# University teachers at the crossroads: unpacking their intentions toward ChatGPT's instructional use

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## Abstract

**Purpose** – The objective of this study was to elucidate the intentions of university teachers regarding the utilization of ChatGPT for instructional purposes.

**Design/methodology/approach** – In this cross-sectional quantitative research, data were collected through an online survey tool from 493 university teachers across Pakistan.

**Findings** – The findings revealed that positive attitudes and a sense of perceived behavioral control had a positive impact on teachers' adoption of ChatGPT for instructional purposes. Conversely, subjective norms exhibited a significant negative influence. The results underscore that teachers are inclined to embrace ChatGPT for instructional cause due to their recognition of its educational utility. However, it does not appear that their social environment, which includes their coworkers and managers, has a significant impact on how they decide what to do.

**Research limitations/implications** – The findings bear implications for devising relevant policies that support AI integration in curricula and assessments and teachers' professional development (PD) programs. There is a need for formulating guidelines at the universities and the policy tiers to make the ChatGPT use more relevant. Future research should strive to generate insights toward AI use in the areas of curriculum, assessment and teachers' PD.

**Originality/value** – The study adds to the relatively new literature on the integration of ChatGPT in higher education. This study's findings contribute to the body of knowledge related to AI's pedagogical use and set future directions to consider factors influencing meaningful and responsible use of AI in teaching and learning.

**Keywords** Intentions, University faculty, ChatGPT, Instructional use

**Paper type** Research paper

*Conflict of interest:* The authors declare no conflict of interest.

## Introduction

This study explores university faculty responses to Generative Pre-trained Transformer (ChatGPT) integration into educational contexts. The OpenAI-developed ChatGPT has distinguished itself as a remarkable natural language processing (NLP) tool. GPT models use a large amount of publicly available digital content to read and produce human-like text in several languages. They can exhibit creativity in writing, from a paragraph to a full research article and convincingly argue (or nearly convincingly) almost any topic (Rospigliosi, 2023). GPT models use billions of parameters; GPT-4 supports about 1.8tn parameters in comparison to GPT-3, which has 17bn parameters (Patel and Wong, 2023). Such capabilities make the models better at handling different tasks and achieve the same level of performance as fine-tuning methods that were thought to be the best at the time (Huang and Tan, 2023).

The response from the research community to ChatGPT has been swift and enthusiastic, transcending disciplinary boundaries, with scholars from fields as diverse as business, healthcare, marketing and education (Chan and Hu, 2023; Mohamed, 2023; Wang *et al.*, 2023). In the field of education, research has primarily focused on the potential drawbacks and challenges of ChatGPT, including academic integrity (Sullivan *et al.*, 2023) and its impact on learners' critical thinking and creativity (Iskender, 2023). There is a growing perception that ChatGPT could replace human educators as students increasingly rely on it, which could contribute to a decline in their critical thinking skills (Mitchell, 2022). These kinds of concerns and skeptical responses to using ChatGPT in education have led to its ban or regulation (Mukherjee *et al.*, 2023). Amid the skepticism toward ChatGPT, it has also been lauded for its ability to influence language learning (Liu and Ma, 2023), provide learners with access to a vast repository of knowledge resources and deliver responses in real-time with remarkable efficiency (Bitzenbauer, 2023).

Considering the ongoing debates regarding the advantages and disadvantages of ChatGPT in education, it is important to recognize that chatbot technology is still in its infancy, necessitating robust research to determine its meaningful educational prospects and address the associated concerns (Pradana *et al.*, 2023). Research has been responsive to ChatGPT use in education but limited to emphasizing challenges and opportunities it offers for student learning, their assessment, evaluation and academic integrity (Kohnke *et al.*, 2023; Ray, 2023). The available research has largely ignored the most prominent aspect of understanding teachers' responses to ChatGPT's instructional use (Stokel-Walker, 2023). Teachers are the frontline implementers (Jenkins, 2020) and agents of change regarding any innovations in teaching and learning (Fullan, 1993). Their intentions toward ChatGPT use provide a blueprint for its future meaningful instructional use (Baloch *et al.*, 2022; Onal and Kulavuz-Onal, 2024). This study aims to bridge this gap by investigating teachers' intentions toward the instructional use of ChatGPT. The results of this study illuminate the research in relation to ChatGPT's instructional use, offer insights to universities for strategizing the relevant instructional use of ChatGPT and assist policymakers in formulating policies regarding ChatGPT integration in education in general and instructions in particular.

## Literature review

Chatbots, driven by artificial intelligence (AI), have rapidly evolved into versatile tools utilized across a wide spectrum of domains, including education. The emergence of ChatGPT has received phenomenal attention from academia in relation to its effects on teaching and learning. The available research (e.g. Al Darayseh, 2023; Ayanwale *et al.*, 2022; Chiu *et al.*, 2023; Joksimovic *et al.*, 2023; Okonkwo and Ade-Ibijola, 2021; Su *et al.*, 2022; Wang *et al.*, 2023) considers ChatGPT to have a profound effect on teaching and learning. It has been found to have a significant effect on improving learners' critical thinking skills (Annamalai *et al.*, 2023), problem-solving capabilities (Kohnke *et al.*, 2023; Su *et al.*, 2022) and personalized learning options (Al Darayseh, 2023; Chiu *et al.*, 2023).

Because of such valuable support for learners, ChatGPT could be highly considered by university teachers for greater collaboration, interactivity, creativity and innovativeness (Annamalai *et al.*, 2023). Integrating the course material can foster genuine interest and offer practical applications to the learners (Su *et al.*, 2022). Consequently, it requires teachers to be capable of aligning AI with instruction. At first, fostering positive learning attitudes and sparking interest in the use of ChatGPT in instructions could be the main aspect amid the debate of whether it is supportive of learning (Bitzenbauer, 2023) or threatening critical thinking and promoting learners' overreliance on ChatGPT (Iskender, 2023). In such a scenario, teachers' intentions toward the meaningful use of ChatGPT for their teaching and learning remain pivotal (Ayanwale *et al.*, 2022). Understanding teachers' intentions becomes very relevant when an innovation such as ChatGPT is in its infancy state (Pradana *et al.*, 2023) and has not been implemented by teachers in the past (Baloch *et al.*, 2022).

## Teachers' intentions toward ChatGPT's instructional use

The implementation of any educational innovation is not a simple task as it involves human intentions (INT) as a decisive force in this regard (Baloch *et al.*, 2022). INT refers to a person's projected or intended behavior in the future and in a particular situation and manner (Ajzen, 2019). When given the opportunity to act, the INT becomes behavior. Therefore, the INT of teachers needs to be known for the trajectories of integration of an innovation such as ChatGPT because it is the most accurate predictor of behavior.

TPB is a widely utilized framework for the examination and comprehension of human behavior (Ajzen, 2019). As per Strzelecki (2023), the primary drivers of AI use are INT, closely followed by personal innovativeness. An insightful moderator analysis conducted by Kopplin (2023) reveals that key constructs, such as attitude (ATT), subjective norms (SN) and perceived behavioral control (PBC), exert notable influences on individuals' INT to engage with AI-based chatbots. Acknowledging the interplay of these factors can inform the design and implementation of ChatGPT systems, ensuring that they align with users' INT and preferences for an optimal user experience (Strzelecki, 2023). Individuals' INT is shaped by their ATT, SN and PBC.

## Teachers' attitudes toward ChatGPT integration

Ajzen (1991) argued that ATT can be defined as the degree to which a person has a positive or negative appraisal of the anticipated effects of a particular behavior. Recent research (e.g. Aslam *et al.*, 2023; Fink *et al.*, 2023; Jogezai *et al.*, 2021) reveals a positive correlation between an individual's attitude toward a specific behavior and their intention to engage in that behavior. This evaluation can range on the spectrum of positive to negative, liking to disliking and favorable to unfavorable behaviors (Ajzen and Fishbein, 1977). Conversely, a negative attitude toward a behavior weakens the individual's intention to execute it. According to Ajzen and Fishbein (1977), attitude is among the several determinants of behavior.

The available research on the relationship between teachers' attitudes and intentions remains limited to technology adoption, while little is known about how teachers' attitudes may affect their intentions toward the instructional use of ChatGPT. More importantly, teachers' attitudes and behaviors have been studied in advanced societies (Jogezai *et al.*, 2021), which may differ in significance due to attitudes and intentions that are context-specific (Ajzen, 1991). Digital divide (Carter *et al.*, 2020) remains a prominent contextual factor having an enormous effect on teachers' attitudes and intentions toward technology integration (Jogezai *et al.*, 2021). Therefore, it is imperative to explain the effect of university teachers' attitudes on their intentions toward the instructional use of ChatGPT in developing societies. Consequently, the following hypothesis is formulated:

*H1.* University teachers' attitudes have a positive effect on their intentions toward ChatGPT's instructional use.

## Teachers' subjective norms toward ChatGPT integration

SN is an individuals' perception that most people who are important to them (friends, mentors, teachers and other influential role models) think that they should show the behavior in question (Ajzen and Fishbein, 1977). SN encompasses an individual's perspective on the significance of others in their social sphere, desiring or expecting them to behave in a particular way. According to Habibi *et al.* (2023), SN is a strong predictor of INT for technology adoption. In essence, SN influences individuals to initiate the use of products or services not only solely based on their inherent benefits but also because of the influence and admiration they hold for those who utilize them (Wang *et al.*, 2023). SN also generates social pressure, which refers to the extent to which an individual perceives that important others believe he or she should use the new system (Venkatesh *et al.*, 2003, p. 451). This insight emphasizes the relevance of SN in the context of ChatGPT usage intentions (Chai *et al.*, 2021), highlighting the role of social influence and perception in shaping individual INT.

Embodied within users' social context, SN emerges as external factors that are directly impacting teachers' responses to the usefulness of ChatGPT while indirectly shaping their INT through ATT. It is suggested that SN becomes more favorable when individuals perceive that their colleagues, friends and superiors are comfortable with using AI technology. Furthermore, Ayanwale *et al.* (2022) and Chia (2023) have found teachers' SN has a significant effect on their perceived usefulness of AI. Building upon these findings, the following hypothesis is proposed in the context of the ChatGPT usage intentions of university teachers:

*H2.* University teachers' subjective norms positively affect their intentions toward ChatGPT usage in their instruction.

## Teachers perceived behavioral control toward ChatGPT integration

PBC refers to an individual's subjective estimation of how simple or difficult it is to engage in a specific behavior (Ajzen, 1991). According to TPB, beliefs about control and perceptions of authority are the two most influential factors in PBC. Both internal factors (e.g. personal talents) and external factors (e.g. environmental constraints) can facilitate or impede behavior and control beliefs are related to their presence or absence. In contrast, perceived power evaluates the strength of influence the control beliefs have on the capacity to perform the behavior. A person's PBC is high if they believe they have a high degree of control and if executing the behavior is relatively effortless. In contrast, a person's PBC is low if they perceive certain obstacles or constraints. This nuanced understanding helps to explain why individuals may not act on their positive attitudes and social pressures if they believe they lack control over their behavior.

Liu and Ma (2023) found that learners with positive attitudes toward the usefulness of ChatGPT tend to demonstrate a higher level of INT toward its use in English learning outside the classroom. In the realm of AI-based chatbot research, it is often assumed that users possess the requisite knowledge and capabilities to engage in specific behaviors (Chai *et al.*, 2021). Research consistently demonstrates a positive and significant relationship between PBC and the intention to use AI-based chatbots (Habibi *et al.*, 2023). Understanding this relationship is crucial for optimizing user experiences and ensuring that individuals feel empowered and capable when interacting with AI-driven technologies. Their perceived ease of use of ChatGPT may make a substantial contribution to its implementation (Foroughi *et al.*, 2023). At the same time, Aptyka and Großschedl's (2022) results showed that perceived

behavioral control was the least influencing factor of teachers' INT to teach evolution in biology class. The study by Archie *et al.* (2022) analyzed perceived behavioral control through knowledge and skill and found a moderate effect. Considering the pivotal role of teachers PBC on their instructional use of ChatGPT, the following hypothesis is formulated:

*H3.* University teachers' perceived behavioral control significantly influences their intentions of ChatGPT's instructional use.

## Method

This study employed a quantitative research approach to investigate teachers' intentions to use ChatGPT in their instruction. We chose a cross-sectional survey design to collect data from multiple respondents at a specific moment in time (Babbie, 2016). The cross-sectional research approach, as mentioned by Allen (2017), facilitated simultaneous analysis of the relationships among several variables of the study, including ATT, SN and PBC at a specific time (Figure 1).

The data collection process consisted of administering an online survey questionnaire to university faculty members from Pakistan. The selection of participants was made using a convenient sampling method (Neuman, 2014). The prominent aspect of convenience sampling was the university faculty's familiarity with ChatGPT. Data were collected from 547 participants using Google Docs. In order to make it easier for the participants to give an appropriate answer, they were asked if they were familiar with ChatGPT in terms of having relevant knowledge and some experience with its use. Only those who marked "having familiarity with ChatGPT" were provided access to respond to the survey items. Out of 547 respondents, 44 responses were dropped due to missing data and a total of 493 responses were used for analysis. Prior to granting access to the survey, the participants were provided with a comprehensive explanation of the study's objectives and their rights as research participants.

The study sample consisted of university teachers, with a gender distribution of 56.38% men and 43.62% women (Table 1). The largest proportion of participants (64.30%) had 1–5 years of teaching experience, while 22.31% belonged to the category of 6–10 years of teaching experience. The sample consisted of faculty members, and a job sector distribution revealed that 64.5% of respondents worked for public sector universities, 12.37% for private sector universities and 23.12% for semi-government universities. Education level was also included in the demographics. Thus, 52.53% of respondents, according to the data, held a bachelor's degree or higher. 41.37% of respondents had an MS/MPhil and 6.69% had a Ph.D.
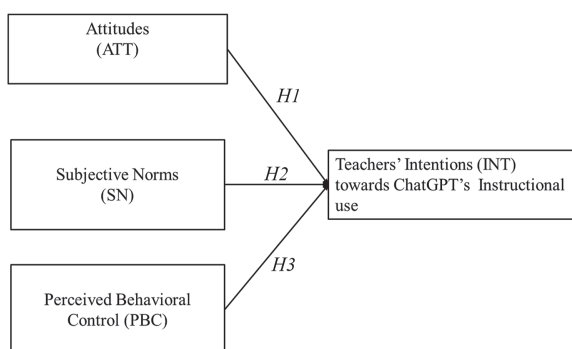


**Source(s):** Created by authors

| Variables | | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 278 | 56.38 |
| | Female | 215 | 43.62 |
| Teaching experience (in years) | 1–5 | 317 | 64.30 |
| | 6–10 | 110 | 22.31 |
| | 11–15 | 18 | 3.65 |
| | 16–20 | 36 | 7.30 |
| | Above 20 | 12 | 2.43 |
| Sector | Public | 318 | 64.5 |
| | private | 61 | 12.37 |
| | Semi-government | 114 | 23.12 |
| Education | Graduation | 259 | 52.53 |
| | MS/MPhil | 204 | 41.37 |
| | Ph.D. | 30 | 6.69 |
| Province | Balochistan | 144 | 29.20 |
| | Sindh | 24 | 4.86 |
| | Khyber Pakhtunkhwa | 43 | 8.72 |
| | Punjab | 270 | 54.76 |
| | Islamabad | 12 | 2.43 |
| Designation | Lecturer | 357 | 72.41 |
| | Assistant Professor | 121 | 24.54 |
| | Professor | 15 | 3.04 |

**Table 1.**
Participants'
demographics

**Source(s):** Created by authors

Punjab province had the greatest response rate among the four provinces, at 54.76%, and lecturers had the highest response rate at 72.41%.

*Measures and instrument design*
According to Collins (2003), an instrument functions as a mechanism for the measurement and quantification of the behaviors or attributes of variables. Responses were measured using a five-point Likert scale. The instrument used in the study showed acceptable reliability, as evidenced by the Cronbach's alpha coefficients calculated. These coefficients ranged from 0.892 to 0.912 (Table 2).

*Measurement model assessment*
Convergent validity, reliability and discriminant validity served as guiding principles in the development of the measurement model. As suggested by Hair *et al.* (2017), the assessment of convergent validity involved the examination of item loadings that exceeded the established threshold of 0.50. The researchers employed the composite reliability (CR) and average variance extracted (AVE) criteria to assess the reliability of the measurements (Table 3). Both the CR and AVE values exceeded the established thresholds of 0.80 and 0.50, respectively.

| Variable | Cronbach's alpha |
|---|---|
| ATT | 0.892 |
| SN | 0.912 |
| PBC | 0.897 |

**Table 2.**
Reliability statistics of
ATT, SN and INT

**Source(s):** Created by authors

| Constructs | Items | Loadings | CR | AVE | P |
|---|---|---|---|---|---|
| Intentions (INT) | INT1 | 0.889 | 0.927 | 0.735 | 0.000 |
| | INT2 | 0.910 | | | |
| | INT3 | 0.900 | | | |
| | INT4 | 0.758 | | | |
| | INT5 | 0.831 | | | |
| | INT6 | 0.846 | | | |
| Attitudes (ATT) | ATT1 | 0.897 | 0.933 | 0.822 | 0.000 |
| | ATT2 | 0.922 | | | |
| | ATT3 | 0.901 | | | |
| Subjective norms (SN) | SN1 | 0.916 | 0.938 | 0.791 | 0.000 |
| | SN2 | 0.861 | | | |
| | SN3 | 0.864 | | | |
| | SN4 | 0.915 | | | |
| Perceived behavioral control (PBC) | PBC1 | 0.846 | 0.927 | 0.761 | 0.033 |
| | PBC2 | 0.898 | | | |
| | PBC3 | 0.873 | | | |
| | PBC4 | 0.872 | | | |
| **Source(s):** Created by authors | | | | | |

**Table 3.**
Convergent validity

The CR values exhibited a range of 0.927–0.938, while the AVE values showed a range of 0.761–0.822, thereby affirming the dependability of the measurement methodology.

Next, this study assessed discriminant validity, which, according to Henseler *et al.* (2015) is an important part of working with latent variables and multiple indicators to represent constructs. The goal was to ensure that the latent variables used to measure the investigated causal relationships were distinct from one another, thereby averting multicollinearity problems. In order to accomplish this, the heterotrait-monotrait ratio (HTMT) criterion advocated by Henseler *et al.* (2015) with a recommended threshold of below 0.90 was utilized. According to the data presented in Table 4, all HTMT values for INT remained below the specified threshold of 0.90. These results demonstrate that both convergent and discriminant validity have been successfully established within the measurement model.

*Structural model assessment*
As described by Henseler *et al.* (2015), the statistical significance of the hypotheses was determined by employing boot-strap resampling. According to Hair *et al.* (2017), the determination of the structural model's relationship is contingent on the path coefficient among the investigated constructs. The hypothesis testing supported H1, H2 and H3 (Table 5). The results of H1 indicate that ATT has a substantial influence on INT ($\beta = 0.584$, $t = 6.643$, $p < 0.05$). H2 evaluated whether university teachers' SN had an effect on their INT. The results demonstrate that SN has a statistically significant negative effect ($\beta = 0.128$, $t = 1.842$, $p < 0.05$). H3, aiming to explain the effect of PBC on INT, was found to be significant ($\beta = 0.292$, t $= 4.445$, $p < 0.05$).

| | INT | ATT | SN | PBC |
|---|---|---|---|---|
| Intentions (INT) | – | | | |
| Attitudes (ATT) | 0.783 | – | | |
| Subjective norms (SN) | 0.650 | 0.796 | – | |
| Perceived behavioral control (PBC) | 0.745 | 0.863 | 0.873 | – |
| **Source(s):** Created by authors | | | | |

**Table 4.**
Discriminant validity
using HTMT

## Discussion

The study findings demonstrated ATT and PBC as notable factors that impact teachers' INT to utilize ChatGPT in teaching and learning. This implies that the teachers' ATT toward ChatGPT are crucial in determining their willingness to incorporate it into their instruction. A favorable view of ChatGPT could come from several sources, such as believing in the practical approach (Su *et al.*, 2022) that it improves the quality of teaching, cuts down on the time spent on tasks or makes learning more enjoyable for students. Teachers who exhibit a strong inclination toward embracing ChatGPT are more eager to allocate their time and energy toward investigating the possible advantages it offers within their educational environments. Therefore, fostering a positive mindset can aid in the promotion of ChatGPT adoption. To do this, it is essential to emphasize ChatGPT's educational advantages and minimize any misconceptions about its use. This will also help teachers to be more confident and innovative in their use of ChatGPT, as argued by Strzelecki (2023).

Conversely, SN has a distinct influence, although they retain their influential nature. SN encompasses the individual's perception of social constraints and expectations exerted by colleagues, administrators or peers, which influence the adoption of ChatGPT. Our findings support the previous research about the significance of SN on INT (Chia, 2023). However, our results suggest that teachers' INT to instructionally use ChatGPT is negatively influenced by their SN. The findings suggest teachers' skepticism could be expected to arise from their peers' lower understanding of ChatGPT's instructional use. It could also be related to risk factors associated with the use of ChatGPT, such as students' reliance on ChatGPT for their assignments and tasks (Ray, 2023). Teachers may encounter opposition or skepticism from their colleagues, leadership, and social networks when contemplating the incorporation of ChatGPT in their instruction. The opposition observed may also stem from apprehensions regarding ChatGPT (Iskender, 2023), the potential displacement of traditional teaching techniques by technology or a general aversion to change (Jogezai *et al.*, 2022). Due to potential misalignment between SN and INT, teachers may exhibit a reduced inclination to prioritize subjective standards in their decision-making processes pertaining to the adoption of ChatGPT. This dimension requires a supportive educational culture (Foroughi *et al.*, 2023) that encourages teachers' use of ChatGPT. However, it may take some time for AI and ChatGPT in particular to become part of teachers' normative beliefs. We can argue that since teachers have positive attitudes toward ChatGPT, we expect such beliefs to evolve with the passage of time. In the meantime, universities' role in generating institutional-wise understanding of ChatGPT remains critical. Their leadership needs to be mindful of the effects ChatGPT may have for their teachers, students and the organization as a whole.

The positive effect of PBC remains significant in the context of ChatGPT's instructional use. It shows that teachers' INT is substantially influenced by their perceived efficacy in utilizing ChatGPT. We may argue that teachers who possess a sense of assurance in their ability to integrate ChatGPT into their instruction are more inclined to do so. PBCl is intricately linked to self-efficacy (Ajzen, 1991), which shows teachers readiness to adopt ChatGPT in their instruction as it reflects their level of assurance in their capacity to successfully execute a particular undertaking. It echoes the research by Al-Emran *et al.*

| Hypothesis | Path | Beta coefficient | Standard deviation | T Statistics | p-value | Decision |
|---|---|---|---|---|---|---|
| H1 | AT > INT | 0.584 | 0.088 | 6.643 | 0.000 | Accepted |
| H2 | SN > INT | −0.128 | 0.069 | 1.842 | 0.033 | Not accepted |
| H3 | PBC > INT | 0.292 | 0.066 | 4.445 | 0.000 | Accepted |

**Source(s):** Created by authors

**Table 5.**
Path coefficient and hypothesis testing

(2023), which found that students develop positive behavior toward ChatGPT use once they believe that it is meaningful for their learning and performance expectancy (Venkatesh *et al.*, 2003). The expectation of using ChatGPT allows teachers to use it without putting any extra effort into its instructional use. It is also critical that, along with their self-mastery of ChatGPT, teachers are provided with a supportive environment to be able to deal with day-to-day troubleshooting and evolve its use to a more advanced level. In the face of the swift evolution of AI, it is quite evident that teachers need to be professionally developed. Within the framework of ChatGPT, teachers who obtain sufficient training, support and resources would be more confident and proficient in integrating ChatGPT.

## Implications and limitations
Collaboration among universities, researchers, policymakers and teachers is essential for navigating the evolution triggered by AIs such as ChatGPT. So is fostering a positive attitude, respecting individual teacher autonomy in decision-making and empowering teachers through training and support to harness the potential of AI in teaching and learning.

The negative effect of subjective norms on teachers' intention of using ChatGPT shows their skepticism caused by certain societal risks, for example, students' reliance on ChatGPT for their assignments and tasks or the non-supportive policies and organizational management. There is a need for supportive organizational policies that enhance teachers' understanding of ChatGP and find meaningful ways to use it in instruction. Teachers' engagement in relevant capacity-building programs and the available on-the-job support could be some of the appropriate strategies. The most prominent would be integrating ChatGPT and other AI into curricula as a subject and a pedagogical tool for attaining students' learning outcomes.

The role of policymakers becomes significant by formulating relevant AI policies and guidelines and allocating funds for AI integration in curricula and professional development programs. A close working relationship between the universities and policymakers is essential in developing guidelines for AI to generate greater synergy, accountability and compliance for the responsive and relevant use of ChatGPT and other AIs. Teachers and teacher training institutions should actively pursue opportunities for their professional development (PD) to enhance their AI literacy skills and its instructional relevance. They may also explore the AI relevance for need-based and self-directed PD and establish communities of learners by collaborating with their colleagues and beyond.

It is essential to consider certain limitations of this study. The findings are limited in scope due to the exclusive focus on university teachers. Future research should aim for a more inclusive approach to capture the perspectives and experiences of all stakeholders, as their interactions and perceptions can substantially impact ChatGPT integration. In addition, the context-specific nature of the study may hinder the generalizability of its findings. Consequently, care should be taken when applying the study's findings to varying contexts. The study does not delve thoroughly into the actual implementation of ChatGPT in the classroom. Future efforts regarding its practical use can provide educational stakeholders with valuable insights.

## Conclusion
This study emphasizes the critical interaction between teachers' ATT, SN and PBC in shaping their INT to use ChatGPT in instruction. ATT emerged as a primary driver, indicating that cultivating a favorable perception of ChatGPT is essential. Teachers who view this AI technology as a valuable classroom resource are more likely to embrace its incorporation into their instruction. SN has a more nuanced effect, with external pressures

and expectations occasionally functioning as deterrents. Policymakers and educational institutions should be wary of mandating the adoption of technologies that run counter to the original ideas of their creators. PBC, marked by teachers' confidence in their ability to effectively use ChatGPT, assumes a pivotal role. Teachers who feel empowered because of training and support are more likely to adopt and seamlessly incorporate this technology. Investing in the teachers' PD and providing them with the necessary resources is, therefore, essential for achieving successful ChatGPT integration.

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