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Exploring knowledge, attitudes, and practices of academics in the field of educational sciences towards using ChatGPT

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Abstract

This study investigates the knowledge, attitudes, and practices (KAP) of Chat Generative Pre-Trained Transformer (ChatGPT) among academics working in the field of educational science in Türkiye. Employing a mixed-methods research design, the study aimed to explore both quantitative and qualitative aspects of academics' interactions with ChatGPT. In the quantitative phase, 396 academics completed the "KAP-C Questionnaire" (Knowledge, Attitude, and Practice Regarding the Educational Use of ChatGPT) to determine their perceptions and behaviors concerning ChatGPT. The findings revealed diverse perceptions among academics regarding ChatGPT's capabilities in educational settings, alongside ethical concerns. Statistical analysis indicated that gender and prior technology training did not significantly influence their attitudes ($p > .05$). However, significant differences were found based on years of work experience, favoring those with 21 or more years of experience ($p < .05$). The qualitative phase involved semi-structured interviews with two groups: 23 academics demonstrating high ChatGPT usage and 16 with low usage. Qualitative data highlighted perceived benefits such as efficiency, creativity enhancement, and improved information access facilitated by ChatGPT. Despite these advantages, concerns about reliability, accuracy, and ethical implications were prominent among academics. The study identified multiple uses of ChatGPT including education, information retrieval, idea generation, and productivity enhancement. Challenges such as usability issues and concerns about language and information quality underscored the need for improving ChatGPT's reliability and usability in academic settings. This research contributes to understanding the complex attitudes towards and usage patterns of ChatGPT among academics in Türkiye, shedding light on both its potentials and challenges in educational contexts.

Keywords Academics · ChatGPT · Educational sciences · Higher education

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1 Introduction

Education has been greatly impacted by artificial intelligence (AI) and natural language processing, which have opened new opportunities for creative teaching and learning strategies. The development of ChatGPT, which can produce text that sounds like human speech and have conversations with users, is one of the noteworthy achievements in AI (Habibi et al., 2023). According to Lund and Ting (2023) and Pavlik (2023), ChatGPT achieved an impressive milestone of over 1 million downloads in just one week after its launch in 2022 (Pavlik, 2023).

With its combination of machine learning and natural language processing capabilities, ChatGPT is a cutting-edge tool that has been incorporated into many educational settings (Hasanein & Sobaih, 2023; Karataş et al., 2024). Several studies (Dempere et al., 2023; Kiryakova & Angelova, 2023; Strzelecki, 2023) have emphasized the benefits of using ChatGPT in the classroom. These benefits encompass providing teachers and students with continuous access to information, offering support to enhance learning, and improving language proficiency through vocabulary and grammar enhancements. Furthermore, it helps students prepare for tests and assignments, conduct research, and write academic articles without drawing attention to themselves from plagiarism detection software, which could be unethical (Obaid et al., 2023). Despite the benefits attributed to ChatGPT, recent research has brought forth significant concerns regarding its usage within educational contexts. Academic integrity and plagiarism concerns (Cotton et al., 2023), an excessive reliance on artificial intelligence (Crawford et al., 2023; Sok & Heng, 2024), false information (Karaköse, 2023; Zhuo et al., 2023), and biased learning assessment (Rasul et al., 2023) have been the main points of concern.

Although ChatGPT is expected to influence all areas of life, many scholars argue that its most profound effects will be seen in teaching, learning, and academic research (Dwivedi et al., 2023). As part of the broader digital transformation occurring in higher education, the integration of tools like ChatGPT represents just one example of how emerging technologies are reshaping teaching and learning practices. Accordingly, higher education has experienced significant transformation in recent years, primarily driven by technological advancements (Ali et al., 2024; Ansari et al., 2024). Growing research has explored the perceptions of students and faculty members concerning the use of ChatGPT for academic purposes in higher education (Dempere et al., 2023; Hasanein & Sobaih, 2023; Sok & Heng, 2024; Strzelecki, 2023). There seems to be limited number of studies (ElSayary, 2024; Jiang et al., 2024; Kamoun et al., 2024; Kiryakova & Angelova, 2023) that investigate how informed and competent academics are in using ChatGPT. In this context, academics' capacity, willingness, and efforts to adopt these new tools and methods remain a fundamental factor.

Historically, there is evidence that educators have not effectively utilized instructional technologies (Bingimlas, 2009; Gautreau, 2011). This lack of successful technology integration has led researchers to emphasize the importance of identifying factors that affect faculty adoption of instructional tools (Bingimlas,

2009). One key factor is how faculty perceive the use of technology in the classroom (Burch & Mohammed, 2019). Accordingly, in recent years, several studies have explored the adoption of AI technologies in higher education, with particular attention to how academics perceive and integrate these tools into their teaching and research. For instance, Almogren et al. (2024) investigated the factors that shape users' attitudes, intentions, and behaviors towards adopting ChatGPT. Kamoun et al. (2024) explored the "Knowledge, Attitude, and Perception (KAP)" towards ChatGPT among university students and academics. Mamo et al. (2024) examined the perceptions of academics on ChatGPT by the sentiments expressed by academics. Iqbal et al. (2022) conducted semi-structured interviews with 20 faculty members, yielding qualitative insights into their perceptions and attitudes toward ChatGPT. Barrett and Pack (2023) concentrated on the suitable application of Generative AI (GenAI) in writing processes using a survey approach. Their results indicated slight differences in opinions between students and teachers concerning acceptable GenAI usage in writing, highlighting the necessity for readiness regarding GenAI at both classroom and institutional levels. Çubukçu et al. (2017) emphasized the importance of identifying educators' perspectives on technology to achieve successful technology integration and support student success. From both theoretical and practical viewpoints, it is crucial to assess the impact of tools like ChatGPT on higher education teaching, and educators must carefully consider the advantages and disadvantages of integrating such technology into their instruction (Regnier et al., 2024). Therefore, it is important to explore the factors that could influence the adoption of ChatGPT in higher education. As with all educational technologies, academics play a central role in its implementation. Their involvement goes beyond simply gaining knowledge or skills (Ansari et al., 2024). Researchers like Bruggeman et al. (2021) highlight the need to understand the beliefs, attitudes, and perceptions of academics about technology. This is especially relevant since ChatGPT offers numerous benefits, including support for teaching activities (Cooper, 2023). Additionally, the capacity, readiness, and efforts of academics to embrace new tools and methods continue to be a crucial factor. Consequently, academics' beliefs and attitudes can greatly impact their practices (Bower et al., 2024; Cambra-Fierro et al., 2024). As a result, understanding the perceptions, attitudes, and practices of academics toward ChatGPT is critical not only for facilitating its effective integration into higher education but also for ensuring that its adoption aligns with ethical standards and enhances teaching and learning outcomes.

In Türkiye, as in other regions, the rapid development of AI technologies like ChatGPT has the potential to transform educational practices. However, there are unique challenges and opportunities within the Turkish context that must be explored. In the studies, students' opinions on the use of ChatGPT in education (Aktay et al., 2023; Durmus, 2024; Fırat, 2023; Kayalı et al., 2023), the role of ChatGPT in education based on literature review (Yigci et al., 2024), and the use of it on language learning process (Kavak et al., 2024) were investigated. Therefore, ChatGPT remains underexplored as a specific tool for teaching and research in Türkiye, particularly in how it can support educators in enhancing classroom discussions or automating administrative tasks. As a result, given the rapid

development of AI technologies like ChatGPT, which are expected to revolutionize teaching, learning, and administrative processes worldwide, there is a critical need to understand how Turkish educational science academics perceive and potentially integrate these tools into their work. This study addresses this gap by exploring the specific attitudes, challenges, and potential benefits of ChatGPT in Turkish educational institutions. By doing so, it will contribute valuable insights into how AI can be more effectively incorporated into the Turkish educational system, considering its unique challenges and opportunities.

Expanding on this foundation, our study investigates the extent of knowledge, attitude, and practices of the academics working in the field of educational sciences in Türkiye concerning ChatGPT. The research also explores the reasons why they use and do not use ChatGPT. In addition to these insights, the innovative aspect of our study lies in its methodology. In our study, we first administered a questionnaire to academics to assess their levels of knowledge, attitudes, and practices regarding the use of ChatGPT. This initial phase aimed to establish a baseline understanding of how academics perceive and engage with ChatGPT in educational settings. Following this quantitative assessment, we conducted qualitative interviews with academics who demonstrated high levels of engagement with ChatGPT. These interviews aimed to explore the specific purposes, benefits, concerns, and suggestions for improvement regarding ChatGPT usage. An important aspect of this study was conducting interviews with academics who have low levels of ChatGPT usage, aiming to identify their specific needs. For this purpose, we engaged with academics who indicated lower levels of practice with ChatGPT to explore their reasons for not using the technology and to identify their specific needs in this regard. This approach enabled us to perform a needs analysis study, shedding light on the requirements of academics who engage less with ChatGPT. While existing literature has touched upon academics' opinions regarding ChatGPT usage, combining quantitative data with qualitative insights allowed us to comprehensively examine both ends of the adoption spectrum—from enthusiastic adopters to hesitant non-users—providing valuable insights into the factors influencing ChatGPT adoption among academics in the field of educational sciences in Türkiye. By highlighting both the potentials and challenges of ChatGPT use in educational contexts, our research informs decisions regarding technology integration, curriculum design, and professional development initiatives aimed at enhancing digital literacy and ethical AI use among academics. Accordingly, the following research questions were addressed:

1) What is the knowledge, attitude and practice level of academics in using ChatGPT?
2) Do gender, prior training on technology use, and year of work experience variables influence academics' attitude regarding ChatGPT?
3) What are the reasons raised by academics related to ChatGPT usage?
4) What are the positive and negative consequences raised by academics related to ChatGPT use?
5) What are the suggestions of academics to use ChatGPT more efficiently?
6) What are the reasons of academics for not using ChatGPT?

To address the above questions, we adopted the Technology Acceptance Model (TAM), widely utilized to understand users' intentions to adopt new technologies (Davis, 1989; Silva, 2015). This model is widely recognized, especially in educational contexts (Shroff et al., 2011; Wojciechowski & Cellary, 2013), providing valuable understanding of how users perceive and behave towards adopting innovative technologies like generative AI. This model is based on the concept that technology adoption and use may be explained by an individual's own beliefs, attitudes, and intentions (Davis, 1989; Turner et al., 2010). TAM states that people's intentions to use technology are influenced by their attitudes towards the technology and how useful they think it is. People with a positive attitude toward a technology are more likely to intend to use it (Davis, 1989). Additionally, Marangunić and Granić (2015) proposed that TAM has undergone significant adaptations, with gender being highlighted as a contextual variable among them.

Furthermore, individual differences are recognized as pivotal in the acceptance of technology. Previous studies have identified these differences as key external variables that impact TAM (Nelson, 1990). Factors such as age, educational background, level of prior knowledge with similar technologies, and participation in IT-related training are critical in determining technology acceptance (Dahawy & Kamel, 2005). Empirical studies have consistently shown significant correlations between individual differences and IT acceptance across various contexts (Hong et al., 2002; Venkatesh, 2000). This research incorporates gender, educational level, and prior training related to technology use as individual difference variables relevant to understanding academics' attitudes towards ChatGPT. Therefore, this study aims to investigate how these factors relate to academics' adoption of ChatGPT, using the TAM framework to understand patterns of technology acceptance in this specific area.

2 Literature review

2.1 ChatGPT and education

The emergence and widespread adoption of new technologies, including the expansion of digital devices and the integration of AI have spurred a profound shift in educational resources and methods (Dwivedi et al., 2021). Most educational institutions have embraced this technological shift, adapting and implementing innovative tools (Bower et al., 2024). Since the introduction of the ChatGPT chatbot, educators have expressed both admiration and concern. Scholars have started sharing their speculations regarding the capabilities and potential implications of the program, given its proficiency in tasks like composing articles, addressing complex queries, accurately translating languages, solving scientific equations, coding, and summarizing books (Aydın & Karaarslan, 2022; Jiao et al., 2023; Lund & Ting, 2023; Zhai, 2022). As a result, ChatGPT has been evaluated across various disciplines, including language learning, pharmacy, law, and medicine, consistently yielding results that surpass average student scores (Choi et al., 2023; Huh, 2023; Nisar & Aslam, 2023). This has raised worries among academics that students could use ChatGPT

for plagiarism, cheating on assignments, or presenting generated academic content as their own. This concern has initiated discussions on whether ChatGPT and similar chatbots should be used for text creation, prompting ethical considerations. Legal considerations have also arisen regarding the classification of written works produced by ChatGPT as original content (Rudolph et al., 2023).

2.2 Opportunities for ChatGPT in educational applications

The digital transformation of education, led by ChatGPT, presents numerous opportunities for reshaping the educational landscape. With ChatGPT's integration into educational systems, a new era begins where teaching resources are managed, shared, and enhanced more effectively. Its advanced features enable educators and researchers to access superior teaching materials, thereby enhancing the learning experience. Moreover, ChatGPT doesn't just distribute resources; it also fosters the development of a modern educational environment that synergizes well with AI advancements. This collaboration is crucial for overcoming challenges introduced by digital progress. Furthermore, ChatGPT accelerates this digital change, advocating for a more inclusive and enriched educational system that embraces novel teaching philosophies and methodologies. By assisting in the selection of suitable digital tools, platforms, and materials, ChatGPT simplifies the incorporation of technology into teaching practices (Yu, 2024).

Research suggests that ChatGPT has the potential to aid teachers in creating high-quality assessments while simultaneously reducing their workload. When given instructions, ChatGPT functions as a powerful language generator that generates text that closely mimics human speech (Benuyenah, 2023). It can perform a wide range of natural language processing tasks, including text completions, translations, and chats (Strzelecki, 2023). While it may not generate creative outputs, ChatGPT enables teachers to introduce various evaluation forms as teaching tools in higher education, fostering innovation (Sullivan et al., 2023). Teachers can utilize ChatGPT to develop learning assessments such as monthly or semester tests, as well as projects or assignments (Gimpel et al., 2023). Additionally, educators can rely on ChatGPT to swiftly produce scenarios, quizzes, and exercises for assessing students' learning progress (Zhai, 2023). This streamlined assessment process was previously unattainable before ChatGPT and required extensive preparation time. By harnessing ChatGPT, teachers can reduce the time spent on routine tasks, allowing them to dedicate more time to refine assessment contents and enhance the quality of assessment items with greater critical thinking and creativity (Sok & Heng, 2023).

While assessment and feedback play pivotal roles in higher education, ChatGPT offers the potential to evaluate various forms of learning assessments and provide immediate feedback to students, thereby fostering their learning progress and saving teachers' time. According to Atlas (2023) and Ray (2023), ChatGPT can efficiently grade students' assignments automatically, mainly written tasks. This functionality enables teachers to promptly provide feedback to students on their essays (Mizumoto & Eguchi, 2023), enhancing the learning experience. Consequently, teachers can allocate more time to focus on other crucial aspects of teaching, such as offering

personalized support and participating in ongoing professional development (Sok & Heng, 2023).

Additionally, ChatGPT can empower teachers to create a variety of engaging and enjoyable activities, leading to increased student involvement. Through personalized recommendations, teamwork, and communication, ChatGPT can help students learn more efficiently (Rawas, 2023). As noted by Sabzalieva and Valentini (2023), teachers can promote collaborative learning by assigning students to work in teams and encouraging them to utilize ChatGPT to search for answers during classroom activities. Students can input prompts and follow-up questions to ChatGPT and then share their responses with their peers, with teachers facilitating discussions or debates. This approach allows students to take charge of class activities, promoting self-assessment and problem-solving skills (Rudolph et al., 2023). Moreover, by using ChatGPT-generated responses, students with different knowledge levels can participate in classroom activities, fostering critical thinking and problem-solving abilities (Kasneci et al., 2023). Therefore, integrating AI tools like ChatGPT into teaching practices optimizes instruction and encourages student collaboration in various classroom tasks.

2.3 Challenges and limitations of using ChatGPT in higher education

While ChatGPT offers numerous opportunities, its utilization in higher education also poses several challenges. Various researchers have highlighted concerns regarding academic integrity among students, citing the potential for misuse or unethical use of ChatGPT (Atlas, 2023; Cotton et al., 2023; Crawford et al., 2023; Eke, 2023; Sallam, 2023; Sok & Heng, 2023; Sullivan et al., 2023). These concerns include cheating, misuse, and plagiarism. Academic institutions and faculty members have expressed worries about the rising risks of cheating and plagiarism, as students employ ChatGPT to generate essays and complete assignments (Sabzalieva & Valentini, 2023). Misconduct in academic integrity may arise when students use ChatGPT to produce texts without proper citations, claiming them as their own work. However, Halaweh (2023) argued that it would not constitute plagiarism if researchers or students properly cited ideas generated by ChatGPT. It is also crucial to remember that as ChatGPT is an AI tool that can only work with the data set that it was trained on, the responses it produces could be erroneous and unreliable (Amaro et al., 2023). To address these issues, comprehensive training and guidance should be provided to students to ensure the ethical and responsible use of ChatGPT, safeguarding their academic success.

Studies also indicate that the outputs ChatGPT produces may be misleading (Day, 2023; Sallam, 2023; Wen & Wang, 2023), which could have negative consequences for users, especially teachers and students. One study assessing the prevalence of AI hallucinations in research proposals produced by ChatGPT revealed that out of 178 cited references, 69 did not have a DOI, with 28 of those being nonexistent (Athaluri et al., 2023). Another investigation focused on the credibility of references in medical articles generated by ChatGPT found that 47% of the 115 references were fabricated, while 46% were accurate but not authentic, and

only 7% were both authentic and accurate (Bhattacharyya et al., 2023). Furthermore, a study evaluating ChatGPT's capacity to generate reliable references for manual literature searches reported that of 35 citations produced, only two were genuine, 12 closely resembled actual manuscripts, and the remaining 21 were a mix of several real manuscripts, presenting plausible-sounding titles and authors but lacking authenticity (McGowan et al., 2023). Hügle (2023) discovered inaccuracies when asking ChatGPT to provide references for a literature search, as some suggested references were not found in Google or PubMed. Similarly, Day (2023) found that the references and citations generated by ChatGPT were not accurate. Consequently, students may be at risk of using false information, while teachers or researchers may encounter difficulties when using ChatGPT for instructional or research purposes. Therefore, users must carefully verify the responses generated by ChatGPT to prevent unethical or incorrect use of information, particularly in academic contexts. These findings underscore the challenges faced when relying on AI tools like ChatGPT for accurate citation generation, highlighting the necessity for critical evaluation and verification of references produced by such technologies.

ChatGPT can inadvertently produce harmful content, including hate speech and misinformation. Developing robust safety measures to mitigate these risks is necessary (Ray, 2023). Additionally, ChatGPT may reflect biases towards certain cultural and linguistic groups, resulting in skewed or inappropriate responses. Addressing these biases requires the formulation of diverse training datasets and evaluation metrics that encompass various cultures and languages (Sidiropoulos & Anagnostopoulos, 2024). Therefore, it is crucial to establish safeguards to prevent the creation of such content.

The convenience and advantages provided by ChatGPT can lead to an issue of excessive dependence on AI. This occurs when students use ChatGPT to generate entire written assignments or texts without applying their critical thinking skills. This reliance on ChatGPT can diminish students' motivation to conduct research and develop their own learning strategies (Farrokhnia et al., 2023). Consequently, students' learning outcomes may suffer if they rely solely on ChatGPT for their written work and neglect reflection and critical thinking (Fırat, 2023). Overreliance on AI can also hinder students' development of essential skills, such as problem-solving, critical thinking, reasoning, creativity, and reflection (Sok & Heng, 2024). Similarly, as researchers increasingly depend on sophisticated AI tools like ChatGPT, there is a danger of diminishing critical thinking and independent problem-solving skill among academics (Yu, 2023). To lessen these negative effects, it is crucial not to excessively depend on ChatGPT but rather to use it as a supportive tool for academic and research purposes.

In conclusion, while language models like ChatGPT hold immense potential to revolutionize higher education, their utilization also presents significant challenges and limitations. To address these challenges, it is essential to provide comprehensive training and guidance to ensure the ethical and responsible use of ChatGPT. By doing so, we can harness the potential of ChatGPT to enhance teaching, learning, and research in higher education while mitigating the associated risks and limitations.

2.4 The Turkish context: AI in education

Türkiye has made significant progress in integrating AI into its educational system, drawing attention to its potential to transform both policy and practice. Research on AI tools in education in Türkiye has primarily focused on general AI applications, such as intelligent tutoring systems and educational technology platforms (Savaş, 2021). Accordingly, various seminars and conferences have focused on AI applications and training related to education. For example, the Education Industry and Technology Institute has held six workshops on AI in Education (AIEd). According to the final report of the sixth workshop, "Smart Classroom Behavior Management" could be implemented through image processing technology. This system would use classroom-mounted cameras to capture photos at 30-second intervals, allowing the analysis of students' facial expressions and emotional states during the lesson. The data collected could then be relayed to the teacher, helping them understand which parts of the class engaged students and which parts were less effective in maintaining their attention (İçen, 2022).

As AI continues to gain prominence in Türkiye's higher education system, several new regulations and initiatives have been introduced to support its growth. The President of the Council of Higher Education recently announced the launch of 21 new undergraduate programs and 50 associate degree programs in fields such as AI, digitalization, and big data. Notably, undergraduate programs in Artificial Intelligence and Machine Learning, along with associate degree programs in Robotics and Artificial Intelligence, Software Development, and Artificial Intelligence Operations, are set to be established, reflecting the country's focus on AI-driven education and employment opportunities (YÖK [Council of Higher Education], 2024a). In parallel, the integration of Generative Artificial Intelligence (GAI) into higher education processes is gaining attention due to its potential to enhance education, research, and scientific publications. However, this development also necessitates the establishment of ethical guidelines to ensure that scientific integrity and trust in research are preserved. Higher education institutions and scholars are tasked with maintaining and promoting ethical standards, particularly as GAI becomes more embedded in academic work. Striking a balance between leveraging the full potential of AI technologies and exercising caution to avoid ethical risks is essential, ensuring that AI's role in education and research aligns with broader societal responsibilities (YÖK [Council of Higher Education], 2024b).

Turkish National AI Strategy has set ambitious goals, including positioning the country as a global AI hub by 2030, with a focus on achieving technological autonomy (Orman & Sebetci, 2022). Despite these advancements, AI's role in education has been given lower priority compared to its economic and geopolitical applications. Various government initiatives, such as the collaboration between the Ministry of National Education and Istanbul Technical University to create personalized AI-driven learning tools, as well as the "Artificial Intelligence Education for Children" project, represent efforts to embed AI in elementary education (Tamer & Övgün, 2020). While these initiatives aim to promote individualized and adaptive learning through AI, there remains a gap in the widespread use of AI within higher education institutions in Türkiye. Similarly, the specific role of AI-powered chatbots

like ChatGPT has not been extensively explored, creating a clear gap in understanding its impact on academic and pedagogical practices in Turkish higher education. In summary, while Türkiye has made significant progress in integrating AI technologies into various educational practices, the potential of tools like ChatGPT to transform higher education remains underexplored.

3 Methodology

3.1 Research design

This study embraced a mixed-method research design to address the research questions. Mixed-method research designs are characterized by the integration of both quantitative and qualitative research methodologies, allowing for a more holistic understanding of the phenomenon under investigation (Creswell, 2003). Within the framework of mixed-method research, we adopted an explanatory sequential design for this study. The explanatory sequential mixed design involves a systematic process wherein quantitative data are initially gathered and analyzed, followed by a qualitative inquiry to provide insights and further explain the quantitative findings (Creswell & Plano Clark, 2018).

In the quantitative phase of our study, we collected quantitative data to assess the knowledge, attitude, and practice levels of academics regarding the utilization of ChatGPT. Subsequently, in the qualitative dimension of the research, we collected qualitative data to explore further the viewpoints and experiences of academics regarding ChatGPT. The qualitative phase added depth to our understanding by examining the reasons behind the quantitative findings and providing valuable context. By employing both quantitative and qualitative approaches, this mixed-method design enabled a comprehensive exploration of academics' perceptions and practices regarding ChatGPT, thereby enriching the study's overall findings.

3.2 Data collection tools

Two data collection tools were used in this research. For quantitative data collection, the "KAP-C Questionnaire [Knowledge, Attitude, and Practice Regarding the Educational Use of ChatGPT]", developed by Robledo et al. (2023), was utilized. This questionnaire was designed to assess academics' knowledge, attitudes, and practices related to the use of ChatGPT. The questionnaire was prepared as a Google Form and sent to academics via email. All items in the questionnaire were marked as required to ensure data completeness and minimize potential data loss. The questionnaire included Likert-scale items to measure knowledge, attitude, and practice dimensions. Specifically, the knowledge dimension comprised 15 items with responses on a three-point Likert scale (true, false, I don't know). The attitude dimension consisted of 15 items with responses on a four-point Likert scale (strongly disagree, disagree, agree, strongly agree). The practice dimension included nine items with responses on a three-point Likert scale (yes, no, I don't know).

Qualitative data were collected through semi-structured interviews conducted with academics. Participants were selected based on their scores in the practice dimension of the quantitative questionnaire. Academics who scored high and volunteered to participate were included in one group, while academics who scored low were included in another group. The interviews aimed to explore academics' perspectives on the use of ChatGPT in more depth. Therefore, two semi-structured interview forms were prepared. The first interview form aimed to capture insights from academics who extensively utilized ChatGPT. Questions in this form were tailored to explore their experiences, challenges, and perceptions regarding ChatGPT integration into their teaching practices. Conversely, the second interview form was designed to gather opinions from academics who did not utilize ChatGPT. This form aimed to understand the reasons behind their decision to refrain from using ChatGPT and to uncover any potential barriers or concerns.

Based on established research aims and guidelines for developing semi-structured interview forms (Yıldırım & Şimşek, 2018), the interview forms underwent a thorough review by seven experts from various fields. These experts included three specialists in qualitative research, three in curriculum and instruction, and one in Turkish education. Incorporating their feedback, we made minor adjustments to improve the clarity and relevance of the interview questions. Specifically, we added one new question to address emerging themes in each form and revised one existing question for better clarity. The finalized semi-structured interview forms consisted of five questions for ChatGPT users and three questions for non-ChatGPT users. To ensure the effectiveness of the forms, pilot interviews were conducted with four academics using each form. Through this process, any ambiguities or discrepancies in the questions were identified and corrected, ensuring the reliability and validity of the interview instruments.

3.3 Participants

In the quantitative phase of the study, an online survey was sent via e-mail to academics working in various fields of educational sciences (including curriculum and instruction, educational administration, psychological counseling, and guidance) across different faculties of education in Türkiye. We searched the Council of Higher Education (YÖK) academic portal using relevant keywords, including "curriculum and instruction, educational administration, psychological counseling, and guidance," to determine the number of academics working in these fields in Türkiye. Based on this search, we identified the total number of academics in these areas. Subsequently, we contacted academics working in various faculties accordingly via email. In the research, which adopted convenience sampling, efforts were made to reach all academics, but responses were obtained only from 396 academics.

The margin of error for the sample was calculated using the following formula:

$$\text{Margin of Error} = Z * \sqrt{\frac{p * (1-p)}{n}} * \sqrt{N - n/N - 1}$$

Where

- N represents the population size (2388 academics),
- Z denotes the Z-value for a 95% confidence level (1.96),
- n indicates the sample size (396),
- p represents the most conservative estimate, which is 0.5.

As a result of the calculations made using this formula, the margin of error was found to be approximately 4.50%, depending on the sample size. This value shows that the results of our research are generalizable with a margin of error of $\pm 4.50\%$ within a 95% confidence interval (Dillman et al., 2014; Fowler, 2013).

Among the participants of the quantitative phase, 33.3% were female, and 66.7% were male. Work experience varied, with 34.6% having 10–15 years of experience and 19.7% having 16–20 years. In terms of age range, 56.6% fell between 30 and 40 years old, while 31.3% were between 41 and 50 years old. Furthermore, 29.3% of the participants had a master's degree, while 56.6% had a doctoral degree. While 66.7% of participants actively followed technological advancements, 66.4% reported not receiving formal technology training. Additionally, 66.4% of the participants reported using web 2.0 tools. Participants' technological competency was assessed, revealing that 37.9% rated their competency as moderate, and 39.9% rated it as good.

In the qualitative phase, we identified two distinct participant groups. These participants were categorized into high and low ChatGPT users based on their responses to the practice dimension of the KAP-C Questionnaire. The practice dimension consists of items rated on a three-point Likert scale, where the response options include *"I don't know"* as the third category. Participants' responses were used to calculate their average scores in this dimension, which directly reflected their level of ChatGPT usage in educational settings. Specifically, academics with average scores closer to 1 were classified as low ChatGPT users, while those with average scores closer to 2 were categorized as high ChatGPT users.

In addition to these calculated averages, we took further steps to ensure the reliability of our classification. Participants were asked to provide their email addresses in the survey, allowing us to contact them for follow-up interviews. Participation in the interviews was strictly voluntary, and this was clearly communicated in the initial survey invitation. To mitigate potential bias and confirm the accuracy of the categorization, during the interviews we asked participants directly whether they were actively using ChatGPT at the time. This allowed us to cross-check their reported usage from the survey and validate the classification into high and low usage groups. Therefore, the categorization of participants into high and low ChatGPT users was not only based on the practice dimension scores but was also verified through self-reported data during the interviews, ensuring a robust and reliable classification process.

Based on these calculations, the first group of participants consisted of academics who had high level of ChatGPT usage. Out of 58 academics who predominantly answered *'yes'* to the practice-related questions in our quantitative survey, 23 volunteered to take part in the qualitative phase. Within this group, there were 18 males and 5 females. Their work experience varied with 3 having 1–5 years, 3 having 6–10 years, 9 having 11–15 years, 7 having 16–20 years, and 1 having over 21 years. Regarding age distribution, 2 were between 20 and 30 years old, 12 were between 31

and 40, and 9 were between 41 and 50. Educational backgrounds included 16 with a doctoral degree and 7 with a master's degree. Eighteen of them closely followed technological developments, while 5 partially followed them. Eleven had received formal technology training, while 12 had not. Nineteen reported using web 2.0 tools, while 4 did not. Regarding technological competency, 13 rated themselves as good, 8 as moderate, 1 as weak, and 1 as very good.

Similarly, the second group of the participants consisted of academics with low level of ChatGPT usage. We determined their inclusion based on their scores in the practice dimension of the KAP-C Questionnaire. We sent online interview invitations to 45 academics who predominantly selected the *'no'* option for items in the practice dimension of the quantitative data collection tool. For the second group, we similarly confirmed their use of ChatGPT by directly asking about their current usage during the interview process. This specific question enabled us to validate their participation, ensuring accurate classification based on their responses to items in the practice dimension indicating lower levels of ChatGPT usage. Out of 45 academics, 23 volunteered to join the qualitative phase. Within this group, there were 14 males and 2 females. Their work experience varied: 1 had 5–10 years, 8 had 11–15 years, 4 had 16–20 years, and 3 had over 21 years of experience. Regarding age distribution, 6 were between 30 and 40 years old, 8 were between 41 and 50, and 2 were between 51 and 60. In terms of educational background, 13 held a doctoral degree, and 2 had a master's degree. Eleven of the academics closely followed technological developments, one did not follow technological developments, and 4 partially followed them. Five had received training in technology, while 11 had not. Eleven of them reported using web 2.0 tools, while 5 did not. Technological competency varied, with 6 reporting good competency and 10 as moderate.

3.4 Data collection process

To initiate the research, our first step involved gathering quantitative data using the KAP-C Questionnaire, which was formatted into a Google Form. In January 2024, the questionnaire's link was distributed via email to academics engaged in educational sciences across various universities in Türkiye. A notable response was received, with 396 academics actively participating in completing the questionnaire. This comprehensive data collection phase spanned approximately one month. After analyzing the quantitative data, we identified two groups of academics: those with high and low ChatGPT usage. In February 2024, we sent semi-structured interview forms electronically to these academics to gain deeper insights. The data collection for these interviews lasted about 20 days and was carefully conducted.

3.5 Data analysis

Frequency and percentage values of all items in the survey form were calculated. Academics' knowledge, attitude, and practice levels regarding the use of ChatGPT were interpreted based on frequency and percentage values. The distribution of data was examined to determine whether there were significant differences in academics'

attitudes towards ChatGPT usage based on gender, years of work experience, and prior training related to technology use. Skewness (−1.118) and kurtosis (.356) values fell within the range of −1.5 to +1.5 (Tabachnick & Fidell, 2013), and the significance level was above .05 ($p > .05$) in Shapiro-Wilk and Kolmogorov-Smirnov tests, indicating that the data followed a normal distribution. Parametric tests were therefore applied due to the normal distribution of the data. An independent samples t-test was used to determine significant differences based on gender and prior training related to technology use while ANOVA was employed for years of work experience variable.

The interview data with academics were analyzed using the content analysis technique. This method involves condensing and interpreting qualitative data to identify fundamental patterns and meanings extracted from extensive qualitative material (Patton, 2002). The main aim of content analysis is to uncover concepts that can explain the data gathered from interviews and the connections between these concepts (Yıldırım & Şimşek, 2018). The data collected from interviews with academics were transcribed into Microsoft Word documents. These documents were then imported into NVIVO 11 software for content analysis. Initially, descriptive codes were assigned to all expressions of judgment in the documents. Subsequently, it was assessed whether these codes shared common attributes. Following this assessment, codes displaying common characteristics were organized into categories. Similarly, categories exhibiting similar traits were clustered under the same theme. Once codes, categories, and themes were established, the data underwent a thorough review. During this review, the accuracy of the codes and themes, their alignment, and any discrepancies were addressed and rectified. The findings section presented the interview data with academics using frequencies (f). Additionally, real names of the academics were replaced with pseudonyms to ensure confidentiality. The participants' characteristics, such as their level of education and years of experience, were provided alongside their opinions.

3.6 Validity and reliability measures

In order to minimize factors that could negatively affect the validity and reliability throughout the study, certain measures were taken (Eroğlu & Bektaş, 2016; Uyar et al., 2021; Yıldırım & Şimşek, 2018). Information about the measures taken is presented in Table 1.

As seen in Table 1, various measures were taken to enhance both internal and external validity and reliability of the study. To ensure internal validity, expert opinions were sought before the interview form prepared for the research was implemented. The opinions of seven experts were obtained for the interview form prepared. Following this stage, the interview form was presented to four academics participating in the study to evaluate the readability and understandability of the questions. In order to ensure external validity, the model of the research, participants, data collection tools, data collection process, data analysis, and how the findings were organized were described in detail under the method title.

Table 1 Validity and Reliability Measures Taken in the Study

Validity	Internal Validity	Obtaining expert opinions
		Obtaining participant opinions
		Direct quotation
	External Validity	Explanation of data collection tools and process
		Explanation of data analysis process
		Explanation of participant characteristics
		Indication of participant selection method
		Description of the study implementation process
		Explanation of the rationale for choosing the method
		Explanation of validity and reliability measures
Reliability	Internal Reliability	Presentation of findings without interpretation
	External Reliability	Appropriate discussion of data in the results section
		Checking for consistency among the data

To ensure internal reliability, all findings were presented to the reader without interpretation. To ensure external reliability, the analysis was conducted by two different researchers, and these researchers calculated the agreement percentage by comparing the results of this analysis (Miles & Huberman, 1994). As a result of this calculation, it was determined that the agreement percentage was 95%. The researchers then compared the findings they obtained and agreed on the inconsistent findings. In addition, in order to ensure external reliability, the data were appropriately discussed in the results section.

4 Findings

Table 2 presents the academics' knowledge levels regarding the use of ChatGPT.

The findings from Table 2 reveal various beliefs and uncertainties. A significant majority of respondents acknowledge ChatGPT's potential to assist teachers with lesson planning (81.3%) and aid students with their coursework (87.9%). However, uncertainty exists about specific functionalities, like providing instant pronunciation feedback (46.5%) or grading student assignments (39.9%). These findings show diverse perspectives among academics, revealing confidence in some of ChatGPT's abilities while also noting skepticism and uncertainty about others. Table 3 presents the attitude level of the academics towards the use of ChatGPT.

A large majority of academics (92.9%) believe that ChatGPT is useful for answering questions, showing it's widely seen as beneficial in education. However, trust in ChatGPT's responses varies: 40.4% of respondents express some level of skepticism. Despite 84.9% recognizing its potential to transform information access, ethical concerns are evident: 37.3% are concerned about its ethical implications, and 24.7% think using it for academic assignments is unethical. Table 4 presents the practice level of the academics towards the use of ChatGPT.

Table 2 Academics' Knowledge Levels Regarding the Use of ChatGPT

Items		True	False	I Don't know
1. ChatGPT uses artificial intelligence to generate human-like responses.	f	348	12	36
	%	87.9	3.0	9.1
2. ChatGPT can only provide answers in English.	f	12	328	56
	%	3.0	82.8	14.1
3. ChatGPT responses are 100% accurate.	f	16	316	64
	%	4.0	79.8	16.2
4. ChatGPT is designed to provide human-like conversations.	f	236	64	96
	%	59.6	16.2	24.2
5.ChatGPT is trained on a diverse range of topics.	f	298	28	70
	%	75.3	7.1	17.7
6. ChatGPT is a commercial product and is not for free.	f	130	192	74
	%	32.8	48.5	18.7
7. ChatGPT can only provide text-based responses	f	112	198	86
	%	28.3	50.0	21.7
8. ChatGPT responses are generated by a pre-programmed algorithm	f	230	74	92
	%	58.1	18.7	23.2
9. ChatGPT can check and grade student assignments.	f	148	90	158
	%	37.4	22.7	39.9
10. ChatGPT can help teachers with lesson planning.	f	322	10	64
	%	81.3	2.5	16.2
11. ChatGPT can be used to assist students with their coursework	f	348	4	44
	%	87.9	1.0	11.1
12. ChatGPT can be integrated with virtual learning environments.	f	308	10	78
	%	77.8	2.5	19.7
13. ChatGPT can create essays and articles about a specific topic.	f	308	22	66
	%	77.8	5.6	16.7
14. ChatGPT can provide additional teaching resources and learning materials for students.	f	308	30	58
	%	77.8	7.6	14.6
15. ChatGPT can provide instant feedback on pronunciation.	f	166	46	184
	%	41.9	11.6	46.5

A significant majority (59.1%) indicated that they can use ChatGPT for remote or online education, highlighting its potential in facilitating distance learning. However, it was observed that only a minority (5.3%) usually review and revise the outputs of ChatGPT before using or submitting them. Interestingly, a substantial proportion (39.1%) reported using third-party paraphrasing tools to avoid plagiarism detection. Moreover, while a considerable number (57.6%) use ChatGPT to get an initial idea about specific topics, fewer academics (13.6%) use it more often than Google Search. Additionally, a notable proportion (46.5%) use ChatGPT to explain complicated concepts or topics. However, an almost equal

Table 3 Academics' Attitude Levels Towards the Use of ChatGPT

Items		Strongly Disagree	Disagree	Agree	Strongly Agree
1. I find ChatGPT helpful in answering questions.	f	8	20	253	115
	%	2.0	5.1	63.9	29.0
2. I trust the responses provided by ChatGPT.	f	14	146	230	6
	%	3.5	36.9	58.1	1.5
3. I find ChatGPT responses to be accurate.	f	14	108	272	2
	%	3.5	27.3	68.7	0.5
4. I find ChatGPT to be a useful tool for learning.	f	6	60	236	94
	%	1.5	15.2	59.6	23.7
5. I believe ChatGPT has the potential to revolutionize the way we access information.	f	5	56	224	112
	%	1.0	14.1	56.6	28.3
6. I am concerned about the ethical implications of using ChatGPT.	f	14	58	190	134
	%	3.5	14.6	48.0	33.8
7. I believe that using ChatGPT to complete academic assignments is unethical.	f	50	102	146	98
	%	12.6	25.8	36.9	24.7
8. I believe that students and teachers should be allowed to use ChatGPT in the classroom.	f	34	132	184	46
	%	8.6	33.3	46.5	11.6
9. I believe that using ChatGPT for academic purposes should be discouraged.	f	68	162	121	45
	%	17.2	40.9	30.6	11.4
10. I believe that ChatGPT should be banned in all schools and academic institutions.	f	146	200	43	7
	%	36.9	50.5	10.9	1.8
11. I believe that the use of ChatGPT for academic purposes undermines the learning process.	f	42	178	132	44
	%	10.6	44.9	33.3	11.1
12. I think that the use of ChatGPT for academic purposes should be monitored and regulated.	f	12	56	242	86
	%	3.0	14.1	61.1	21.7

Table 3 (continued)

Items		Strongly Disagree	Disagree	Agree	Strongly Agree
13. I think people who use ChatGPT for academic purposes are cheating.	f	48	198	122	28
	%	12.1	50.0	30.8	7.1
14. I think that schools and educators should educate students on the dangers of relying on ChatGPT for academic purposes.	f	11	40	229	116
	%	2.8	10.1	57.8	29.3
15. I think ChatGPT is useful when used correctly and monitored accordingly.	f	5	18	209	164
	%	1.3	4.5	52.8	41.4

Table 4 Academics' Practice Levels for the use of ChatGPT

Items		Yes	No	I Don't know
1. I can use ChatGPT for remote or online education.	f	234	47	115
	%	59.1	11.9	29.0
2. I usually review and revise the outputs of ChatGPT before using or submitting them.	f	300	21	75
	%	75.8	5.3	18.9
3. I use third-party paraphrasing tools (e.g., *Quill Bot) to avoid plagiarism detection.*	f	118	155	123
	%	29.8	39.1	31.1
4. I use ChatGPT to get an initial idea about specific topics.	f	228	135	33
	%	57.6	34.1	8.3
5. I use ChatGPT more often than Google Search.	f	54	331	11
	%	13.6	83.6	2.8
6. I use ChatGPT to confirm my ideas or arguments.	f	140	231	25
	%	35.4	58.3	6.3
7. I use ChatGPT to explain complicated concepts or topics.	f	184	185	27
	%	46.5	46.7	6.8
8. I use ChatGPT for educational purposes only.	f	128	233	35
	%	32.3	58.8	8.8
9. I use ChatGPT to make my work easier and fast.	f	242	131	23
	%	61.1	33.1	5.8

number (58.8%) reported using ChatGPT for purposes beyond education, suggesting a broader application scope.

Table 5 presents the findings regarding whether there is a significant difference in academics' attitudes towards the use of ChatGPT based on gender.

There is no significant difference in academics' attitudes towards ChatGPT usage based on gender ($t(394) = -.273$, $p > .05$). Analysis findings regarding whether there is a significant difference in academics' attitudes towards ChatGPT usage based on prior training on technology use variable are presented in Table 6.

Table 5 Academics' Attitudes towards ChatGPT Usage Based on Gender

Variable	Gender	N	$\overline{X}$	S	DF	t	p
Attitude Towards the Use of ChatGPT	Female	132	2.76	.33	394	−.273	.785
	Male	264	2.77	.25			

Table 6 Academics' Attitudes towards ChatGPT Usage Based on Prior Training on Technology Use

Variable	Prior Training on Technology Use	N	$\overline{X}$	SS	DF	t	p
Attitude Towards the Use of ChatGPT	Yes	141	41.23	3.63	394	−.890	.374
	No	255	41.63	4.62			

No significant difference was obtained in academics' attitudes towards ChatGPT usage based on prior training on technology use variable ($t_{(394)} = -.890$, $p > .05$). Table 7 presents the analysis regarding academics' attitudes towards ChatGPT usage based on years of work experience variable.

There is a significant difference in academics' attitudes towards ChatGPT usage based on years of work experience [$F(4, 391) = 3.837$, $p < .05$]. Academics with 10–15 years and 16–20 years of work experience exhibited higher attitudes towards ChatGPT usage compared to academics with 21 and above years of work experience.

Fig. 1 presents the academics' purposes of using ChatGPT.

Academics have a diverse range of purposes for using ChatGPT, including conducting research, language help, and error correction, and aiding in educational activities. The sample opinions containing the purposes of using ChatGPT are provided below.

Figen, who is a PhD graduate and has 16–20 years of work experience, stated her opinions as follows: *"I use it extensively in my work. I use it for purposes such as paraphrasing, reducing similarity, and interpreting my findings during the article writing process. However, I use it in my classes, to provide samples to students. I also use it for proofreading. I use it to check whether an English text I wrote is linguistically correct. Sometimes I employ ChatGPT to aid in the development of written content."*

Seda, who is a PhD graduate and has 6–10 years of works experience, stated that *"I use it for researching the meaning of unknown words, preparing lesson plans, and planning my academic research."* Okan, who is a PhD graduate and has 11–15 years of work experience, expressed his ideas on using ChatGPT as: "*I use ChatCPT to create lesson plans, prepare presentations, and conduct literature review."* Lastly, Kenan, a PhD graduate with 16–20 years of work experience, stated that *"I generally use it to prepare materials for my courses and exam questions. I use it when making some linguistic corrections in scientific studies. I use it when writing resumes. Whenever I have any questions in my daily life (even on topics such as agriculture, animal husbandry, education, transportation, etc.), I ask ChatGPT, and I get very good answers. I also use it when replying to emails. "I also use it as a translation tool."*

The concerns of the academics about the use of ChatGPT are given in Fig. 2.

Academics mentioned various concerns regarding the use of ChatGPT. These concerns encompass ethical issues such as plagiarism potential, lack of accuracy, and providing irrelevant information. The following are sample opinions expressing concerns regarding the use of ChatGPT.

Kerem, who is a PhD graduate and has 6–10 years of work experience, stated his concerns as *"Yes, there are direct sources in scientific studies. It should not be used as. It may cause plagiarism. You need to think like an assistant. In addition, it should be checked when used; it may provide incorrect information or information in a different field or outside the desired field."* Recep, who is a PhD graduate and has 11–15 years of work experience, stated that *"There is an issue of ethics. People can even print the article. It is also used in data analysis. Therefore, it needs to be inspected. I have intense doubts about trust. However, I think it is*

Table 7 Academics' Attitudes towards ChatGPT Usage Based on Yeasr of Work Experience

Variable	Year of work experience	n	$\overline{X}$	SD	S.V.	Sum of Squares	DF	Mean of Squares	F	p	Difference
Attitude Towards the Use of ChatGPT	1–5	62	2.73	.22	Between groups	1.224	4	.306	3.837	.005	3 > 5 4 > 5
	6–10	70	2.73 2.80	.26	Within groups	31.189	391	.080			
	11–15	137	2.82	.24	Total	32.413	395				
	16–20	78	2.65	.39							
	21 and above	49		.25							

1: 1–5 year of work experience, 2: 6–10 year of work experience, 3: 11–15 year of work experience, 4: 16–20 year of work experience, 5: 21 and above year of work experience

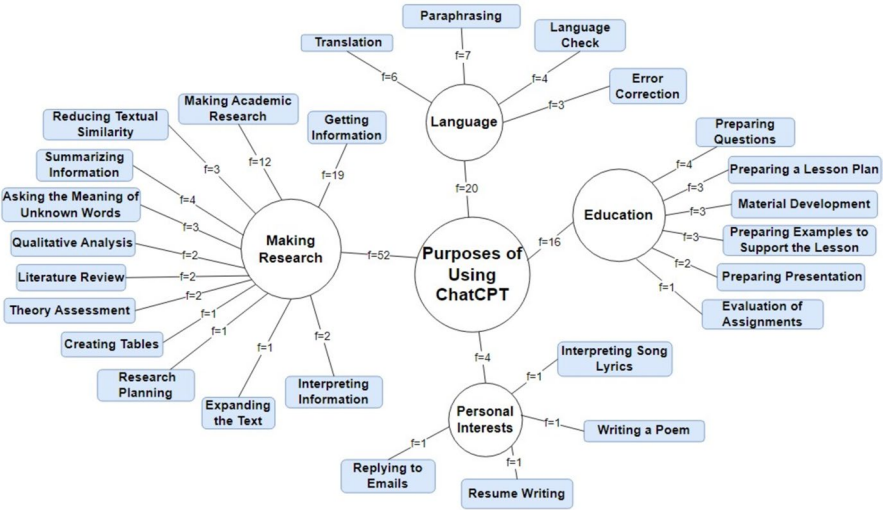

Fig. 1 Purposes of Using ChatGPT

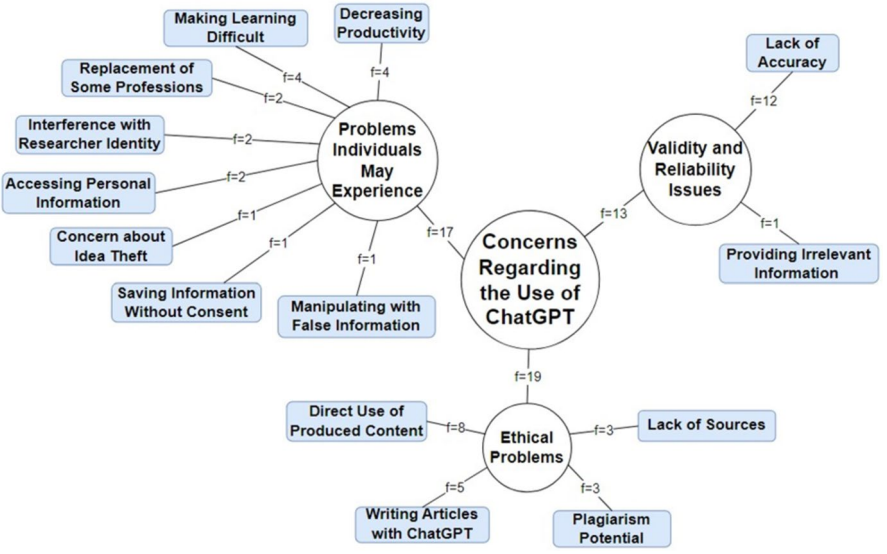

Fig. 2 Concerns Regarding the Use of ChatGPT

a problem that people can hold back from reviewing the literature while doing research. Researcher identity may be negatively affected. Although it is not a problem for individuals who truly care about their personal and academic development, the opposite is also possible."

Ayşe, who holds a doctoral degree and has 11–15 years of work experience, expressed her concerns about the potential impact of ChatGPT on various professions and individuals' productivity as follows: *"Frankly, I think it may cause unemployment in some professions as it will reach a level where many resources and perhaps future people will be able to do the job they do. It already seems like he has taken away the jobs of translators. Ethically, having students use this place directly for their homework may hinder their efforts to produce."*

Academics' opinions on the benefits of ChatGPT are given in Fig. 3.

The academics highlighted several benefits of using ChatGPT across different domains. They emphasized that ChatGPT provides benefits in terms of their educational processes and academic studies. Some of the sample opinions expressing the benefits of ChatGPT are expressed below.

Fatih, who is a PhD graduate and has 16–20 years of work experience, said that "*Instead of searching on Google, ChatGPT compiles more summary and directly targeted information. It provides me with results that are more suitable and concise for my purpose."*

Figen, who is a PhD graduate and has 65–20 years of work experience, mentioned the benefits of ChatGPT as *"I can use it to present more examples to students in my classes. "When I give detailed information about the students' level and the*

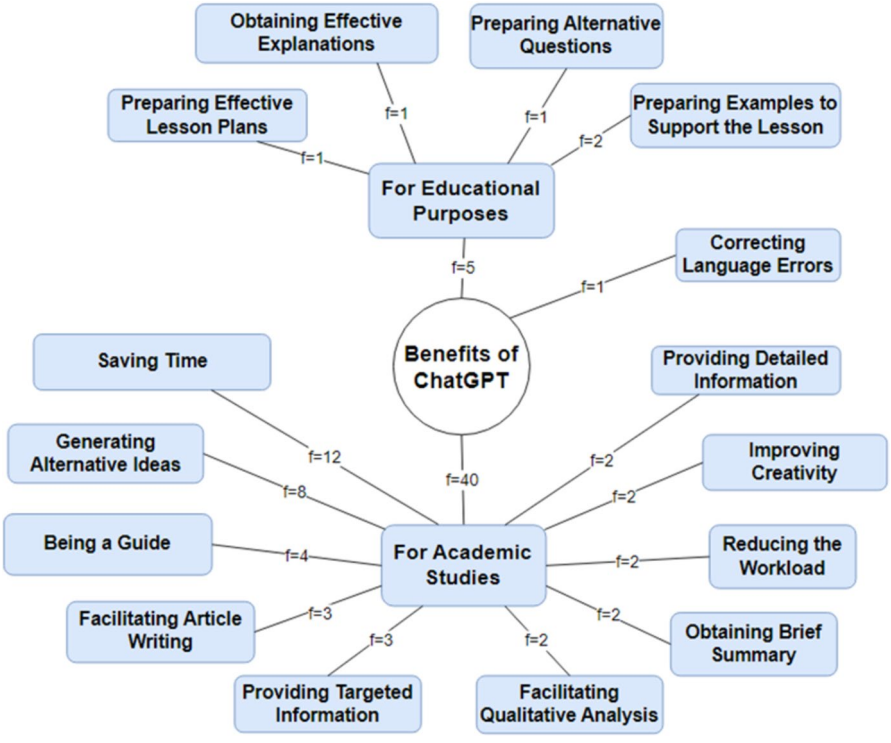

Fig. 3 Benefits of ChatGPT

characteristics of the examples I want, the chat application provides the types of examples I want."

Cem, who is a PhD graduate and has 16–20 years of work experience, stated that *"ChatGPT contributes a lot when writing articles. By rewriting the texts without changing the meaning, it saves the text from plagiarism. It allows an article to be published in a shorter time, thus saving time. It provides an interpretation of my findings. This helps me a lot. It detects and corrects my spelling or punctuation errors."*

Academics' opinions about the problems they experienced in the use of ChatGPT are given in Fig. 4.

Academics mentioned various problems encountered in the use of ChatGPT. User experience-related issues, language and information quality-related problems, and accessibility-limitations problems were emphasized. The followings are sample opinions expressing the academics' problems regarding the use of ChatGPT.

Nihat, who is a PhD graduate and has 16–20 years of work experience, expressed his ideas as *"Sometimes it may misunderstand the prompts you give. Or you can mislead ChatGPT with prompts. Not every piece of information it provides may be 100% valid. It may be necessary to check again from a known source."*

Aslı, who has a bachelor's degree and has 16–20 years of work experience, said that; *"Sometimes it doesn't fully understand the commands I give. There are times when we cannot communicate."*

Kerem, who is a PhD graduate and has 6–10 years of work experience, said that he had problems due to the limited features of the free version of ChatGPT as follows. *"It is actually a simple application, but since it is a paid version, some features of the free version are limited."*

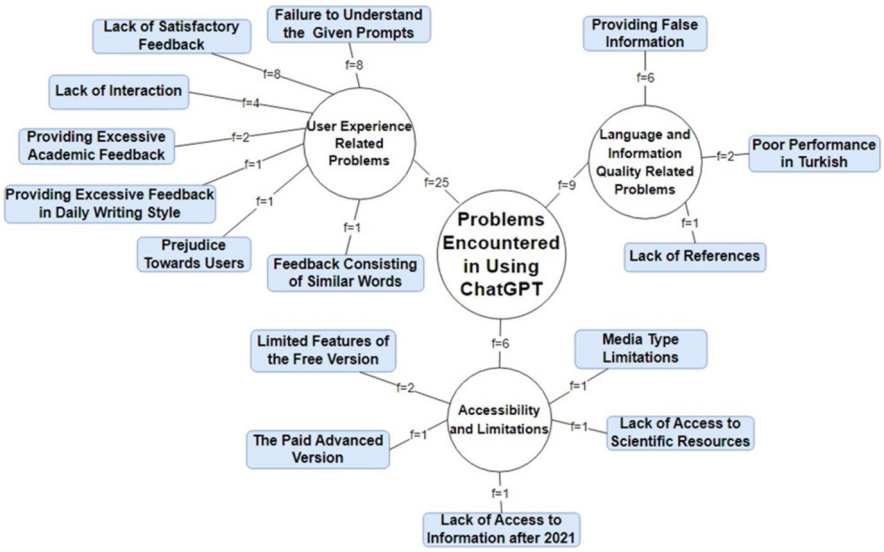

Fig. 4 Problems Encountered in Using ChatGPT

Academics' recommendations on the development of ChatGPT are given in Fig. 5.

The academics emphasized the importance of information check and reliability, user experience and training, data access and reaching current data, and content integration and diversity enhance the overall functionality and effectiveness of ChatGPT. Some of the sample opinions regarding recommendations to improve ChatGPT are given below.

Ferhat, who is a PhD graduate and has 16–20 years of work experience, made his recommendation as follows: *"It needs to be controlled somehow and provide reliable information. I think preventing plagiarism is the most important issue."* Cem, who is a PhD graduate and has 16–20 years of work experience, stated that *"It will be very beneficial if the text can be written by including in-text and extra-text sources while writing an article."* Semih, who is a PhD graduate and has 11–15 years of work experience, expressed his suggestions as *"It would be better if he colored his answers according to his level of certainty."*

Academics' opinions on using ChatGPT effectively are given in Fig. 6.

Recommendations of the academics included providing training to users, expanding its use in education, checking the reliability of information, reducing user prejudices, and editing and using the content aim to ensure that ChatGPT is used efficiently and effectively. Some of the sample opinions are presented below:

Fatih, who is a PhD graduate and has 16–20 years of work experience, made his suggestions by saying, *"It can be given as a part of courses in educational institutions. Studies can be carried out to expand the use of this platform. The use of ChatGPT can be encouraged in the preparation of assignments."* Kenan, who is a PhD graduate and has 6–10 years of work experience, suggested that in

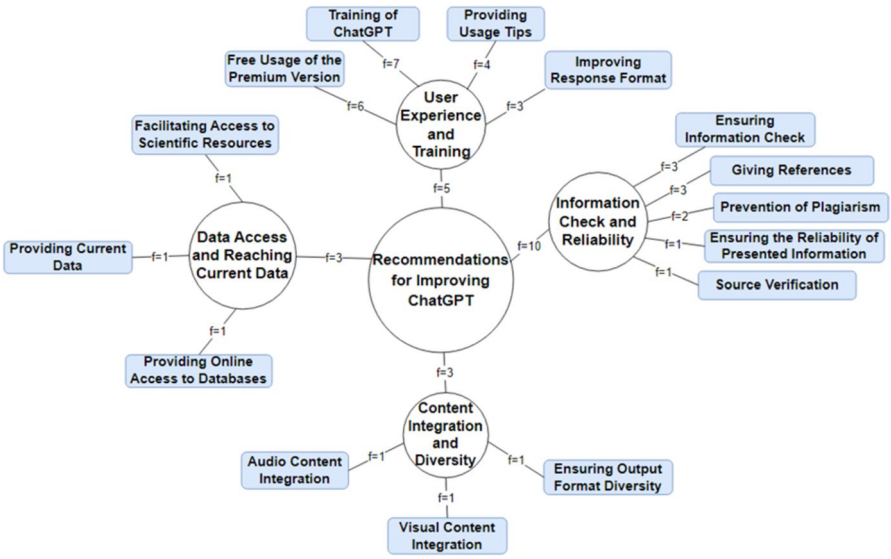

Fig. 5 Recommendations for Improving ChatGPT

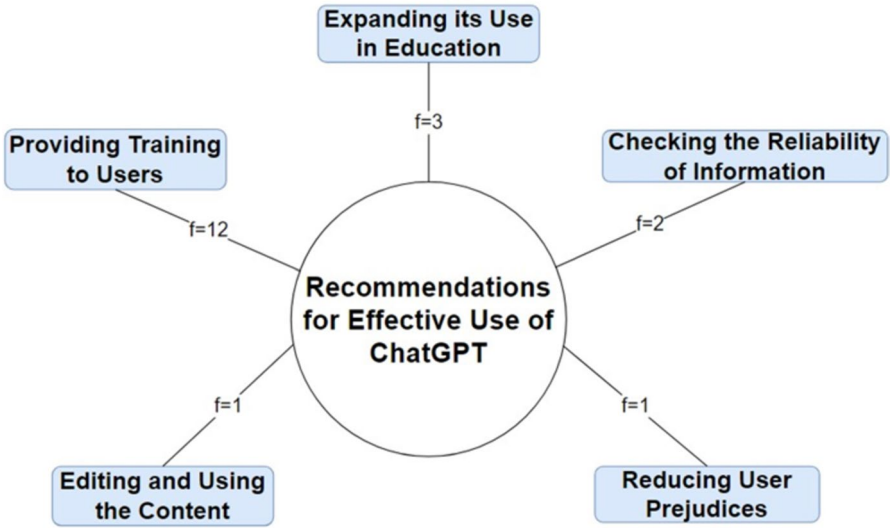

Fig. 6 Recommendations for Using ChatGPT Effectively

order for ChatGPT to be used effectively, the reliability of the information should be investigated, and the content should be corrected and used. He stated his opinions as follows: *"ChatGPT itself says that the information may not be completely accurate. Therefore, the reliability of the information he provides should be investigated. Corrections and improvements should be made with small touches rather than directly using the information it provides. I think you didn't get the information by direct plagiarism. It can be used as an assistant."*

Academics' opinions about the reasons for not using ChatGPT are given in Fig. 7.

Among the reasons for not using ChatGPT, the academics emphasized lack of information and skills, and their concerns related to ethical problems and fostering a culture of dependency. Some of the sample opinions are presented below:

Serhat, who has 16–20 years of work experience and a PhD degree, stated that he does not use artificial intelligence applications because they are not digitally literate, and their applications may cause ethical problems. He expressed this as follows: *"I do not use it because there are ethical problems and the potential to prepare us."* Leyla with 11–15 years of work experience and a master's degree stated that she does not use artificial intelligence applications because she is not open to innovations by saying: *"I am not a person who is very open to innovations. It takes time to adapt to new technologies and developments. Once I get used to them, they become tools that I cannot give up."* Berke, who has over 21 years of work experience and a PhD degree, does not use artificial intelligence applications because they may cause ethical problems, he does not feel the need to use it and he does not know its benefits. He expressed his ideas as follows: *"I do not have sufficient information about the purposes and benefits of artificial intelligence in teaching-learning processes. Additionally, I do not feel the need to use artificial intelligence in teaching-learning*

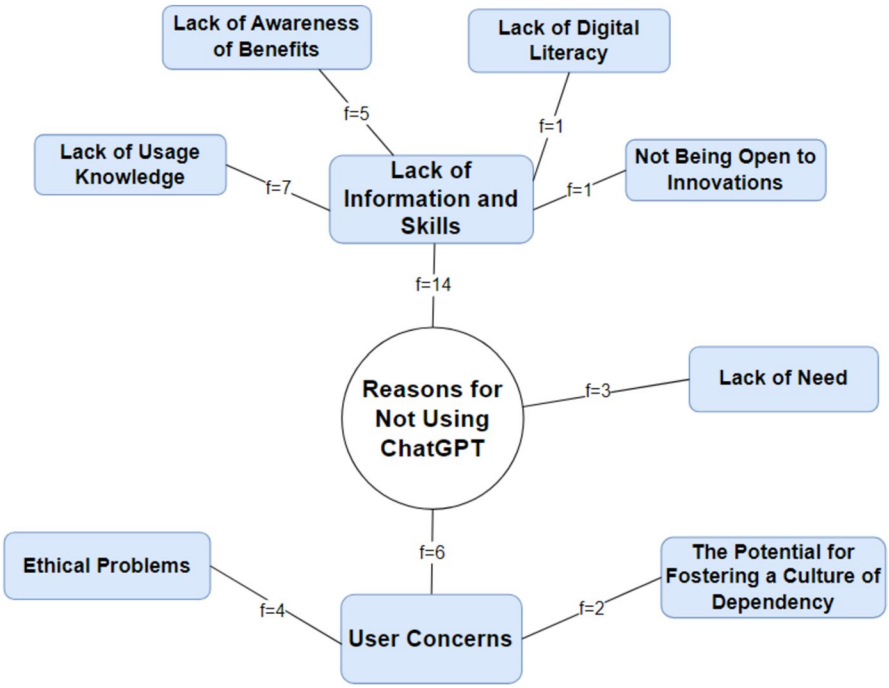

Fig. 7 Reasons for Not Using ChatGPT

processes. Apart from this, I perceive the negative behavioral gains and ethical problems that will arise from the use of artificial intelligence as a threat."

5 Discussion

The research aimed to examine academics' perspectives on using ChatGPT, and the findings align with previous studies on attitudes toward AI technologies. A significant portion of the academics were found to be familiar with ChatGPT. This level of awareness can have positive implications for the effective integration of ChatGPT into various educational and professional contexts. In a similar vein, Abdelhafiz et al. (2024) found that a substantial majority of the researchers were aware of the usage of ChatGPT. Additionally, a significant majority of academics either agreed or strongly agreed that ChatGPT is helpful in answering questions, indicating a widespread recognition of its utility as an educational tool. The present findings are consistent with previous studies. For instance, Syed et al. (2024) found that over half (68.7%) of academics and researchers had positive attitudes toward ChatGPT, with only 3.0% expressing negative views. Similarly, Abdelhafiz et al. (2024) reported favorable attitudes, noting that 42.5% of respondents were willing to use ChatGPT in the future, and 51.5% considered it highly beneficial for academic writing. In their study, Kamoun et al. (2024) obtained that the knowledge level of the academics on

ChatGPT was at moderate level. They also found thar academics' attitude towards ChatGPT appeared to be comparatively more reserved. In the study conducted by Hasanein and Sobaih (2023), academics mentioned that the ChatGPT tool has both positive and negative aspects. Limna et al. (2023) and Kiryakova and Angelova (2023) also found that university professors had positive attitudes toward integrating ChatGPT and similar generative tools in their teaching activities. Jiang et al. (2024) revealed that among the 3000 analyzed tweets, recorded attitudes towards using ChatGPT for learning were mostly positive rather than negative. However, Iqbal et al. (2022) reported a rather negative attitude toward ChatGPT.

The responses obtained from the practice sub-dimension suggest that ChatGPT is utilized for a diverse range of purposes, including education, getting information, idea generation, and productivity enhancement. These factors have been highlighted in various studies. Smith et al. (2023) emphasized the importance of usability and perceived benefits in encouraging user engagement, while Almogren et al. (2024) explored how trust and feedback quality influence user acceptance. Syed et al. (2024) found that academicians and researchers used ChatGPT for problem solving, for information gathering, and content generation. However, Abdelhafiz et al. (2024) revealed that 11.5% of the researchers used ChatGPT in their work for rephrasing paragraphs and finding references, for data analysis, and for writing parts of academic articles. Factors influencing the acceptance of ChatGPT in higher education involve a range of elements that shape users' perceptions and attitudes towards this innovative technology. Usability is a key consideration, as users place high value on how easy and intuitive it is to interact with ChatGPT (Papaioannou et al., 2023). The perceived advantages of ChatGPT, including its ability to offer personalized assistance, encourage collaborative problem-solving, and improve learning experiences, significantly contribute to its acceptance. Users' trust in the technology—stemming from their confidence in its reliability, accuracy, and security—also influences their willingness to utilize it. Furthermore, the quality of feedback from ChatGPT is crucial, as users appreciate responses that are timely, relevant, and constructive (Almogren et al., 2024). These findings underscore the need for continued exploration of the ethical and pedagogical implications of ChatGPT use, as well as the development of guidelines to promote responsible and effective utilization in various contexts.

The findings indicated that academics' attitudes towards ChatGPT usage did not differ significantly in terms of gender variable. This implies that both male and female academics hold similar perceptions and attitudes regarding the utilization of ChatGPT technology. The research on gender differences in technology use shows that males and females interact with digital tools in both similar and different ways. It can also be argued that in the context of ChatGPT, academics view its usefulness and ease of use similarly, regardless of gender. Similarly, Kamoun et al. (2024) found that knowledge, attitude and practice levels of the academics in terms of ChatGPT did not differ in terms of gender variable. However, Okazaki and Renda dos Santos (2012) discovered that there are significant differences between male and female faculty members in terms of adoption of e-learning tools. The study of Akgün (2019) revealed that male faculty members held more positive views regarding the acceptance and use of technology compared to female faculty members.

Previous studies in the literature also highlight that males hold much more positive views regarding technology acceptance compared to females (Huffman et al., 2013; Sanchez-Franco, 2006; Venkatesh & Morris, 2000). Bouzar et al. (2024) found that male users reported spending more time using ChatGPT, whereas female users exhibited a higher frequency of usage. Research exploring the relationship between teacher gender and technology adoption suggests that female educators generally integrate computers and/or technology less frequently into their teaching compared to male teachers. This difference is often attributed to factors such as limited access to technology, varying levels of interest, and differing skill levels (Kay, 2006; Wozney et al., 2006). Despite technological advancements, there persists a societal perception that technology is more suited to males than females. Research reinforces this difference, revealing that females tend to approach technology differently compared to males (Liaw, 2002). For instance, female educators may exhibit less enthusiasm and assign lower importance to technology in educational settings relative to their male counterparts. Conversely, male educators often display greater interest and confidence in integrating technology into teaching practices. Consequently, these differences may dissuade females from pursuing careers in technology-related fields, despite the absence of explicit evidence suggesting limited opportunities for women in the computing industry (Anderson et al., 2008). Broos (2005) also notes that males generally exhibit more excitement and a more positive outlook towards new technologies compared to females, who typically approach them with caution and may require more time to embrace unfamiliar technological advancements. However, Teo et al. (2015) obtained no statistical gender group difference on three TAM constructs. Although, numerous studies have highlighted notable differences between males and females in their attitudes towards computers and technology, this difference was not confirmed in this study. This finding is significant because it suggests a level of gender equality in the acceptance and adoption of ChatGPT among academics. It aligns with broader trends in technology acceptance research, where gender differences in attitudes towards technology have been observed in various contexts. However, in the case of ChatGPT, these differences do not seem to manifest significantly among academics. Such a result could indicate that factors other than gender might have a greater influence on attitudes towards this tool.

The finding that there was no significant difference in academics' attitudes towards ChatGPT usage based on prior training in technology use suggests several possibilities. It could indicate that the training received by academics, regardless of its extent or depth, did not significantly influence their attitudes towards adopting ChatGPT. Alternatively, it might imply that other factors beyond basic technological training—such as personal beliefs, institutional support, or perceived usefulness of ChatGPT—play a more decisive role in shaping academics' attitudes towards this technology. Acosta-Enriquez et al. (2024) indicated that factors such as prior experience with technology can profoundly influence perceptions and attitudes toward ChatGPT. Menon and Shilpa (2023) indicated that individuals with more technology experience may find ChatGPT more user-friendly and helpful. This finding underscores the complexity of technology acceptance, highlighting that mere exposure to technology through training may not necessarily translate into a more positive attitude towards its use in specific contexts like academic research or teaching. Future

research could delve deeper into the specific components and quality of technology training that might impact attitudes towards emerging technologies like ChatGPT among academics.

The finding suggests an intriguing pattern regarding academics' attitudes towards ChatGPT usage in relation to their years of work experience. Specifically, academics with 11–15 years and 16–20 years of work experience showed higher levels of acceptance and positive attitudes towards using ChatGPT compared to those with 21 and above years of work experience. From the TAM perspective, this pattern may reflect how mid-career academics are more receptive to new technologies, perceiving both the usefulness and ease of use of ChatGPT (Turner et al., 2010). Research suggests that mid-career professionals are often at a stage where they balance expertise with an openness to innovation, which may explain their willingness to incorporate AI tools in their work. Strzelecki et al. (2024) revealed that age significantly moderates the relationship between perceived value and behavioral intention to pay for ChatGPT, with older academics being less willing to invest in the tool. This is likely due to increased resistance to new technologies, and a preference to rely on their own experience over AI tools as they age. Venkatesh and Davis (2000) found that users with more extensive work experience often perceive less value in learning and integrating new systems into their workflow. This aligns with findings by Morris and Venkatesh (2000), who suggest that individuals with more experience tend to be more skeptical of new technologies, perceiving them as unnecessary disruptions to well-established practices. Menon and Shilpa (2023) indicated that older individuals may find ChatGPT more difficult or less valuable. Therefore, this reluctance may not solely reflect resistance to ChatGPT but also a broader preference for familiar, trusted methods over emerging AI tools. Similarly, many studies have also found a significant relationship between age and technology acceptance and usage (Porter & Donthu, 2006; Bağlıbel et al., 2010: Akgün, 2019). However, Kamoun et al. (2024) found that knowledge, attitude and practice levels of the academics in terms of ChatGPT did not differ in terms of years of work experience variable. The finding of our study related to age factor may imply that academics with 10–20 years of work experience may perceive ChatGPT as more useful for enhancing their teaching, research, or administrative tasks, and may find it easier to integrate into their existing workflows compared to those with over 21 years of work experience. Furthermore, academics who have been in their positions for a longer time may have established habits or preferences for traditional approaches. As a result, they might be more hesitant or less interested in adopting new technologies such as ChatGPT. This reluctance could arise from worries about having to learn new skills, concerns that using ChatGPT could disrupt their established ways of working, or doubts about how useful the new technology really is. In practical terms, these findings suggest that when implementing technologies such as ChatGPT in academic settings, it may be beneficial to target mid-career academics who are likely to be more receptive. Providing targeted training, demonstrating the practical benefits, and addressing concerns about usability and integration could potentially enhance acceptance among academics with longer experience.

The quantitative findings indicated that academics use ChatGPT for various purposes. These findings suggest that ChatGPT has the potential to significantly impact

various aspects of academic and personal life, offering a range of benefits such as efficiency, accuracy, and creativity. Getting information stands out as a leading motive for using ChatGPT, indicating that academics rely on ChatGPT to quickly retrieve information, receive explanations, and clarify concepts on a wide range of topics. Idea generation and text writing were also presented as the primary motivations for its use and application in teaching (Kiryakova & Angelova, 2023; Sok & Heng, 2023). ChatGPT also offers valuable support in improving the efficiency and effectiveness of academic writing, a particularly challenging aspect for university lecturers, especially those who are not native English speakers. According to Dergaa et al. (2023), the integration of large language models like ChatGPT can enhance the productivity of academic writing. Specifically, as highlighted by Graf and Bernardi (2023), ChatGPT is not only capable of correcting sentence structure and grammar but also aids in the writing and editing process. Consequently, this application is considered a helpful and efficient tool for assisting non-native English speakers or writers in overcoming language barriers (Sallam, 2023). Moreover, AI chatbots such as ChatGPT can improve the accuracy of research by identifying and correcting errors in analysis or data (Alshater, 2022). Thus, leveraging ChatGPT can be a viable approach to validate research findings or detect inaccuracies.

Academics also mentioned their concerns associated with the use of ChatGPT. Their concerns revolved around issues such as the potential for plagiarism, the lack of accuracy in generated content, and the possibility of irrelevant information being provided. Moreover, they worried about how ChatGPT might affect productivity, create learning difficulties, and interfere with professional responsibilities. Concerns have been raised by numerous researchers regarding academic integrity among students, stemming from the potential misuse or unethical utilization of ChatGPT (Anderson et al., 2023; Cotton et al., 2023; Eke, 2023; Sallam, 2023; Sok & Heng, 2023; Sullivan et al., 2023). These concerns encompass issues such as cheating, misuse, and plagiarism. As reported by both users and scientific literature, ChatGPT may generate incorrect or even fabricated information (Grassini, 2023; Gravel et al., 2023; Sallam, 2023). Consistently, Limna et al. (2023) found a challenge related to reliability and accuracy of information that is generated by ChatGPT. Kaplan-Kaplan-Rakowski et al. (2023) also identified that relying on ChatGPT to finish assignments could lead learners to become "inactive" and might hinder the acquisition of essential skills like critical thinking. Iqbal et al. (2022) pointed out that students resorting to ChatGPT for cheating could foster negative habits like plagiarism. Another study revealed that ChatGPT's responses may lack depth and consistency, sometimes presenting contradictory information, which raises concerns about its accuracy (Stojanov, 2023). Academics also voiced their concerns about the possibility of ChatGPT displacing certain professions. Goldman Sachs, as reported by Hatzius et al. (2023), forecasts that the widespread adoption of ChatGPT and similar generative AI technologies could eliminate 300 million jobs globally. According to their estimates, AI has the potential to replace 7% of employment in the United States, complement 63%, and leave 30% unaffected. Addressing these concerns and implementing appropriate regulations and educational programs are essential for maximizing the benefits of ChatGPT while mitigating its potential drawbacks in academic settings.

Our findings indicated that academics especially emphasized the opportunities provided by ChatGPT in terms of educational and academic studies. One significant benefit highlighted is ChatGPT's efficiency, particularly in terms of its being time-saving and reducing workload. It provided ease in terms of preparing examples, questions, and lesson plans. This aspect proves especially valuable in academic and educational settings where individuals often face constraints on time and resources. Similarly, Kiryakova and Angelova (2023) discovered that university professors think ChatGPT can help save time by making learning materials, presentations, and quizzes. They believe ChatGPT can also make learning more engaging and encourage critical thinking and creativity in students, leading to better learning outcomes. Similarly, Benuyenah (2023) indicated that ChatGPT was saving time. In the literature, ChatGPT has also been proven to be a valuable tool in helping faculty members to create course materials efficiently (Keiper et al., 2023; van den Berg & du Plessis, 2023). Moreover, the ability of ChatGPT to generate alternative ideas and provide targeted information has significant implications for fostering creativity and supporting effective learning. ChatGPT can inspire innovative thinking and problem-solving approaches by offering diverse perspectives and insights. This feature is particularly valuable in educational contexts, where encouraging creativity and critical thinking skills is paramount. Additionally, ChatGPT's capacity to facilitate qualitative analysis enhances its utility in academic research and language processing tasks. Its ability to sift through vast amounts of data, identify patterns, and extract relevant information can assist researchers in conducting thorough analyses and deriving meaningful conclusions. As indicated in the literature, ChatGPT can be utilized to support educators in devising innovative approaches to enhance pedagogical methods, leading to improved teaching efficiency and learning outcomes. Specifically, ChatGPT could be employed to aid teachers in creating the necessary instructional materials for their classes and ensuring their quality (Cox & Tzoc, 2023; Kraugusteeliana et al., 2023; Megahed et al., 2023; Topsakal & Topsakal, 2022). According to Kraugusteeliana et al. (2023), AI tools like ChatGPT can assist teachers in developing instructional materials for various modules, providing guidance to students, improving the quality of written assignments, conducting academic research, and working more effectively and productively. Megahed et al. (2023) conducted an experiment where ChatGPT was prompted to generate a course syllabus for an undergraduate statistics course. The results showed that the syllabus produced by ChatGPT was suitable for use with minimal revisions. This underscores the significant role of ChatGPT in assisting teachers with instructional design, thereby optimizing the efficacy of their teaching practices in higher education while reducing the time and effort required for preparation. Overall, these findings suggest that ChatGPT has the potential to significantly enhance productivity, creativity, and learning outcomes across various domains. However, it is essential to recognize that while ChatGPT offers numerous benefits, its usage should be accompanied by careful consideration of ethical implications and responsible practices to maximize its positive impact.

The findings revealed several challenges faced by academics when using ChatGPT. One set of issues relates to user experience, such as difficulty in comprehending given prompts, inadequate feedback, and the absence of interaction. These

factors can hinder the smooth interaction between users and the AI system, impacting the overall usability and effectiveness of ChatGPT. Moreover, academics also encountered language and information quality-related problems. These include instances of ChatGPT providing false or inaccurate information, particularly in Turkish, as well as a lack of proper referencing in generated content. Additionally, limitations in accessing scientific resources further compound the challenges, potentially restricting the scope and depth of research conducted using ChatGPT. Academics also indicated that the information provided by ChatGPT was limited and could have been more accurate. As specified in the literature, ChatGPT's knowledge is still limited and has not yet been updated with information beyond 2021 (Gilson et al., 2023). ChatGPT might not always give accurate answers, especially on specific topics or recent events. It can sometimes provide wrong information, which could be a problem for students who use it for learning (Megahed et al., 2023). Additionally, Jiang et al. (2024) found that among the tweets discussing the use of ChatGPT to learn, users emphasized the importance of using appropriate prompts to maximize ChatGPT's effectiveness. These findings underscore the importance of addressing usability, language proficiency, and information quality issues to enhance the effectiveness and reliability of ChatGPT for academic purposes. Improvements in these areas could significantly improve user experience and facilitate more accurate and valuable outcomes in research and academic endeavors.

Academics suggested that some training should be provided to the users. Furthermore, they stated that its use in education should be expanded. Similarly, García-Peñalvo (2023) indicated that to make this tool work well, it's important to give teachers the right training. They need to understand how to use the technology effectively in class, so they don't hold back its use. This means they should know how to use the tool and what it can and cannot do. They should also be aware of any ethical or teaching issues that might come up. Teachers worry that beginners, lacking critical interaction skills, may struggle to effectively utilize ChatGPT (Allehyani & Algamdi, 2023; Stojanov, 2023). These novices may find it challenging to discern inaccurate or misleading content generated by the system. Conversely, more advanced learners with prior knowledge and critical thinking abilities are better positioned to benefit from ChatGPT (Stojanov, 2023). Hence, offering tutorials and support for novices can aid their navigation of the technology, while allowing advanced learners to engage with ChatGPT in a manner that complements their critical thinking skills and existing knowledge.

The academics who did not use ChatGPT were asked about the reasons for not using this tool. From their responses, lack of information and skills stands out as a leading factor for not using ChatGPT. This emphasizes how crucial it is to offer sufficient instruction and resources to close these knowledge gaps and provide users the ability to utilize ChatGPT efficiently. Similarly, Iqbal et al. (2022) indicated that faculty members need additional information and education regarding ChatGPT to make well-informed decisions about its application in teaching and learning. This underscores the broader necessity for professional development and training to assist educators in comprehending and effectively incorporating new technologies into their practices. Therefore, institutions can assist in removing these obstacles and promoting wider adoption of ChatGPT by providing instruction and support

customized to users' needs. This research also emphasizes how crucial it is to apply user-centric design concepts when creating AI tools like ChatGPT so that users of different skill levels may easily understand and utilize them.

6 Conclusion

This study explored academics' perceptions regarding the utilization of ChatGPT. The findings indicate a considerable level of awareness among academics regarding AI applications, particularly ChatGPT, suggesting a promising foundation for its integration into various domains. While recognizing the potential advantages of ChatGPT in terms of efficiency, creativity enhancement, and information access, academics also expressed significant concerns regarding its trustworthiness, accuracy, and ethical implications. Addressing these concerns and implementing appropriate regulations and educational programs are imperative for maximizing the benefits of ChatGPT while mitigating its potential drawbacks.

The study also revealed that ChatGPT is utilized for diverse purposes, including education, getting information, idea generation, and productivity enhancement. While academics exhibit responsible review and revision practices, there are also indications of strategies to avoid plagiarism detection. These findings underscore the need for continued exploration of the ethical and pedagogical implications of ChatGPT use, as well as the development of guidelines to promote responsible and effective utilization in various contexts.

Furthermore, challenges encountered by academics in using ChatGPT, such as user experience issues and language and information quality-related problems, highlight the importance of addressing usability and reliability issues to enhance its effectiveness for academic purposes. By offering users specialized training and materials, it is possible to close knowledge gaps and provide users the tools they need to make good use of ChatGPT. By addressing concerns and implementing appropriate guidelines and support mechanisms, institutions can harness the full potential of ChatGPT to enrich educational and professional experiences.

7 Implications

The above results have some practical and theoretical implications. The findings of this study provide valuable insights into the knowledge, attitude, and practice levels of academics regarding the utilization of ChatGPT. Considering this, we can suggest a series of actions for enhancing best practice with ChatGPT from academics' perspective.

First, the findings suggest that there is a need for educational institutions to incorporate AI literacy into their policies. This could involve developing guidelines for responsible AI use, ensuring that academics understand the ethical and practical implications of using tools like ChatGPT. Institutions might also consider establishing partnerships with AI experts to create comprehensive training modules that address both the technical aspects and the ethical considerations of AI utilization.

Training programs can be mandated to teach academics how to use AI tools effectively and ethically. Based on concerns about plagiarism and misuse, educational policies could include clear regulations on using AI tools for academic writing, ensuring that users are aware of what constitutes proper AI-assisted work.

The findings underscore the importance of providing adequate training for teachers. Institutions could integrate AI tools into their curriculum development processes by training educators to use ChatGPT for creating course materials, quizzes, and presentations. This could improve productivity and learning outcomes, as shown in the study.

Concerns about students' becoming inactive if overly reliant on AI also emerged. To address this, pedagogical strategies should ensure that AI use promotes active participation and critical thinking. For instance, educators could design activities where students must analyze and critique AI-generated content, encouraging deeper engagement with the material. Additionally, incorporating project-based learning that requires students to create their own content with AI assistance can help maintain their active involvement.

As ChatGPT becomes more widely used, ongoing exploration of its ethical and pedagogical implications is crucial. Institutions should develop clear guidelines to ensure responsible use in contexts such as academic writing and research. Regularly reviewing these guidelines based on feedback from users can help adapt to the evolving landscape of AI in education. The study emphasizes ChatGPT's usability and its benefits, including personalized assistance and enhanced problem-solving capabilities. Institutions should promote these features to facilitate acceptance among academics.

The findings also contribute to existing literature on attitudes toward ChatGPT by providing insights into academics' perspectives and concerns. Future research can build upon these findings to further investigate the factors influencing attitudes and adoption of ChatGPT in academic settings. The study highlights the ethical implications of ChatGPT use in academia, including concerns about trustworthiness, accuracy, and potential impact on professional responsibilities. This emphasizes how crucial it is to incorporate ethical issues into AI research and practice in education. The findings suggest the need for theoretical frameworks that guide the integration of ChatGPT into educational practices. These frameworks could emphasize collaboration between AI tools and traditional teaching methods to create a balanced educational approach. Institutions should prioritize developing and implementing training programs to enhance academics' knowledge and skills regarding ChatGPT. These programs could include workshops, seminars, and online courses tailored to address the specific needs and concerns identified in the study.

8 Limitations

Despite its promising results, the present study has some limitations. First, there are limitations regarding the sample, as the study was conducted with academics working in the educational field in Türkiye, limiting the generalizability of findings to other cultural or geographical contexts. Another limitation of the research design is

the use of a mixed-method approach with an explanatory sequential design. While this approach allows for a comprehensive understanding of the phenomenon, it may not capture the dynamic nature of ChatGPT usage and perceptions over time. Future research could employ a longitudinal research design to track changes in academics' knowledge, attitudes, and practices regarding ChatGPT over an extended period.

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Ahmet UYAR: Methodology, Data Collection, Data Analysis, Analysis and Interpretation of Results, Visualization.

The authors discussed the results and contributed to the final manuscript.

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Declarations

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