT usage</i></b>													
1.	ChatGPT is easy to use.	1	0.5	1	0.5	22	11.7	75	39.9	89	47.3	<b>4.33</b>	<b>.744</b>
2.	ChatGPT can easily do what I want.	2	1.1	5	2.7	28	14.9	92	48.9	61	32.5	<b>4.10</b>	<b>.819</b>
3.	ChatGPT is a user-friendly tool.	1	0.5	1	0.5	38	20.2	83	44.1	65	34.6	<b>4.12</b>	<b>.778</b>
<b><i>Attitude towards using ChatGPT</i></b>													
1.	I enjoy using ChatGPT.	0	0.0	8	4.3	37	19.7	77	41	66	35.1	<b>4.07</b>	<b>.847</b>
2.	For me, using ChatGPT is fun.	0	0.0	4	2.1	46	24.5	77	41	61	32.5	<b>4.04</b>	<b>.810</b>
3.	Interacting with ChatGPT is interesting.	0	0.0	3	1.6	32	17	83	44.1	70	37.2	<b>4.17</b>	<b>.762</b>
<b><i>Behavioural intention to use ChatGPT</i></b>													

**Table 3: Factors affecting tourism higher education students' perceptions of ChatGPT usage**

Factors	Degree of Agreement ( <i>n</i> =188)										Mean <sup>*</sup>	Std. Deviation
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	F.	%	F.	%	F.	%	F.	%	F.	%		
1. I intend to use ChatGPT in the future.	0	0.0	3	1.6	29	15.4	82	43.6	74	39.4	<b>4.21</b>	<b>.756</b>
2. I plan to use ChatGPT frequently in the future.	2	1.1	6	3.2	38	20.2	84	44.7	58	30.9	<b>4.01</b>	<b>.859</b>
3. I expect to use ChatGPT more often in the future.	0	0.0	3	1.6	39	20.7	86	45.7	60	31.9	<b>4.08</b>	<b>.766</b>
<b>Perceived credibility of ChatGPT</b>												
1. ChatGPT is a trustworthy source of information.	5	2.7	14	7.5	58	30.9	65	34.6	46	24.5	<b>3.71</b>	<b>1.01</b>
2. ChatGPT provides accurate information.	2	1.1	10	5.3	63	33.5	71	37.7	42	22.3	<b>3.75</b>	<b>.899</b>
3. ChatGPT is a reliable resource.	3	1.6	17	9	47	25	82	43.6	39	20.7	<b>3.73</b>	<b>.945</b>
<b>Perceived social influence</b>												
1. My friends think that I should use ChatGPT.	1	0.5	9	4.79	33	17.5	95	50.5	50	26.6	<b>3.98</b>	<b>.827</b>
2. I believe that ChatGPT is socially acceptable.	1	0.5	5	2.7	38	20.2	85	45.2	59	31.3	<b>4.04</b>	<b>.820</b>
3. I am encouraged by others to use ChatGPT.	5	2.7	7	3.72	26	13.8	84	44.7	66	35.1	<b>4.06</b>	<b>.938</b>

\* Rating was given on a 5-point scale; whereas (1='Strongly Disagree'; 5='Strongly Agree').

On the other hand, the descriptive statistics shown in Table (3) seek to answer the first research question regarding the way that ChatGPT is being perceived among tourism higher education students. The results demonstrated a generally positive perception of the Egyptian tourism higher education students towards using ChatGPT. In this regard, the majority of participants, above 80%, approved the benefits of using ChatGPT as a valuable source for providing quick information, answering questions and improving their ability to learn.

Similarly, the same percentage of participants agreed that ChatGPT can be easily used as a user-friendly chatbot tool; which indicates that Egyptian tourism higher education students perceive ChatGPT as an easy and useful AI tool to be used. This result is consistent with several studies that prioritized ChatGPT perceived easiness and usefulness to be the most vital factors affecting ChatGPT acceptance among students (Hasanein & Sobaih, 2023; Maheshwari, 2023; Yilmaz et al., 2023; Das & J.V., 2024).

Furthermore, nearly 78% of respondents had a favorable attitude towards using ChatGPT, perceiving this chatbot as an interesting and enjoyable AI tool, which confirms the other studies' findings that agreed on the positive attitude of using ChatGPT among students in tourism higher education sector (Abdaljaleel et al., 2023; Tiwari & Bhat, 2023; Marini et al., 2023; Strzelecki, 2023; Sila et al., 2023; Das & J.V., 2024). Adding to that, a very close percentage of respondents had a positive behavioural intention and were willing to use ChatGPT in the future.

Moreover, supporting the study result of Iqbal et al. (2022), most of the participants demonstrated the relatively strong effect of others in their community on ChatGPT acceptance; since the majority approved that they are encouraged to adopt ChatGPT by others, perceiving ChatGPT as a socially acceptable tool to be used.

Surprisingly, only 27% of participants had a negative perception regarding ChatGPT credibility in terms of its trustworthiness, accuracy and reliability, with the highest percentage,

30%, of neutral responses (neither agree nor disagree). This reflects the relatively low awareness of ChatGPT's potential risks of the not updated resources, some biased answers, and sometimes, wrong or non-existent references. Consequently, this finding sheds light on the lower students' awareness of ChatGPT credibility challenges in Egypt compared to India and Malaysia in which a high percentage of students have a negative perception of ChatGPT reliability as was concluded in various studies (Cotton et al., 2023; Tiwari & Bhat, 2023; Sila et al., 2023; Yilmaz et al., 2023; Das & J.V., 2024).

On the other hand, for the purpose of answering the rest of the research questions, differences in participants' perceptions based on their gender, grade level, prior knowledge of ChatGPT and past experience with ChatGPT usage were investigated. Accordingly, unlike many studies, the findings of Table (4) clarified that participants' being male or female, has no significant effect on students' perceptions towards using ChatGPT, which is consistent with the conclusions of the authors Raman (2023), and Das and J.V. (2024) who argued that students' positive perception of ChatGPT can be not affected by their gender. Hence, the second research question regarding whether there is a significant relationship between the tourism higher education students' gender and their perceptions towards ChatGPT usage was answered.

**Table 4: The Relationship between tourism higher education students' perceptions of ChatGPT usage based on gender, grade level, prior knowledge and past experience with using ChatGPT**

Factors	Variables							
	Gender		Grade Level		Prior knowledge of ChatGPT		Past Experience with using ChatGPT	
	<i>t</i>	<i>P-Value</i> <sup>®</sup>	<i>t</i>	<i>P-Value</i> <sup>®</sup>	<i>t</i>	<i>P-Value</i> <sup>®</sup>	<i>t</i>	<i>P-Value</i> <sup>®</sup>
<i>Perceived usefulness of ChatGPT</i>	.346	.730	-1.125	.262	-.748	.456	1.227	.221
<i>Perceived ease of ChatGPT usage</i>	-.736	.463	2.423	<b>.016*</b>	.605	.546	1.980	<b>.049*</b>
<i>Attitude towards using ChatGPT</i>	.372	.711	-.131	.896	2.504	<b>.013*</b>	3.582	<b>.000***</b>
<i>Behavioural intention to use ChatGPT</i>	-.513	.608	-1.080	.282	.206	.837	-.528	.598
<i>Perceived credibility of ChatGPT</i>	.212	.833	-.666	.506	-2.96	<b>.004**</b>	-.482	.630
<i>Perceived social influence of ChatGPT</i>	.749	.455	1.106	.270	1.72	.088	.477	.634

<sup>®</sup> The calculations of Probability value are based on using the "One-Sample T-test," where \* shows a significant value at the 0.05 (\* P < 0.05, \*\* P < 0.01, \*\*\* P < 0.001) confidence level (2-tailed).

However, research findings provided the answer to the third question concerning the relationship between the grade level of tourism higher education students and their perceptions towards ChatGPT usage. Table (4) demonstrated the significant differences in how respondents perceived the easiness of ChatGPT usage across different grade levels. Students who enrolled in the IT course at the third level perceived using ChatGPT as slightly easier compared to students at the second level who enrolled in the Computer Science course ( $t = 2.423$ ,  $P < 0.05$ ), highlighting that different grade level has a significant effect only on the factor 'perceived ease of ChatGPT usage'.

Additionally, in consistency with the study results of Yilmaz et al. (2023), the findings showed that prior ChatGPT knowledge along with the past experience with using ChatGPT

affect students' perception towards ChatGPT usage. However, providing the answer to the fourth research question that investigates the relationship between tourism higher education students' prior of ChatGPT and their perceptions towards using this AI chatbot, it was revealed that the variable 'prior knowledge of ChatGPT' had a significant positive effect on students' attitude towards using ChatGPT ( $P < 0.05$ ); meaning that students with prior knowledge of ChatGPT perceive this AI tool as a fun enjoyable and interesting tool. Adding to that, the same factor had a stronger significant effect on the credibility of ChatGPT ( $t = -2.96, p < 0.01$ ). This conclusion confirms the study results of Yilmaz et al. (2023)

Accordingly, this reveals that Egyptian tourism higher education students who had not known ChatGPT before perceived ChatGPT as an accurate trustworthy and reliable resource of information, unlike students with a prior knowledge of ChatGPT who perceived this AI tool with a lower credibility. Nevertheless, this result was evident in the statistical analysis discussed earlier in this section, which confirms the survey's validity.

Regarding answering the fifth and last research question concerning whether there is a significant relationship between tourism higher education students' past experience with using ChatGPT and their perceptions of ChatGPT usage, it was concluded that the variable 'past experience with using ChatGPT' had a significant positive effect on tourism higher education students' perceptions of using ChatGPT in terms of attitude towards ChatGPT usage ( $P < 0.001$ ) and its perceived easiness ( $P < 0.05$ ), supporting the study results of Iqbal et al. (2022). Consequently, this result emphasizes the importance of the previous experience of actual technology usage in accepting and perceiving it.

Notably, the significant relationship between the prior usage of ChatGPT and the positive attitude towards using this tool had the strongest effect ( $p = 0.000$ ) over the rest of the factors with the highest significance level. Nevertheless, a positive attitude does not always reflect a positive behavioural intention.

However, it is worth mentioning that the perceived ChatGPT usefulness and social influence of ChatGPT, along with students' behavioural intentions to adopt ChatGPT in the future were not affected by the different students' gender, grade level, or even by their prior ChatGPT knowledge and past experience with using ChatGPT.

Additionally, when students were asked about their perceived ChatGPT benefits in their daily life at the purpose of digging deep into their perceptions of ChatGPT, it was found that students rely on ChatGPT in searching for food recipes, planning their trips, suggesting daily activities, recommending movies and books.

In the educational context, the majority of students emphasized the role of ChatGPT, as a quicker and easier tool, in facilitating their university tasks such as generating creative ideas for the graduation projects and main points to be discussed in the required assignments, while others mentioned the ChatGPT importance in making assignments and paraphrasing essays, along with its capability in translation, checking grammar and preparing presentations. Generally, it can be noted that students perceive ChatGPT as a friend who can answer any question at any given time. Hence, the participants' responses supported the answer to the first research question.

## 5. Conclusions, Recommendations and Further Research

In conclusion, the research purpose was to investigate the tourism higher education students' perceptions of using ChatGPT, exploring the differences in perceptions according to their gender, grade level, prior knowledge of ChatGPT and past experience with using ChatGPT. The research results demonstrated the positive perceptions of Egyptian tourism higher education students towards using ChatGPT, concerning its credibility and trustworthiness. In general, it was concluded that the Egyptian tourism higher education students' gender doesn't have any significant effect on the factors affecting their ChatGPT usage perceptions. Nevertheless, this conclusion is limited by the higher percentage of females in the sample. Moreover, it was revealed that the perceived ChatGPT usefulness and the social influence positively contribute to the students' ChatGPT acceptance regardless of their gender, grade level, prior knowledge and experience with using ChatGPT.

However, Egyptian tourism higher education students' grade level and their past experience with ChatGPT usage significantly affect their perceptions in terms of the easiness of ChatGPT usage. Furthermore, Egyptian tourism higher education students with previous knowledge of ChatGPT, and further, who had past experience with using this tool have a favorable attitude towards using ChatGPT. Notably, the previous knowledge of ChatGPT negatively affects Egyptian tourism higher education students' perception of ChatGPT credibility.

Additionally, it should be mentioned that a relatively low proportion of the participants had concerns regarding the ChatGPT credibility issue which reflects either their narrow knowledge of ChatGPT or their ignorance of the reliability of resources they might use. Nevertheless, this conclusion emphasizes that Egyptian tourism higher education students need to raise their awareness regarding the importance of assuring their resources' credibility.

In light of the research conclusions, it is clear that the evolving digital environment and launching of various AI tools including ChatGPT are undeniable. Also, it can be said that ChatGPT holds a significant promise for shaping the future of tourism higher education through personalized learning experiences. At the same time, despite the challenges posed by ChatGPT in tourism higher education, banning ChatGPT usage cannot be successfully implemented and controlled. Generally, eliminating the technology is not a practical solution.

Consequently, the role of human creativity is vital for exploring how to effectively employ ChatGPT in order to enhance the process of tourism higher education and student assessment. Therefore, there is a need for adaptation at Egyptian tourism higher education institutions. In this context, the research suggests that educators and decision-makers should consider some educational adjustments, coping with the current technological advancements by integrating the Egyptian tourism higher education students' knowledge with a ChatGPT tool.

In this regard, embracing ChatGPT and similar automated tools as student assistants in tourism higher education for enhanced learning outcomes, prioritizing the ethical considerations through clear guidelines, would eliminate ChatGPT's disadvantages. Accordingly, Egyptian tourism higher education students need to be aware that the accuracy of information provided by ChatGPT cannot be guaranteed in the context of raising students'



awareness about the advantages and risks associated with chatbots, as well as emphasizing the importance of developing their knowledge and skills.

In another context, Egyptian students' critical thinking, problem-solving and writing skills could be improved in tourism higher education by asking them to present more complicated essays, linking students' knowledge, experiences and points of view. Additionally, encouraging alternatives to traditional assignments such as debates and interviews could be another way of effective learning. Furthermore, training students on evaluating ChatGPT's answers in a required assignment would help raise practically their awareness of challenges associated with ChatGPT and other AI tools.

Generally, integrating the role of ChatGPT or other similar AI tools into the students' assignments or research methodology would reflect accountability and promote transparency in their work. It can be used even as an inspirational tool for generating innovative ideas. Nonetheless, it's crucial to be able to detect content generated by ChatGPT in higher education.

In this respect, there's a necessity to train instructors to identify ChatGPT-generated content and evaluate assignments accordingly by checking references and noticing the writing style. Moreover, it's essential to validate the ChatGPT outcomes with additional sources of evidence. However, clear ChatGPT mechanisms would allow users to comprehend the model's processes and evaluate its outputs effectively.

On the other hand, since the research results could not be generalized – as per discussed earlier – due to the study limitations, further studies on ChatGPT adoption in different tourism higher education institutions in Egypt are required in scholarly research in order to explore Egyptian students' perceptions in similar cultural contexts and highlight their motivations for using ChatGPT in tourism higher education. Moreover, conflicting findings regarding the effect of gender disparity on students' perceptions towards using ChatGPT in several studies raise the need for more investigation in future research.

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## إستكشاف تصورات طلاب التعليم العالي السياحي تجاه إستخدام ChatGPT

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### ملخص البحث

لقد إكتسبت أداة ChatGPT مؤخرًا إنتشارًا في مجالات متنوعة، بما في ذلك مجال التعليم العالي، بإعتبارها أداة روبوت دردشة متطورة تعمل بشكل مشابه للإنسان، و توفر إستجابات فورية في سياق المحادثات الإفتراضية. يهدف هذا البحث إلى إستكشاف تصورات طلاب التعليم العالي السياحي حول إستخدام أداة ChatGPT. و بناءً على ذلك، تم إستخدام المنهج الكمي عن طريق توزيع إستمارات استبيان عبر الإنترنت بهدف بحث تصورات الطلاب نحو إستخدام أداة ChatGPT، و دراسة التغيرات في هذه التصورات بناءً على جنس الطلاب، مستوهم الدراسي، معرفتهم المسبقة بأداة ChatGPT، بالإضافة إلي خبرتهم السابقة مع إستخدام أداة ChatGPT. تم جمع البيانات في فصل الخريف من العام الأكاديمي ٢٠٢٣-٢٠٢٤، و شملت عينة من طلاب مصريين بكلية السياحة والفنادق بجامعة الإسكندرية. أظهرت نتائج البحث أن المشاركين لديهم تصور إيجابي نحو إستخدام أداة ChatGPT، مع وجود مستوي أقل نسبيًا من المخاوف الخاصة بموثوقية المعلومات. و خُتم البحث بمناقشة أهم نتائج البحث وإلقاء الضوء على كيفية تصور الطلاب لأداة ChatGPT، بالإضافة إلي تقديم رؤى حول السياسات الفعالة لإعتمادها كأداة ذكاء إصطناعي في مؤسسات التعليم العالي السياحية المصرية.

**الكلمات المفتاحية:** الذكاء الاصطناعي، ChatGPT، التعليم العالي السياحي، تصورات الطلاب، قبول التكنولوجيا.