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Exploring Moroccan Teachers' Perspectives on Integrating ChatGPT into Higher Education Curriculum

Fatima Chahboune
Applied Language and Culture Studies Lab, Chouaib Doukkali University, Morocco
chahboune.f332@ucd.ac.ma

Hicham Zyad
Applied Language and Culture Studies Lab, Chouaib Doukkali University, Morocco
zyad.h@ucd.ac.ma

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Abstract

This study explores Moroccan teachers' perspectives on ChatGPT-Assisted Language Teaching in higher education. It examines the various factors and barriers influencing the integration of ChatGPT into teaching practices. This study is framed within Technology Acceptance Model (Davis,1989). TAM encompasses the constructs that this study aims at exploring: Perceived usefulness (PU), perceived ease of use (PEU), perceived risk (PR), attitude and actual use (ChatGPT practices). An online questionnaire was administered to 50 professors in different Moroccan universities. Descriptive statistics show that most professors hold favorable perceptions of integrating ChatGPT in teaching practices. Notably, key barriers to ChatGPT adoption include ethical concerns, lack of training, and insufficient AI knowledge. Correlational analysis shows that PU and PEU significantly influence the actual use of ChatGPT. In contrast, there is no significant correlation between perceived risk and use. This study suggests that offering AI-training programs could enhance the integration of ChatGPT in Moroccan academia.

1. INTRODUCTION

With the remarkable advancements of Artificial Intelligence (AI) tools. The landscape of teaching methodologies has witnessed significant transformation. The use of AI technologies, particularly, ChatGPT, has supported the traditional teaching methods and techniques, shifting towards student-centered approach (Daza, Angulo, Lozada,2024). Notably, a rapid review of the literature by Chung Kwan Lo (2023) analyzed 50 relevant articles, focusing on the impact of ChatGPT on education. The findings revealed ChatGPT holds significant potential as an effective instructional assistant, particularly in designing the educational content, creating assessments tasks, evaluating student performance. In the same vein, Kostka and Toncelli (2023) investigated the incorporation of ChatGPT into English language teaching and its importance in improving teachers' professional skills. The study showed that ChatGPT enhances academic integrity and support scholarly publication for teachers. Also, Iryna et al., (2024) found that ChatGPT helps ESP teachers achieve easy and quick information retrieval, overcome communication breakdowns for students, and offer interactive classroom activities.

After reviewing the international literature, it is noticed that a growing body of research sheds light on the opportunities and challenges of ChatGPT in the educational practices and outcomes (Sallam et al., 2024; Malik et al., 2023; Abbas, Jam, Khan, 2024; Klimova, Pikhart, AL-Obaydi, 2024; Shehri et al., 2023; Salwa, Tyas, 2024; Pinzolits, 2023; Sandu, Gide, Elkhodr, 2024; Mugableh, 2024; Duenas, Jimenez, Ferro, 2023; Espartinez, 2024; Losi et al., 2024 ; AlAfnan, Mohdzuki, 2023; Hosseini et al., 2023; Chinonso, Mfon-Ette Theresa, Caroline Aduke, 2023; Nugroho et al., 2023; Werdiningsih et al., 2024; Abbas et al., 2024; Al-Bukhrani et al., 2025)). However, there is little of research that addresses teachers' perceptions towards implementing ChatGPT in curriculum at the tertiary level. Addressing this gap in the literature is crucial for understanding how teachers perceive the integration of ChatGPT in teaching practices in higher education context.

In Moroccan educational context, the strategic vision (2015-2030) calls for the integration of technology at all cycles of education. "This can be achieved by the implementation of digital and interactive tools in the teaching/ learning process as well as research and innovation endeavours" (Zyad, 2017). In the same vein, the incorporation of AI into some Moroccan schools is a sign of a new era in education and it is a paradigm shift from traditional educational techniques to modern ones. ''Traditional educational models in Morocco, characterized by rote learning and one-size-fits- all teaching approaches, are being reevaluated in the light of AI technology's potential for personalized and interactive learning experiences'' (Alami, ELIdrissi,2022).While numerous studies in the national literature have explored the integration of AI in education from a general perspective (Ezzaim, Kharroubi, Dahbi, Aqqal, Haidine, 2022; Ezzaim, Dahbi, Aqqal, Haidine, 2024; Dauali, Selmaoui, Bouab, 2022; Boudine, Sajid, Bentaleb, Tayebi, ELkarfa, 2024; Fakhar, Lamrabet, Echantoufi, EL Khattabi, Ajana, 2024; Adaoui, 2024; Moukhliss, Lahyani, Diab,2024; Bekou, Ben Mhamed, Assissou,2024; Boubker, Ben-Saghroune, Elbourassi, Abdessadek, Sabbahi, 2024; Zaibout, Madrane,2024;El Mnouer, Katfi and Katfi, Mirhari,2023; Lafram, Bahji,2024; ElGourari, et al., 2024; Talib, Housni, Radid,2023; Berkaoui, Mansouri,2024; ElAlami, Terrada,2024), they overlook how teachers specifically perceive and adapt to the integration of ChatGPT within the curricula.

Addressing this gap, this study aims to explore Moroccan teachers' perspectives on integrating ChatGPT into higher education curriculum through the lens of Technology Acceptance Model (TAM). To achieve this ultimate goal, the study pursues three specific objectives: (1) to explore the factors that influence Moroccan professors' use of ChatGPT in language teaching; (2) to identify the barries that hinder the incorporation of ChatGPT into the Moroccan higher education curriculum from professors' perspectives; (3) to examine correlation between professors' use of ChatGPT and their Perceived Usefulnes(PU) and Perceived Ease of Use (PEU). Based on the above objectives, research questions are formulated :

1. What are the Moroccan teachers' perspectives on integrating ChatGPT in Moroccan higher education in curriculum ?
2. What factors influence Morroccan Professors' use of ChatGPT in language teaching ?
3. What are the barriers that hinder the incorporation of ChatGPT into the Moroccan higher education curriculum ?
4. Is there any correlation between professors' use of ChatGPT and their Perceived Usefulnes(PU) and Perceived Ease of Use (PEU) ?

2. LITERATURE REVIEW

2.1. Theoretical FrameWork: Technology Acceptance Model (TAM)

This study adopts Technology Acceptance Model (TAM). Figure (1) shows that TAM comprises five principal constructs: Perceived usefulness, perceived ease of use, attitude, behavioral intention and actual use. In the model, perceived ease of use and usefulness of technology predict attitudes toward and intention to use technology. Davis (1989) defines the construct of ease of use as ‘’ the degree to which a person believes that using a particular system would be free of effort’’. Usefulness can be defined as the users’ perception as to the benefits that can be obtained from the implementation of a given technology (as cited in Zyad, 2016, pp.8-9). Simply put, if technology is perceived as effortless, the user would deem it useful. These two constructs have impact on attitude toward using technology. That is, they cause the user to develop positive or negative attitude toward technology. As a result, the attitude is directly linked to the behavioral intention to use the innovative tool. If the user hold a positive attitude toward the technology, they are more likely to engage in the actual behavior with that technology. Indeed, TAM is an established framework for understanding the enabling factors of technology acceptance and use as shown in figure (1):

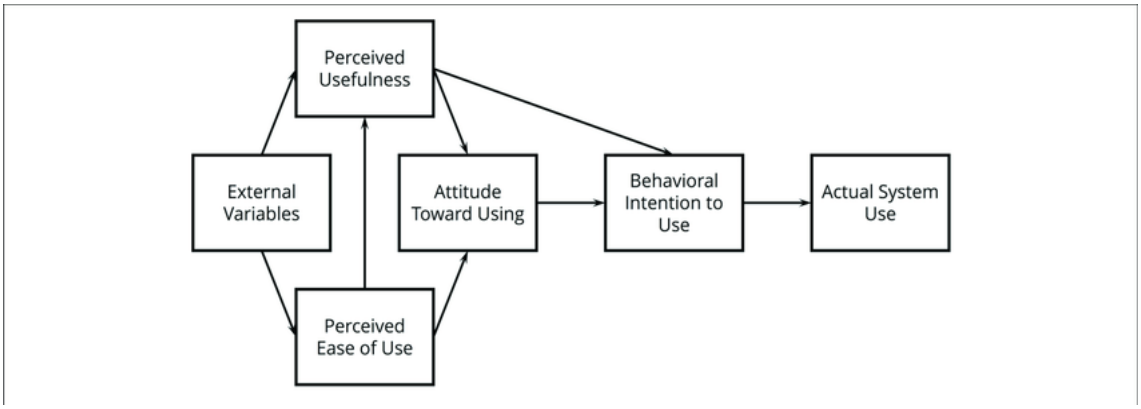

Figure 1. Technology Acceptance Model (Adapted from Davis, Bagozzi &Warsaw, 1989, p.985)

2.2 Factors Influencing ChatGPT Adoption in Education

Adoption of ChatGPT in higher education is influenced by a variety of factors that shape users’ perceptions and intentions. According to Sallam et al., (2024), several factors influence the adoption of ChatGPT among university students in the United Arab Emirates. These factors include perceived usefulness, lower perceived risk, reduced anxiety, perceived ease of use, and a stronger influence of social factors. In simple terms, perceived usefulness means students find ChatGPT beneficial for their academic tasks, while lower perceived risk means they feel comfortable and safe using it. Additionally, ChatGPT fosters an anxiety-free learning environment supported by both teachers and peers. Another study by Yang, Goh, Dai, (2023) confirmed the importance of certain factors in technology adoption. They found that perceived usefulness and perceived ease of use are significant predictors of learners’ intentions to use ChatGPT. Similarly, Scherer et al., (2019) conducted a comprehensive synthesis of over 100 studies involving more than 34, 000 teachers. The findings asserted that perceived usefulness (PU) and perceived ease of use (PEU) are key determinants of teachers’ behavioral intention to use technology.

In line with the former study' findings on technology adoption, a recent study by Shahzad, Xu and Javed (2024) investigated the awareness, acceptance, and adoption of ChatGPT in higher education across China using the TAM conceptual framework and extending it by incorporating perceived intelligence as a predictor. The study found that ChatGPT awareness significantly influences the intention to adopt it. Perceived ease of use, usefulness, and intelligence significantly mediated the association between ChatGPT awareness and the intention to use it. These results underscore the crucial role of awareness in technology adoption, and how perceptions of usefulness and intelligence shape users' intentions. Building on these insights, a recent study by Duong et al., (2023) explored how performance expectancy and effort expectancy directly affect students' intentions and actual use of ChatGPT using the Technology Acceptance Model (TAM) to explain these factors.

2.3. Major AI Challenges in Morocco

According to Lafram and Bahji (2024), the main challenges can be described as follows: A key challenge for an effective AI ecosystem in Morocco is the need for comprehensive AI training. The authors also highlighted additional challenges, including insufficient technological and digital infrastructure essential to promote and support AI systems and projects. Another significant challenge is ethical considerations, particularly the lack of specific standards and guidelines for AI in the Moroccan context. They also pointed out the importance of ensuring inclusive and equitable access to AI to guarantee equitable access to AI and prevent discrimination. Furthermore, fostering innovation and competitiveness in education is essential, so Morocco should continue encouraging innovative tools and supporting the development of cutting-edge technologies to remain competitive on the global world. Data protection and privacy are also major concerns, requiring stronger measures to ensure information security. Finally, adapting of AI solutions to reflect Morocco's cultural nuances is crucial for better acceptance and effectiveness. Indeed, a well -contextualized adaptation of AI improves its acceptance and effectiveness. This means that the integration of technologies needs to embrace the Moroccan cultural diversity.

3. METHODOLOGY

3.1. Research design

In this study, a **quantitative research approach** is employed due to the nature of the research problem, the characteristics of the instruments, the type of data gathered, and the sampling method used. In a quantitative study, the research problem is best targeted by identifying the factors and variables that influence an outcome (Creswell, 2009). Here, the aim of this study is to explore the factors, influencing the acceptance and use of ChatGPT within the Moroccan higher education curriculum, incorporating TAM. Another reason for adopting a quantitative research approach stems from the need to empirically validate the theoretical framework (TAM), as well as to build on existing literature (Creswell, 2009). In the quantitative method, data are in forms of numbers, numerical, where there is detachment from the researcher because they are seen as individual facts that cannot be modified or interpreted (Jamiai, 2018).

This present study adopts a **correlational research design.** According to Creswell

et al.,2023), correlational research provides an opportunity to predict outcomes and understand relationships among variables. It is non-experimental, meaning the researcher does not attempt to manipulate the variables, but tries to observe and analyze patterns of association. Similarly, this present study explores the relationship between TAM constructs and users' perceptions and acceptance of ChatGPT.

3.2. Research Instrument

An online questionnaire was administered to 50 professors in different Moroccan universities. The widespread use of questionnaires in quantitative research is due to their ability to produce measurable data (Kothari, 2004). In this study, the questionnaire method was used to measure the relationships between TAM constructs. Notably, the questionnaire in this research was built upon the fundamental structures of the TAM model by Davis et al. (1989). The questionnaire is divided into four main parts. The first part introduces demographic information: age, gender, university affiliation, teaching experience. The second part presents teachers' perceptions towards using ChatGPT in higher education curriculum. Here, the researcher used a 5-point likert scale questionnaire type ranging from 5 (strongly agree) to (strongly disagree). "Likert scale items allow for the generation of percentages, thereby quantifying results and causing better visibility of results and ease of comparisons" (Zyad, Bouchaib, Laaboudi and Yeou, 2023, p.125). The third part demonstrates the use of ChatGPT in teaching practices. Here, the researcher collects professors' insights and opinions about the actual use of ChatGPT in their teaching profession. In doing so, a 5-point likert scale questionnaire type ranging from 5 (strongly agree) to (strongly disagree) was used. Lastly, the fourth part includes barriers that impact teachers' integration of ChatGPT in language teaching. A 5-point likert scale questionnaire type ranging from 5 (high impact) to 1 (no impact) was used.

3.3. Participants

50 EFL Professors in different Moroccan universities take part in the present study. They teach in these universities: Sidi Mohammed Ben Abdellah University, Chouaib Doukkali University, Ecole Normal Supérieur El Jaddida, Ecole Normal Supérieure de Rabat, Hassan II University, Hassan I university, Ibn Tofail University, Cadi Ayad University, Mohammed V University. The participants' ages ranged from 31 to 50 years old. It should be noted that the majority of the sample were novice professors in the teaching experience.

3.4. Data Collection Procedure

The internet survey was used and administered online, using Qualtrics. "Using an internet survey and administering it online has been discussed extensively in the literature" (Creswell and Creswell,2023). The present study adopted the purposive sampling technique. In his book, Kothari (2004) explains purposive sampling technique as a non-probability technique where researchers select individuals based on specific characteristics relevant to the research objective.

3.5. Data Analysis Tools

Descriptive statistics (means, standard deviation, frequencies and percentages) were used to measure the participants' perceptions and acceptance of technology. Inferential statistics were used, specifically, Spearman's rank correlation, a non-parametric test. Here,

spearman's rank correlation was employed to examine the relationship between Technology Acceptance Model (TAM) constructs.

3.6. Reliability of the research instrument

The reliability of the research instrument was assessed using Cronbach's alpha. This ensures the consistency of the results. Table (1) below illustrates the Cronbach's alpha values for the research instruments.

Table1. Cronbach's coefficient alpha for the study constructs

Scale	Cronbach's Alpha	Number of Items	Valid Cases (N)
Perceived Usefulness (PU)	0.743	4	50
Perceived Ease of Use (PES)	0.769	4	50
Perceived Risk (PR)	0.769	4	50
The Use of ChatGPT in Teaching	0.900	4	50
Barriers	0.916	9	50

The table (1) above demonstrates that all scales exhibit acceptable to excellent internal consistency, as measured by Cronbach's Alpha. The values range from 0.743 to 0.916, indicating that the items within each scale are consistently measuring their intended constructs.

The Perceived Usefulness (PU) scale has a Cronbach's Alpha of 0.743, which falls within the acceptable range. This suggests that the items designed to assess the usefulness of the subject under study are adequately reliable. Similarly, the Perceived Ease of Use (PES) scale and the Perceived Risk (PR) scale both have a reliability coefficient of 0.769, reflecting good internal consistency. These values indicate that the constructs of ease of use and risk perception are measured reliably and that the items within each scale provide consistent responses across participants. A notably high reliability score is observed for the Use of ChatGPT in Teaching scale, which has a Cronbach's Alpha of 0.900. This suggests that the items within this scale are highly consistent and effectively capture the perceptions surrounding the integration of ChatGPT in educational settings. The highest reliability score in the study is found in the Barriers scale, which has a Cronbach's Alpha of 0.916. This exceptionally high value indicates that the items measuring barriers to using ChatGPT in teaching are strongly correlated and form a well-structured and reliable scale.

Overall, the reliability scores confirm that the measurement instruments used in this study are robust and internally consistent. With all Cronbach's Alpha values exceeding the 0.7 threshold, the scales demonstrate strong reliability, ensuring that the findings derived from these measurements are dependable and accurately reflect the constructs under investigation. The particularly high reliability scores for the Use of ChatGPT in Teaching and Barriers scales suggest that these aspects are well-defined and consistently perceived by respondents.

4. RESULTS AND DISCUSSION

4.1 Demographic Information

This section presents an overview of the participants' demographic characterestics, including age, gender, teaching experience, and university affiliation.

Table (2) below shows the age distribution. Here, The majority of respondents belong to the 31-40 age group (52%), indicating that the sample is composed primarily of mid-career professionals.

A smaller proportion, 16%, are younger than 30, suggesting a presence of early-career educators or newly recruited faculty members. Meanwhile, 18% are aged 41-50, and 14% are over 50, reflecting a mix of experienced professionals and senior faculty members. This distribution highlights that the academic workforce represented in this study is predominantly young to middle-aged.

Table 2. Age Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 30	8	16.0	16.0	16.0
	31-40	26	52.0	52.0	68.0
	41-50	9	18.0	18.0	86.0
	Over 50	7	14.0	14.0	100.0
	Total	50	100.0	100.0	

Table (3) below demonstrates gender distribution. The sample consists of 50 participants, evenly distributed between males (50%) and females (50%), ensuring a balanced gender representation.

Table3. Gender Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	25	50.0	50.0	50.0
	Female	25	50.0	50.0	100.0
	Total	50	100.0	100.0	

Regarding teaching experience, table (4) below illustrates professors' teaching experience. A notable 58% of respondents have less than 5 years of teaching experience, indicating that the majority of the sample consists of relatively new professors in higher education. Meanwhile, 20% have 5-10 years of experience, suggesting they have already gained significant teaching expertise. More experienced professors make up a smaller portion of the sample, with only 6% having 11-20 years of experience, and 16% having more than 20 years. This suggests that the majority of the surveyed population is still in the early or mid-stages of their academic careers

Table 4. Teaching Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 years	29	58.0	58.0	58.0
	5-10 years	10	20.0	20.0	78.0
	11-20 years	3	6.0	6.0	84.0
	More than 20 year	8	16.0	16.0	100.0
	Total	50	100.0	100.0	

Concerning the university affiliation, the affiliation table (5) below displays the distribution of participants' university affiliations in the study. The highest number of participants is from Hassan II

University, with 13 individuals, representing 26% of the total sample. This is followed by Ibn Tofail University, with 8 participants (16%), and Mohammed V University, with 7 participants (14%). Sidi Mohammed Ben Abdellah University contributes 5 participants (10%) to the dataset. Other universities, such as École Normale Supérieure de Rabat, Chouaib Doukkali University, Hassan I University, and Cadi Ayyad University, account for smaller proportions of the sample, ranging from 2% to 8%. The Others category, representing institutions not specifically listed, contains 9 participants, making up 18% of the total. The cumulative percentage reaches 100%, indicating that all participants' affiliations are captured within the table. This data provides a clear overview of the variety of university affiliations represented in the study sample.

Table 5. Affiliation		**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Sidi Mohammed Ben Abdellah university	5	10.0	10.0	10.0
	Chouaib Doukkali University	1	2.0	2.0	12.0
	Ecole Normal Superrieur Eljaddida	1	2.0	2.0	14.0
	École Normale Supérieure de Rabat	4	8.0	8.0	22.0
	Hassan I University	1	2.0	2.0	24.0
	Hassan II University	13	26.0	26.0	50.0
	Ibn Tofail University	8	16.0	16.0	66.0
	Cadi Ayyad University	1	2.0	2.0	68.0
	Mohammed V University	7	14.0	14.0	82.0
	Others	9	18.0	18.0	100.0
	Total	50	100.0	100.0	

4.2. Descriptive Statistics

4.2.1. Professors' Perceptions

The descriptive statistics presented in the table (6) below provides an overview of the data collected regarding Moroccan higher education professors' perceptions of using ChatGPT in teaching, based on the Technology Acceptance Model (TAM). The variables in this study include Perceived Usefulness (PU), Perceived Ease of Use (PEU), Perceived Risk (PR), Use (actual usage of ChatGPT). For Perceived Usefulness (PU), the mean score is 3.6400, with a standard deviation of 0.98737. This suggests that, on average, professors moderately perceive ChatGPT as useful in their teaching practices. The range of responses, from a minimum score of 1.00 to a maximum of 5.00, indicates variability in opinions, with some professors rating it as less useful and others highly useful.

The Perceived Ease of Use (PEU) variable has a mean of 3.5350 and a standard deviation of 0.81911. This implies that professors, on average, find ChatGPT somewhat easy to use, but there is still some variability in their experiences. The range of responses, from a minimum of 1.00 to a maximum of 5.00, further reflects differing levels of perceived ease of use among participants. The Perceived Risk (PR) mean is 3.6950, with a standard deviation of 0.83954. This indicates that professors, on average,

perceive a moderate level of risk in using ChatGPT for teaching. The variability in responses, with scores ranging from 1.00 to 5.00, suggests that while some professors view the technology as riskier, others are more confident in its use. The use variable reflects Moroccan higher education professors' perspectives on the application of ChatGPT in teaching, and the items associated with this variable provide specific insights into various aspects of its use in educational practices The mean score of 3.5044 for the use variable suggests that, on average, professors have a moderately favorable view of incorporating ChatGPT into their teaching methods. This perception is based on the specific items that examine different dimensions of its functionality and effectiveness in the classroom.

Table6. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PU	50	1.00	5.00	3.6400	.98737
PEU	50	1.00	5.00	3.5350	.81911
PR	50	1.00	5.00	3.6950	.83954
Use	50	1.89	5.00	3.5044	.85278
Valid N (listwise)	50				

4.2.2. Barriers to the Integration of ChatGPT in Language Teaching

These barriers encompass ethical concerns, lack of adequate training, cultural appropriateness, equipment availability, and insufficient knowledge of artificial intelligence.

a. Ethical Concerns

Table (7) below shows the ethical concerns barrier. A significant portion of professors (38%) perceived this barrier as having a significant impact, with an additional 20% indicating a high impact. Conversely, a smaller group of professors (10%) reported that this issue had no impact on their integration of ChatGPT. The remaining professors showed varying degrees of concern, with 12% reporting a moderate impact and 20% a low impact. This data suggests that while many professors are concerned about the ethical implications of AI replacing human educators, the perception of this barrier is not universal, with some indicating it has minimal effect.

Table 7. Ethical Concerns (the substitution of human teachers)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Impact	5	10.0	10.0	10.0
	Low Impact	10	20.0	20.0	30.0
	Moderate Impact	6	12.0	12.0	42.0
	Significant Impact	19	38.0	38.0	80.0
	High Impact	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

b. Lack of Adequate Training

The barrier of lack of adequate training in the use of ChatGPT reflects a more pronounced issue for professors. Both significant impact and high impact responses are notably high, with 28% of professors indicating each level of impact. Additionally, 18% report a moderate impact, suggesting that a majority of professors feel insufficiently trained in using ChatGPT. Only 12% of participants reported no impact,

and 14% perceived low impact. This suggests that a substantial proportion of professors are likely facing challenges in terms of training, which could hinder the widespread adoption of ChatGPT in language teaching (see table 8).

Table 8. Lack of adequate training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Impact	6	12.0	12.0	12.0
	Low Impact	7	14.0	14.0	26.0
	Moderate Impact	9	18.0	18.0	44.0
	Significant Impact	14	28.0	28.0	72.0
	High Impact	14	28.0	28.0	100.0
	Total	50	100.0	100.0	

c. Lack of Cultural Appropriateness

Table (9) below shows that 32% of professors indicated that lack of cultural appropriateness barrier had a high impact on their integration of ChatGPT, with another 24% reporting a significant impact. In total, 56% of professors viewed this as a considerable obstacle. On the other hand, only 10% of professors reported no impact and 12% reported low impact. The moderate responses (22%) suggest that while a majority of professors may be concerned with cultural and human factors, some perceive these issues to be of lesser importance or not impactful in their specific teaching contexts.

Table 9. Lack of Cultural Appropriateness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Impact	5	10.0	10.0	10.0
	Low Impact	6	12.0	12.0	22.0
	Moderate Impact	11	22.0	22.0	44.0
	Significant Impact	12	24.0	24.0	68.0
	High Impact	16	32.0	32.0	100.0
	Total	50	100.0	100.0	

d. Lack of Equipement

Table (10) below shows that 30% of professors rated this barrier as having a high impact, while 28% saw it as having a significant impact. Additionally, 24% of participants perceived it as a moderate impact. However, 14% felt that the lack of equipment had a low impact, and 4% reported that it had no impact.The findings indicate that technological infrastructure might still be an area of concern for many Moroccan professors.

Table 10. Lack of equipment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Impact	2	4.0	4.0	4.0
	Low Impact	7	14.0	14.0	18.0
	Moderate Impact	12	24.0	24.0	42.0
	Significant Impact	14	28.0	28.0	70.0
	High Impact	15	30.0	30.0	100.0

Total	50	100.0	100.0	

e. Insufficient Knowledge of Artificial Intelligence

Finally, insufficient knowledge of artificial intelligence among teachers is perceived as one of the most significant barriers to the integration of ChatGPT, with 44% of professors indicating a high impact and 34% reporting a significant impact. This suggests that a majority of professors feel that the lack of understanding of AI is a major hindrance to its use in teaching. Only 4% of professors stated that this was of no impact, and 8% reported low impact, further indicating that the lack of knowledge is a substantial challenge. The remaining 10% of professors indicated a moderate impact (see table (11) below).

4.3. Inferential Statistics

4.3.1. Factors Influencing the Use of ChatGPT in Teaching Among Moroccan Higher Education Professors

In this section, the researchers examined the correlation between the factors influencing the use of ChatGPT in teaching among Moroccan university professors. Notably, These factors align with the Technology Acceptance Model (TAM), which suggests that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are critical determinants in the adoption of technology. **a. Perceived Usefulness (PU) and the Use of ChatGPT**

The Perceived Usefulness (PU) of ChatGPT was found to be a significant predictor of its actual use in teaching. Professors who perceive ChatGPT as a useful tool are more likely to adopt it in their classrooms. The moderate positive correlation between PU and Use ($r = 0.642$, $p < 0.01$) indicates that the more professors believe ChatGPT can enhance their teaching, the more likely they are to integrate it into their practices. This finding aligns with TAM, which posits that **PU** directly influences technology acceptance and usage

b.Perceived Ease of Use (PEU) and the Use of ChatGPT

Similarly, Perceived Ease of Use (PEU) was found to be a strong predictor of Use ($r = 0.715$, $p < 0.01$). This means that professors who perceive ChatGPT as easy to use are more likely to adopt it in their classrooms. This result further aligns with TAM, which asserts that the easier a technology is to use, the more likely it is to be embraced by users.

c. Perceived Risk (PR) and the Use of ChatGPT

In contrast to PU and PEU, Perceived Risk (PR) did not show a significant correlation with Use ($r = -0.002$, $p = 0.991$). This indicates that concerns about the risks associated with using ChatGPT, such as ethical concerns or the potential for replacing human teachers, do not appear to influence Moroccan professors' actual use of the technology. This finding suggests that, despite potential reservations about the risks of AI in education, these concerns do not significantly hinder the adoption of ChatGPT. This result is somewhat surprising, as PR is often a significant factor in the technology adoption process, but it may reflect a broader openness to AI tools among Moroccan professors, or it could indicate that the practical benefits of ChatGPT outweigh perceived risks.

Having examined these key factors, the following figure (2) illustrates the Pearson correlation between them and the use of ChatGPT.

		PU	PEU	PR	Use
PU	Pearson Correlation	1	.789**	.196	.642**
	Sig. (2-tailed)		.000	.173	.000
	N	50	50	50	50
PEU	Pearson Correlation	.789**	1	.179	.715**
	Sig. (2-tailed)	.000		.213	.000
	N	50	50	50	50
PR	Pearson Correlation	.196	.179	1	-.002
	Sig. (2-tailed)	.173	.213		.991
	N	50	50	50	50
Use	Pearson Correlation	.642**	.715**	-.002	1
	Sig. (2-tailed)	.000	.000	.991	
	N	50	50	50	50

****. Correlation is significant at the 0.01 level (2-tailed).**

Figure2. Pearson Correlation

d. TAM Alignment with Findings

Model (TAM). TAM suggests that the two primary factors influencing technology adoption are Perceived Usefulness (PU) and Perceived Ease of Use (PEU). In the context of this research, both PU and PEU are significant predictors of Use, with PEU having a slightly stronger effect. This aligns with TAM's assertion that ease of use can have a powerful impact on users' decisions to adopt technology. The moderate correlations between PU, PEU, and Use support the idea that when professors perceive ChatGPT as both useful and easy to use, they are more likely to integrate it into their teaching practices.

Additionally, the lack of significant correlation between PR and Use deviates from the typical TAM framework, where Perceived Risk often plays a role in adoption. This findings suggest that for Moroccan professors, other factors like the usefulness and ease of use of ChatGPT may outweigh concerns about potential risks. This could imply that, in the Moroccan higher education context, the perceived benefits of ChatGPT in enhancing teaching practices are seen as more important than the risks associated with its use.

5. CONCLUSIONS AND RECOMMANDATIONS FOR PRACTICE

Based on the findings of the present study, it should be proposed that integrating AI tools like ChatGPT into Moroccan higher education curriculum is essential. Notably, Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are the primary factors influencing the Use of ChatGPT in Moroccan higher education. These findings align strongly with the Technology Acceptance Model (TAM), which emphasizes the importance of these two factors in determining technology adoption. The lack of a significant relationship between Perceived Risk (PR) and Use suggests that concerns about the risks of using ChatGPT are not a major barrier for Moroccan professors. To further facilitate the integration of ChatGPT into teaching, efforts should focus on enhancing both its perceived usefulness and ease of use, ensuring that it is accessible and beneficial for professors.

A number of recommendations for integrating and advancing AI within Moroccan curricula can be derived from this research. These can be summed as follows :

1) To minimize the barrier of ethical concers, it is advisable that professors engage in international conferences and contribute to academic research to address ethical concerns and build trust in AI tools.
2) Given the identified barrier of inadequate training in AI among university professors, it is recommended that Moroccan universities offer adequate technological support through extensive AI-training workshops to boost professors' confidence, trust and knowledge in using AI tools in their teaching practices.
3) It is essential to foster cultural awareness regarding the perception and use of AI tools in education. In doing so, organising and designing workshops and international conferences, and coordinating cultural exchange between institutions can both foster AI- cultural awareneness.
4) It is important to address the barrier of lack of equipment to enhance the effective integration of AI in Moroccan higher education sector. Therefore, it is recommended that institutions invest in modern technological ressources, such as reliable internet connectivity, computers, tablets, smartphones, and AI tools.

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