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Article

Academic integrity and the use of ChatGPT by EFL pre-service teachers

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Abstract: Academic integrity has been at the centre of the discussion of the adoption of Chat GPT by academics in their research. This study explored how academic integrity mitigates the desire to use ChatGPT in academic tasks by EFL Pre-service teachers, in consideration of the time factor, perceived peer influence, academic self-effectiveness, and self-esteem. The study utilized web-based questionnaires to elicit data from 300 EFL Pre-service teachers across educational fields drawn from different schools across the world. Analysis was conducted using relevant statistical measures to test the projected four hypotheses. The findings provide evidence in support of Hypothesis 1, with a statistically significant path coefficient (β) of 0.442, a *t*-value of 3.728, and a *p*-value of 0.000. The hypothesis acceptance implies that when academic integrity improves, the impact of the time-saving aspect of the use of ChatGPT Across educational fields study decreases. This suggests that EFL Pre-service teachers who have a firm dedication to academic honesty are less influenced by the tempting appeal of ChatGPT's time-saving features, highlighting the ethical factors that influence their decision-making. The data also provide support for Hypothesis 2, indicating a substantial inverse relationship with a path coefficient (β) of 0.369, a *t*-value of 5.629, and a *p*-value of 0.001. These findings indicate that stronger adherence to academic integrity is linked to a diminished effect of colleagues on the choice to use ChatGPT in Academic tasks. The results suggest that a firm dedication to academic honesty serves as a protective barrier against exogenous pressures or influences from colleagues when it comes to embracing cutting-edge technology. However, in general, these findings revealed there was a negative association between academically related factors (e.g., time factor, sense of peer pressure, language study self-confidence, and academic language competence), as well as an attitude toward adoption of ChatGPT and commitment towards academic integrity.

Keywords: academic integrity; academic tasks; ChatGPT; teachers

1. Introduction

ChatGPT or GPT for short representing the next-gen AI is heralding a new direction towards the path of smart technology (Bell, 2023; Kong et al., 2023). Society and humanity as a whole are undergoing a fundamental transformation as a result of this technology's pervasive influence and shaping of life, communication, and production modes (Limna et al., 2023; Olasik, 2023; Tlili et al., 2023). Chatbots that utilize artificial intelligence-generated content (AIGC) technology have been in a constant state of development and innovation ever since the advent of Eliza. This development process enters a spiralling upward historical stage with the introduction of chatbots such as Google Siri and Microsoft Xiaoice, in addition to the ongoing improvement of technologies like ChatGPT (Cotton et al., 2023; Grassini, 2023). Future technological advancements may alter the appearance of chatbots or how individuals converse to enhance the user experience.

The most prominent characteristic of ChatGPT and comparable products is that

they all adhere to AIGC products, an umbrella term for predetermined content generation guidelines (Azoulay and Reches, 2023; Yu, 2023). These products have a profound impact on individuals' behaviour patterns and generate constant changes in educational patterns due to their close integration into their daily lives, which enables them to establish a significant relationship with each person. The introduction of ChatGPT on 30 November 2022, sparked an unparalleled breakthrough in technology (Lancaster, 2023). OpenAI developed the chatbot model, which garnered more than one million users within five days, thereby engendering extensive international interest and discourse. The introduction of ChatGPT incited a worldwide flurry of innovation, with physical and traditional businesses, online and technological companies, and more all participating in the development of ChatGPT-based diversified application products (Lo, 2023). Microsoft intends to integrate the recently released ChatGPT search engine and Edge browser into every business sector of the company, including Bing, Office, GitHub, and Azure. In addition, Google unveiled Bard, an AI assistant, developed in collaboration with Anthropic, an AI startup, to augment a user's experience (Oravec, 2023). Baidu, a prominent Chinese internet company, concluded internal testing of its ERNIE Bot in March 2023 and subsequently made it available to a select group of users (Naidu and Sevnarayan, 2023). The aforementioned sequence of application and product advancements signifies the swift proliferation and implementation of ChatGPT technology, alongside the ongoing progression of AI technologies across diverse domains. Notwithstanding its unparalleled achievements, ChatGPT is proving to be a double-edged tool that has caused a stir in the academic community (Cotton et al., 2023; Kong et al., 2023). The first practical application of this groundbreaking platform could be to aid investigators and EFL Pre-service teachers in idea generation and surmounting challenges with writing (Gamaye et al., 2023; Shaleska, 2023).

Despite the increasing body of studies examining the potential implications, possibilities, and challenges of ChatGPT in learning institutions and research (Bubas and Gzmesija, 2023; Currie, 2023; Elkhatat, 2023; Fui-Hoon et al., 2023), there appears to be a dearth of research to date that investigates the underlying motivations that propel EFL Pre-service teachers and academics to utilize ChatGPT. Particularly, there is a lack of research investigating the influence of academic integrity on the formation of such investigations. In schools and research, honesty in academia was traditionally a concern; with the advent of AI chatbots, a pervasive and modern technological revolution, it has become more important than ever.

Thus, the current investigation endeavours to address this disparity through an empirical assessment of the determinants influencing the utilization of ChatGPT among linguists, while also incorporating academic integrity into the research framework. The focus on pre-service teachers is because of the importance of preparing teachers to be knowledgeable on the latest AI technologies that can be used in the classrooms. New teachers also are more willing to try these new technologies.

2. Review of related literature

2.1. Academic integrity in the era of ChatGPT: A review of previous studies

The widespread adoption of ChatGPT for educational purposes is being contested across various social spheres because it marks the emergence of new AI technology. Although ChatGPT provides useful advantages like efficient learning and better communication, as explained by Bin-Nashwan et al. (2023) and Yu (2023), some pitfalls arise with the same. However, its adoption may negatively influence personal interactions due to high expectations of its efficiency and effectiveness in communication (Mosaiyebzadeh et al., 2023; Maphosa and Maphosa, 2023; Spennemann, 2023). However, students using ChatGPT to complete assignments can amount to educational fraud and plagiarism practices that some educational establishments, scholarly publications, and media have already denounced. Likewise, there is a lot of debate about the inappropriate use of ChatGPT in science by some scientists.

A current study found that 53% of American undergraduates utilize ChatGPT for paper writing, while nearly 89% use the application to complete research assignments (Currie, 2023; Cotton et al., 2023). Furthermore, 22% of students utilise ChatGPT to generate paper outlines and 48% utilise it throughout examinations (Currie, 2023; Lancaster, 2023; McGee, 2023; Naidu and Sevnarayan, 2023; Olasik, 2023). Nevertheless, it is important to acknowledge that certain college students not only manage to finish assignments with ChatGPT but also attain exceptional grades (Aydi and Karaarslan, 2023). However, educators face challenges in ascertaining whether students are utilizing ChatGPT. This predicament contributes to students developing an unhealthy dependence on this tool, progressively impeding their capacity for active summarization, critical thinking, exploration, and verification. The continuation of this trend will have a significant impact on the academic achievements and growth of students (Kasneci et al., 2023; Limna et al., 2023; Tlili et al., 2023; Zdravkova, 2023). Due to the immense strain associated with course evaluations, instructors at certain schools in North America are compelled to forbid students from utilizing ChatGPT tools (Limna et al., 2023). Furthermore, in January 2023, the New York City Department of Education issued a directive prohibiting students from utilizing this tool for plagiarism, to avert the widespread distribution of AI-based assignments (Lund and Ting, 2023). Queensland, Tasmania, and Western Australia have implemented comparable policies to prohibit the usage of ChatGPT in public schools to safeguard educational quality (Cotton et al., 2023; Deshpande and Szefer, 2023). New South Wales was the initial Australian region to strictly regulate student access to ChatGPT.

In response to the pervasive adoption of ChatGPT, educators in numerous countries have enacted policies restricting or outright prohibiting its usage (Lo, 2023; Malinka et al., 2023). Sciences Po in Paris, for instance, emphasized the banning against scholars utilizing ChatGPT or other forms of AI tools for unknown purposes (Zhou et al., 2023), whereas Seattle public schools outlawed the utilization of ChatGPT in January 2023 (Yu, 2023). RV University in Bangalore, India, has implemented a stringent prohibition that forbids students from utilizing ChatGPT for task completion, exam participation, or laboratory testing (Yadava, 2023). It is a strict policy at the University of Hong Kong that students must obtain written consent from their instructors before utilizing artificial intelligence tools like ChatGPT; failure to do so will result in prosecution for plagiarism (Oravec, 2023). The primary objective of these measures is to guarantee that students employ ChatGPT tools accurately,

prevent excessive dependence and misuse, and protect academic integrity and the standard of education (Chan and Hu, 2023). A highly anticipated joint letter garnered significant societal attention in early April 2023. Numerous experts, including Emad Mostaque, CEO of Stability AI, Marcus, a professor at NYU, and Yuval Noah Harari, author of "Sapiens," affixed their signatures to the letter. The letter highlights the concerns of several signatories regarding the potential grave threats to humanity and society posed by AI systems capable of competing with human intelligence (Maphosa and Maphosa, 2023; Samuel, 2023; Vanwyk et al., 2023). Consequently, they demanded a six-month halt to the implementation of AI technology and the discontinuation of the construction of sizable models such as GPT-5. This joint letter has generated extensive societal discourse and controversies. Contrary to the views of Currie (2023), Kong et al. (2023) and Lo (2023), some contend that the swift progression of AI technology could present humanity with insurmountable hazards and challenges. The former advocates for fostering and encouraging its development, whereas the latter cautions against impeding it.

Media outlets reported that a study was recently published in the journal "Scientific Public Library Digital Health". In this study, ChatGPT a non-medical trained AI model was used as a simulated USMLE. Accuracy rates at this point reached or nearly exceeded passing thresholds (Doshi et al., 2013). Additionally, another study utilized AI technology to test the reliability of empirical data, and scholars successfully wrote and published scholarly articles using AI (Bai et al., 2022). During this process, trusted medical journals expressed fear over the authorship of ChatGPT (Thorp, 2023). Science is one of the scientific publications. Its publishing approach was recently evaluated and appropriate changes were made. However, Nature editors feared that the ChatGPT might compromise the existing scientific research (Nature, 2023). The educational applications of ChatGPT draw great attention from scholars due to its being an artificial intelligence technology. However, some scholars have expressed reservations about its feasibility and likely consequences. Several challenges faced by ChatGPT as noted down by academics like Adeshola and Adepoju (2023). Such aspects include quality of data, limited scope, heightened ethical issues, technical dependency, and possible abuse. According to scholars like Baidoo-Anu, implementing ChatGPT in education will lead to problems like little privacy leakage, poor context, poor communication, and wrong training data (Baidoo-Anu and Owusu Ansah, 2023). However, scholars like Qadir (2022) have noted some ethical issues surrounding biased data and inaccurate info prevalent in ChatGPT and other Generative AI models. They agree that there are some barriers to ChatGPT's positive impact on education such as issues related to data authenticity, knowledge bases, and users' privacy guarantee.

2.2. Conceptual model for the study

To critically explore the perceptions of EFL Pre-service teachers across schools on the academic integrity of academic tasks in the era of ChatGPT, this study developed a conceptual model, similar to Coton et al. (2023), but critically differs in terms of the variables and the measures. The focus of the paper is to measure and explore perceived factors that necessitate the integration of ChatGPT in Academic

tasks, which is capable of compromising academic integrity. Notable factors include the need to save time, the degree or level of academic sufficiency of the researcher, the perceived self-esteem of the researcher, and the issue of peer influence, in terms of using since it seems like every other researcher is also using the tool. **Figure 1** is a diagrammatic representation of the proposed study model.

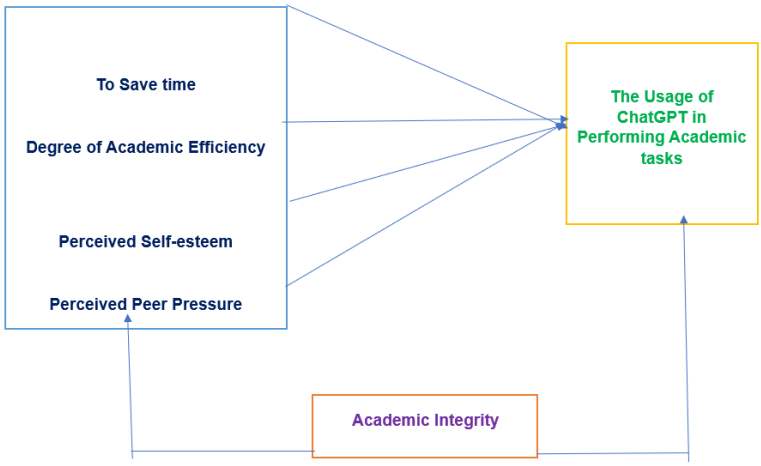

Figure 1. Used conceptual model.

2.2.1. Perceived need to save time

In psychology, the importance of time along with its influence on individual behavior has received widespread acclaim. Time is an essential intangible resource in contemporary society, where its value is equivalent to that of another resource, such as effort or fortune. Insofar as user motivation to utilize technologies is concerned, the literature has invariably agreed that service timeliness is critical. The integration of ChatGPT's time-saving functionality into individuals' daily lives has elevated the significance of immediacy as a critical factor in task completion, productivity enhancement, and goal attainment (Bin-Nashwan et al., 2023; Kong et al., 2023). In principle, efficiency can be considered a benefit of utilizing ChatGPT in terms of user experience. Nevertheless, research on its impact on consumer behaviour is limited, especially within academic circles. ChatGPT may serve as a foundational tool within the academic sphere. This variable forms the basis for the development of the survey item: do time-saving features of ChatGPT increase the potential usage of the tool by EFL Pre-service teachers?

2.2.2. Degree of academic efficiency

Self-reliance is an additional SCT principle. It denotes a person's assurance in his or her capacity to perform or master particular duties. It is frequently attributed to academic confidence in oneself, which is an individual's conviction in his or her ability to attain professional achievement and educational objectives. Self-regulation, motivation, achievement, emotion, and cognition are all involved. Teachers have been frightened and engrossed since the introduction of ChatGPT; its use in education has generated both supporters and challengers. Nevertheless, it is advantageous for scholars to gain perspectives and conduct credible evaluations regarding the importance of ChatGPT in the realm of education (Grassini, 2023; Tlili et al., 2023; Yu, 2023). Kong et al. (2023) argued that platforms propelled by AI can bring about

profound and revolutionary changes in academic environments. Enhancing academic capabilities with a sophisticated and potent instrument, the implementation of artificial intelligence in higher education may increase academic self-efficacy. By facilitating assessment, monitoring plagiarism, supervision, and feedback, ChatGPT may similarly reduce teaching and learning workloads, provide insight into students' learning progress, and foster classroom innovation in academia. Nevertheless, there is a paucity of empirical research examining the impact of academic self-efficacy on ChatGPT usage; thus, this study is necessary to fill this void. Based on this conceptual reflection, a survey item is developed: "The need to enhance academic self-efficiency compels EFL Pre-service teachers to use ChatGPT in research".

2.2.3. Peer influence

Peer influence, sometimes called social influence, is a key factor in shaping behaviour, according to the social psychology viewpoint. Numerous widely recognized frameworks for technology acceptance—including the TBP, TRA, UTAUT, and TAM—state that a person's level of social pressure to conform to the views of their peers is a significant element in their behavioural intention. Personality enticements, choices, as well as demands of others have been the subject of several studies on technology, all of which have shown that these factors substantially impact user behaviour. However, this subsequently ran counter to findings from other research that omitted key data. Peer impact may be situationally dependent, according to the contradictory findings, which is why this research incorporates a contextual evaluation. Nevertheless, studying the impact of peers on ChatGPT use has received less attention (Currie, 2023; Kong et al. 2023). The fact that academics seem to be using ChatGPT at the moment lends credence to the theory that it is a product of current social trends. As such, a survey question was developed: "The hype about the effectiveness of ChatGPT in the generation of contents forms a basis for EFL Pre-service teachers to use it in academic tasks as they perceive others also use it."

2.2.4. Perceived self-esteem

In the context of education, self-esteem plays a significant role in minimizing occupation anxiety, developing a positive attitude, and believing in one's ability to creatively complete academic tasks involving research, teaching, and assessment through the automation of repetitive components of those tasks. The concept of self-esteem has been studied at length in conventional classrooms, but the novel use of ChatGPT in academic settings is still in its early stages (Bin-Nashwan et al., 2023). How or if EFL Pre-service teachers utilize ChatGPT to boost their self-esteem is an unknown factor. In light of this deficiency, the current study sets out to investigate the link between the academic use of ChatGPT and self-esteem. A stronger sensitivity to positive stimuli and a propensity to utilize ChatGPT are likely characteristics of intellectuals with higher self-esteem appraisals, given this background. This understanding leads to the development of a survey item: "The need to complete enormous tasks and maintain one's self-esteem contributes to the use of ChatGPT in academic tasks."

2.3. Study hypotheses

The following hypothesis, developed from the study models and discussed

objectives are pursued in this study:

- Academic integrity directly affects the correlation between the time-saving factor and the usage of ChatGPT in Academic tasks.
- Academic integrity directly affects the correlation between the peer influence factor and the usage of ChatGPT in Academic tasks.
- Academic integrity directly affects the correlation between the academic self-effectiveness factor and the usage of ChatGPT in Academic tasks.
- Academic integrity directly affects the correlation between the self-esteem factor and the usage of ChatGPT in Academic tasks.

3. Study methodology

3.1. Study approach

The EFL Pre-service teachers in this study chose quantitative methods since they are well-suited to investigating correlations and causative assumptions. The quantitative approach serves the purpose of this study because it allows the author to collect data from the sample efficiently. Its ultimate goal was to provide a thorough summary of tendencies and relationships, and it included the carefully monitored manipulation of a small number of parameters to answer theoretically focused research questions and test hypotheses. The study used a cross-sectional research approach to evaluate the ChatGPT use model. It sent an online questionnaire to academics worldwide. Considering that this study is investigating a technological problem, and because online surveys have many desirable characteristics (such as being quick to respond, inexpensive, and accessible to the intended audience), we have decided to use them.

3.2. Study community

The study community includes verified EFL Pre-service teachers enrolled in the postgraduate Diploma Program at Al Ain University. The basis for the verification of the pre-service teacher was based on the publication made in the last two years. The EFL Pre-service teachers must have written papers in different educational fields in the last five years, and the academic institutions where the pre-service teacher works must be recognized.

3.3. Study sampling

The study was decided using the expert sample technique in which the EFL Pre-service teachers selected the samples based on the expert review of their profiles. In this direction, a total of 300 EFL Pre-service teachers were engaged in the study. The sample profile as shown in **Table 1** further summarizes the demographic characteristics of the participants. The ethical approval of the participants was obtained before conducting the study.

Table 1. Summary of sample characteristics.

Measuring groups	Variables	Repetition	Percentiles
Gender	Male	50	16.66%
	Female	250	83.34%
Age	20–24 years	154	51.33%
	25–29 years	99	33%
	30 years and above	47	15.67%

3.4. Study tool and administration

We used a random selection method to send out over 4000 questionnaire invites using web addresses to EFL Pre-service teachers. In a month's interval, we received 300 usable feedbacks. Approximately 9.86%, of respondents took the time to fill out the online questionnaire. Not surprisingly, this aligns with other research that has used online surveys to inquire about technological usage and found a response rate ranging from 7% (Cotton et al., 2023) to 12% (Lo, 2023). To ensure the accuracy and dependability of the ChatGPT use model, we sought recommendations from four academics and pilot-tested the survey with twenty-one EFL Pre-service teachers before distributing the online survey. The experts were selected based on their knowledge and background in the field. They were university professors from UAE universities. Guaranteeing the anonymity of responses, completing a complete pilot test, and utilizing a web-based questionnaire format were among the painstaking procedures put into practice to limit the possibility of social desirability bias in the study.

3.5. Data analysis procedure

This study used a web-based questionnaire with 24 questions to assess six different items: "time-saving factor," "peer influence," "self-esteem," "self-efficiency," "academic integrity," and the application of ChatGPT to academic tasks. All the measuring items came from validated scales for the modified to fit into the specific context of ChatGPT usage in academic settings. For this, we adapted time-saving items from Bin-Nashwan et al. (2023). Four questions of peer influence evaluation were borrowed from Currie (2023), and the self-esteem scale used Lancaster's (2023) study. Inspired by Chan and Hu (2023), a four-item scale for academic self-efficacy was constructed. To measure academic integrity and the use of ChatGPT in academic tasks, four question items adopted from Kong et al. (2023) and Cotton et al. (2023) were used. Interestingly, all the measuring items can also be found in the works of Bin-Nashwan et al. (2023). A five-point Likert scale was used across all the survey items, ranking from strongly disagree to strongly agree, with neutral at the centre. The analysis was conducted using PLS-SEM, which is generally recognized as a strong tool for the analysis of intricate interconnected latent variables. PLS-SEM allows for the use of reflective or formative measurement models, providing greater flexibility in representing the relationships between latent variables and their indicators.

4. Results and discussion

4.1. Results

Table 1 indicates that the female pre-service teachers dominated the study population at over 83%, leaving the male participants a bit above 16% of the study population. Furthermore, the preservice teachers enrolled in the postgraduate Diploma Program at Al Ain University who are between the ages 20–24 years dominated the population at about 51.33%, while the others constitute the remaining value.

4.1.1. Measurement model results

There is a need to present the result of the measurement of the model items and the results of the survey contents, as seen in **Table 2** below.

Table 2. Results of the measurement model.

Measurement items	Survey questions code	Loading	Cronbach's α	CR	Mean score
Time-Saving factor (TSF)	TSF1	0.942	0.846	0.936	0.726
	TSF2	0.795			
	TSF3	0.738			
	TSF4	0.986			
Perceived Peer Influence (PPI)	PPI1	0.849	0.867	0.818	0.988
	PPI2	0.874			
	PPI3	0.759			
	PPI4	0.908			
Perceived Self Esteem (PSE)	PSE1	0.853	0.946	0.737	0.826
	PSE2	0.928			
	PSE3	0.917			
	PSE4	0.963			
Academic Sefl-Efficiency (ASE)	ASE1	0.769	0.848	0.928	0.627
	ASE2	0.894			
	ASE3	0.908			
	ASE4	0.956			
Academic Integrity (AI)	AI1	0.922	0.977	0.972	0.739
	AI2	0.841			
	AI3	0.944			
	AI4	0.806			
Use of ChatGPT in Academic tasks (LR)	LR1	0.975	0.929	0.774	0.713
	LR2	0.899			
	LR3	0.822			
	LR4	0.957			

The examination of the conceptual framework used in this study involved examining the variables' reliability and validity. It is essential to establish criteria for reliability, "discriminant validity", "convergent validity", as well as "internal consistency". Currie (2023) proposes a criterion of 0.4, whereas Bin-Nashwan et al.

(2023) propose that a factor loading exceeding 0.70 is satisfactory for establishing validity and reliability. Kong et al. (2023) put forth the suggestion that items exhibiting loadings ranging from 0.40 to 0.70 should only be evaluated for removal if doing so would enhance the overall reliability of the aggregate. All 24 items in the current study remained in their original states, as they all achieved the minimum threshold of 0.70. The "Average Variance Extracted" (AVE) figures, which surpassed the criterion of 0.50 proposed by Fui-Hoon et al. (2023), provided evidence in favour of convergent validity. **Table 2** displays Cronbach's α results across all latent units, which exceed the minimum threshold of 0.70, thus signifying that the measures exhibit robust internal consistency. Moreover, the "Composite Reliability" (CR) scores surpassed 0.70 for each latent variable, thereby validating the dependability of the latent elements. It is critical to guarantee the dependability and accuracy of the variables to avert inaccuracies in the research findings and derive precise conclusions.

4.1.2. Conceptual model results

The items in the conceptual model formed the basis for the submitted hypotheses. The results are summarised in **Table 3** below.

Table 3. Results of the conceptual model with tested hypotheses.

Hypotheses	Path	*β*	Std. Error	*t*-value	*p*-value	Accepted
Hypothesis 1	TSF*AI → ChatGPT-LR	0.442	0.043	3.728	0.001	Accepted
Hypothesis 2	PPI*AI → ChatGPT-LR	0.369	0.033	5.629	0.001	Accepted
Hypothesis 3	ASE*AI → ChatGPT-LR	0.217	0.042	4.748	0.001	Accepted
Hypothesis 4	SE*AI → ChatGPT-LR	0.307	0.074	3.885	0.001	Accepted

As shown in **Table 3**, an underlying conceptual model evaluation is conducted to determine the extent to which external factors impact internal structures. Assessing the significance of the hypothesized relationships, investigating collinearity between concepts, calculating the explicated variance, assessing the predictive significance of the model, and calculating the effect size are all components of the evaluation. As an indication of academic integrity, the results of the analysis reveal robust positive correlations between every element of the model and the utilization of ChatGPT in academic tasks. The study found that the following variables have a positive correlation with the use of ChatGPT in academic tasks about academic integrity: self-esteem, academic self-effectiveness, time-saving functionality, and perceived peer influence ($\beta = 0.442$, $p = 0.000$; $\beta = 0.369$, $p = 0.001$), respectively. Additionally, the utilization of ChatGPT has a substantial bearing on the academic integrity of every hypothesis. The results of this study thus provide support for hypotheses H1, H2, H3, and H4. **Table 3** displays the outcomes concerning the relationship between them. There is a substantial positive interaction between the time-saving feature, academic integrity, self-esteem, and perceived peer influence when it comes to utilizing ChatGPT in academic tasks.

4.2. Discussion of findings

ChatGPT, an AI-powered language model that provides a multitude of significant advantages such as the creation of academic content, accessibility, collaboration, and

evaluation, has emerged as a prominent subject within the academic community. However, this technological competition is giving rise to apprehensions regarding academic integrity and plagiarism, thereby enabling the transgression of ethical standards within the academic sphere. This study endeavours to identify the underlying motivations that propel EFL Pre-service teachers to incorporate ChatGPT into their scholarly activities, with an emphasis on the influence of academic integrity on their adoption of this innovation. This is a pragmatic survey about the total development and confirmation of a comprehensive adoption model for ChatGPT usage in the linguistic EFL Pre-service teachers' environment. Empirically, it can be concluded that the efficiency function of ChatGPT influences positively and considerably their attitude towards using this tool. Time is increasingly important in research when developing material, finishing assignments, boosting performance, and achieving objectives because of the saving feature when integrating and loading relevant information into scholarly work through ChatGPT. This outcome is similar to what was found by Bin-Nashwan et al. (2023) that time is a major issue with EFL Pre-service teachers using ChatGPT. Similarly, Kong et al. (2023) and Maphosa and Maphosa (2023) argued that beyond academic integrity issues, time is still key in deciding if linguists should consider using ChatGPT as part of their work.

The benefits obtained from the hypothesis testing findings on how the use of chatbots across educational field studies affects scholarly ethics, cannot be underestimated. Supporting hypothesis 1, the path coefficient (β) is 0.442, the t-value is 3.728 and the p-value is 0.000, which shows academic integrity as a variable having a strong impact on the relationship between TSF Thus, as the importance of academic integrity increases, saving time becomes irrelevant as a motivation for ChatGPT to be introduced in research. The fact that the null hypothesis was rejected supports the claim of this study that adherence to academic integrity diminishes the time-saving benefit of using ChatGPT.

Moreover, this finding supports Hypothesis 2 which proposes that academic integrity can directly affect the relationship between PPI and the usage of ChatGPT in linguistic research. The statistically observed path coefficient of 0.369, $t = 4.629$ and $p = 0.001$ signify strong negative relationships between the variables. Thus, peer pressure is negatively influenced by the high quality of applying ChatGPT in research. According to the evidence that is at hand, people have great difficulty being affected by peer pressure about using advanced technology and this seems to hold for individuals who are committed to academic honesty.

Surprisingly, the findings show that participants within the academic tasks field displayed positive intention towards using ChatGPT whenever they recognized social influence. Therefore, this implies that those involved in scholarly circles such as the EFL Pre-service teachers, EFL Pre-service teachers, and collaborators should have a positive impact on the adoption of Chat GPT in the learning environment. The intriguing consequence of using ChatGPT is probably going to give rise to security, ethical, and legal issues surrounding privacy, copyright transparency, and data mismanagement, bias, and misconduct. Few studies have been carried out in different settings and it is proven that social norm has some positive impacts (Limna et al., 2023; Olasik, 2023). The subsequent observation from the study shows that the behavioural intention to use ChatGPT was positively influenced across educational fields

instructors' academic self-esteem.

The subsequent observation from the study shows that the behavioural intention to use ChatGPT was positively influenced across educational fields instructors' academic self-esteem. Another observation from the study suggests that across educational fields instructors' behavioral intention of adopting ChatGPT was positively influenced by academic self-esteem. This means that academic self-esteem is important when using chat GPT in education since it correlates with relieving occupational worries, developing a positive perspective, and having a creative mindset for research, teaching, and evaluation duties to make work easier by automating repetitive tasks' portions.

Additionally, the Chat GPT usage model provided some noteworthy findings, based on the mediating effect of academic integrity. Firstly, there were significant positive effects of academic integrity upon EFL Pre-service teachers' ChatGPT implementation. Moreover, this shows that strict academic standards guide EFL Pre-service teachers' use of ChatGPT in research. Some scholars may even regard the use of ChatGPT as a form of academic cheating similar to copying or paraphrasing which could lead to serious implications among the scholars. We, therefore, assessed the manner through which academic integrity moderated the relationships between chatbot usage and its drivers. The conducted analysis evidenced that the connection between the save-time character of Chat GPT and academic integrity application was very positive as distinct from the assumed negative association in advance. This indicates that with increased levels of perception of ChatGPT's integrity in academia, academics become more sceptical and question whether it is saving them time without violating research ethics principles. The study also shows that there exists a dependent relationship between the self-confidence levels of individuals on their perception of academic integrity during the use of ChatGPT. This implies that scholars believe that maintaining a moral rectitude concerning the use of ChatGPT could bolster their confidence, thereby encouraging the implementation of this novel tool in academic environments. Nevertheless, contrary to initial speculation, the presence of academic integrity reinforced the positive correlation between individuals' perceptions of social influence and their utilization of ChatGPT. This suggests that the degree to which academic peers (e.g., scholars, EFL Pre-service teachers, and associates) uphold rigorous academic standards has an impact on the extent to which they utilize ChatGPT increases.

5. Implications

The outcomes of the hypothesis testing demonstrate a uniform trend throughout the four dimensions—namely, self-esteem, academic self-effectiveness, peer influence, and time-saving factor—which suggests that academic integrity is an essential element in reducing the impact of these elements on the application of ChatGPT in academic tasks. The observed negative correlations indicate that individuals' inclination to integrate ChatGPT into their research practices is less influenced by the perceived benefits or pressures related to these aspects, as their dedication to academic integrity increases. The results emphasize the significance of cultivating a climate of scholarly integrity among members of the academic

community, specifically in the context of technological progress that is undergoing rapid change. To underscore the significance of academic integrity to emergent technologies such as ChatGPT, academic institutions, and instructors may wish to incorporate academic integrity discussions and training into courses on research ethics and methodologies. Adopting this proactive stance can enable EFL Pre-service teachers to make ethical judgments that are by scholarly criteria, thus promoting the conscientious and principled application of sophisticated tools in their investigations.

6. Conclusion

There is much information about characterizing the aspects influencing chat usage among linguistic EFL Pre-service teachers, as well as a reduction in academic integrity impact. Four hypotheses were tested. These findings support Hypothesis 1 (TSF∗AI → ChatGPT-LR) as statistically significant path coefficient (β) = 0.442, *t*-value = 3.728 and *p*-value = 0.000 Moreover, it entails to assert that as academic integrity increases the influence of the time-saving component of using chat GPT in linguistic research goes down. The above discussion implies that highly motivated EFL Pre-service teachers on uphold academic integrity are not affected by the temptation brought forth by the speed-enhancing characteristics of chat GPT as far as ethical considerations are concerned.

Furthermore, the results support hypothesis two (PPI∗AI → ChatGPT-LR) showing that there is a strong inverse correlation with a path coefficient (β) value of 0.369, *t*-value of 5.629, and *p*-value of 0.001. These results show that high adherence strengthens the influence of peers and affects its impact concerning ChatGPT usage for linguistic research. Concerning Hypothesis 4 (SE∗AI → ChatGPT-LR), the findings revealed a negative relationship as indicated by the β path coefficient of 0.307, the *t*-value of 3.885, and the *p*-value, which showed that the level of following ethical guidelines was proportional with less impact brought about by personal pride in the use of ChatGPT in studying across educational fields.

Therefore, the paper concludes that academic integrity is significant in making other social issues insignificant when considering doing academic tasks with ChatGPT. It is very important on how ethical issues affect the decision-making process of linguistically EFL Pre-service teachers if they choose to incorporate technology into their work due to the results of hypotheses.

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