Investigating academics' attitudes towards ChatGPT: A qualitative study

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ChatGPT, at the forefront of artificial intelligence advancement, has caused excitement and scepticism within academic spheres due to its potential to affect academic processes. Understanding attitudes towards ChatGPT could help manage expectations and concerns for ChatGPT in academia, predict behaviour and inform policy. This study aimed to develop an understanding of university academics' attitudes towards ChatGPT. A total of 11 university academics participated in semi-structured interviews. Data analysis found three main themes: (a) ethics, (b) changes to academic processes and (c) accessibility and inclusivity. Results showed academics had positive attitudes towards ChatGPT overall; however, they held negative attitudes towards the unethical use of the technology. Key findings included discrepancies in perceptions of academics' personal ethical use of ChatGPT compared to unethical use by others. Furthermore, academics viewed ChatGPT as a useful tool for saving time and enhancing research processes and student learning. Finally, ChatGPT could increase equity among diverse groups, though it should be used with caution. Future studies could conduct a longitudinal study and recruit a larger and wider sample exploring specific and/or multidisciplinary domains for research diversity and the generalisability of findings.

Implications for practice or policy:

- Academic policy and codes of conduct concerning the use of ChatGPT in research and education can be refined to address key ethical concerns, such as plagiarism.
- Academic educators and researchers can save time and improve processes using ChatGPT to attain better work-life balance and thus potentially improve the quality of their work.

Keywords: academics, artificial intelligence, attitudes, ChatGPT, large language model, qualitative, theory of planned behaviour

Introduction

Society continually adapts to rapidly evolving technologies and new technological instruments, such as varying artificial intelligence (AI) models. At the forefront of AI advancement is ChatGPT, a large language model (LLM). ChatGPT is capturing public interest due to its widespread accessibility and demonstrated potential to generate human-like outputs (Vaishya et al., 2023).

ChatGPT has possible applications in various industries; however, little is known about academics' views towards this new technology in higher education (Strzelecki, 2023). Academics themselves contribute to advancing and developing knowledge and work in varied roles within universities. Academics can pass on, develop or advance knowledge as educators, researchers or both (Kyvik, 2013). In higher education, the consequences of ChatGPT could affect academic and student work (Loble, 2023). For example, ChatGPT could assist with processes such as research design and data collection, improving research productivity (Livberber & Ayvaz, 2023). Additionally, ChatGPT could help academic educators with administrative tasks such as generating student feedback and developing a course outline (Sabzalieva & Valentini, 2023). Conversely, ChatGPT's ability to generate natural-sounding language threatens academic integrity (Lund et al., 2023). Academics have expressed ethical concerns including but not limited to bias within it (Fowler et al., 2023; Lund et al., 2023).

New technological tools could affect education and research processes, so exploring attitudes is important in considering expectations and concerns for ChatGPT in academia (Kiryakova & Angelova,

2023). Attitudes predict behavioural intention and, by extension, the use of technology (Mohr & Kühl, 2021). Therefore, the present study aimed to develop an understanding of university academics' attitudes towards ChatGPT.

ChatGPT: A construct

AI is defined by Shapiro (2003) as "a field of computer science and engineering concerned with the computational understanding of what is commonly called intelligent behaviour, and with the creation of artifacts that exhibit such behaviour" (p. 89). This definition best fits the present study for the anthropomorphic style of ChatGPT's outputs. ChatGPT was developed as a public tool by OpenAI based on their generative pre-trained transformer (GPT) language model (Liebrenz et al., 2023). Due to advancements in natural language processing – a subfield of AI concerning how computers process language similarly to humans – ChatGPT distinguishes itself from previous GPT models with its conversational style (Bin-Nashwan et al., 2023). ChatGPT uses machine learning to improve its predictive accuracy through experience, applying new patterns to situations not in the model's initial design (Lund et al., 2023); the more ChatGPT is used, the more information is available for targeted responses to users.

Attitudes towards AI

According to the theory of planned behaviour (TPB; Ajzen et al., 1991), *attitudes*, *subjective norm* and *perceived behavioural control* are determinants of behavioural intention and, in turn, actual behaviour (see Figure 1). TPB defines attitudes as the degree to which a behaviour is assessed positively or negatively (Ajzen et al., 1991). Subjective norm is the perceived social pressure from valued individuals to perform or not perform a behaviour (Mohr & Kühl, 2021). Finally, perceived behavioural control is the apparent simplicity or difficulty in implementing a behaviour (Mohr & Kühl, 2021). In terms of AI adoption, attitudes and perceived behavioural control are stronger predictors than subjective norms (Mohr & Kühl, 2021). Therefore, following TPB, understanding academics' attitudes towards ChatGPT could help foresee its application in academia.

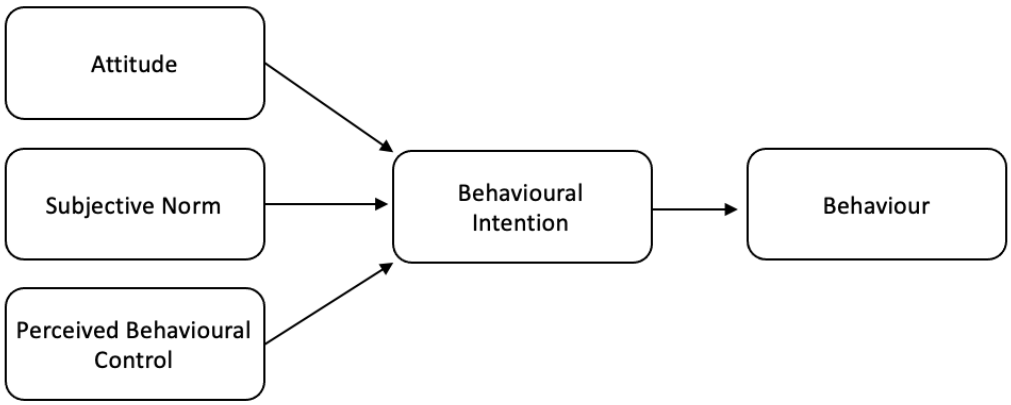

Figure 1. TPB (adapted from Ajzen, 1991, p. 182)

Positive attitudes towards general AI technologies have been found among academic samples (Gillissen et al., 2022; Schepman & Rodway, 2020; Wood et al., 2021). For instance, the attitudes of medical students and faculty are positive overall; subsequently, the adoption of AI is more likely when the technology was advantageous and easy to use (Gillissen et al., 2022; Wood et al., 2021). Despite positively skewed attitudes, Gillissen et al. found primary concerns towards threats to job security and the potential hindrance to practical skill development. To date, most literature on academics' attitudes towards AI has been limited to the health sciences. Therefore, investigating interdisciplinary views can lead to a more comprehensive understanding of attitudes towards AI in academia.

ChatGPT in academia

ChatGPT could provide academics with new opportunities to bolster academic processes and improve research productivity (Lund et al., 2023), which may inform positive attitudes towards the technology. For instance, ChatGPT could assist research academics with research design, data collection, data analysis and writing (Sabzalieva & Valentini, 2023). Specific tasks ChatGPT could perform include generating ideas for research questions, searching data sets and coding data (Livberber & Ayvaz, 2023). Academic educators may use ChatGPT to provide student feedback, develop course outlines and generate alternate ways of expressing ideas (Sabzalieva & Valentini, 2023). Additionally, long hours and heavy workloads cause stress in academic jobs and, subsequently, burnout (Johnson et al., 2019). ChatGPT's assistance could save academics time, reducing the likelihood of burnout and associated health risks (Iqbal et al., 2023; Johnson et al., 2019).

ChatGPT's ability to produce human-like outputs may pose a threat to academic integrity (Paul et al., 2023). Specifically, ChatGPT has generated outputs that appeared like natural human language to the point that academics could not identify fake scientific abstracts written it (Else, 2023). Students could misuse ChatGPT to generate assignments, impeding students' critical thinking and problem-solving (Fiialka et al., 2023). Tools designed to detect plagiarism, such as Turnitin, are unreliable in detecting AI-generated text, causing concern among academics (Lund et al., 2023; Perkins, 2023). Without the ability to detect AI-generated work, academics cannot accurately evaluate students' comprehension of assessed content (Mahabeer & Pirtheepal, 2019; Perkins, 2023). To reduce students' misuse of ChatGPT, academics are altering course structure and assessments (Sabzalieva & Valentini, 2023). Similarly, academic publishers are updating their authorship policies to protect the integrity of academic work (Elsevier, 2024).

Inherent bias within ChatGPT may also pose a threat to the integrity of science (Lund et al., 2023; Sabzalieva & Valentini, 2023). ChatGPT, trained on 175 billion parameters of data, contains bias relating to gender, race, ethnicity and disability status (Fowler et al., 2023; Lund et al., 2023). LLM bias is the systematic presence of misrepresentation, attribution errors or factual distortions favouring specific groups, which perpetuates stereotypes and makes incorrect assumptions due to its learning patterns (Ferrara, 2023). Academia has historically undervalued equity, such as through the devaluation of women and other minority groups, such as those living with a disability or chronic illness (Brown et al., 2018; Martin et al., 2023). Presently, academics are working to increase the diversity of research samples, better reflecting the human population (Tzovara et al., 2021). Although academics strive for equity and inclusion in research, potential violations of academic integrity and LLM bias may negatively influence academics' attitudes towards ChatGPT.

With scarce policy around the use of ChatGPT in Australian universities, academic educators are struggling to manage its use (Fowler et al., 2023). Discourse amongst academic educators has gradually shifted from being primarily concerned with cheating to questioning how to support deep learning by students, which is reflected in emerging AI policies (Fowler et al., 2023). Recently, the Tertiary Education Quality and Standards Agency (2024) requested that all registered higher education providers put forth an action plan addressing the risks of generative AI towards academic integrity. Given the specific mention of ChatGPT in that request and the ubiquity of ChatGPT, we chose it for this study. Informed policy on generative AI within higher education can help academics navigate students around the potential risks of ChatGPT to enhance teaching and learning.

Initial studies on attitudes towards ChatGPT in higher education show mixed attitudes (Iqbal et al., 2023; Kiryakova & Angelova, 2023; Liveberber & Ayvaz, 2023). Negative attitudes were often expressed towards student misuse, such as plagiarism and cheating, and students becoming lazy in their education (Iqbal et al., 2023). Concerns included ethical misuse, a reduction in support for students and threats to valid assessment practices (Iqbal et al., 2023; Kiryakova & Angelova, 2023). Positive attitudes were expressed towards ChatGPT's ability to save time, automate feedback, improve classroom engagement, stimulate critical thinking and creativity and generate accessible course material (Iqbal et al., 2023; Kiryakova & Angelova, 2023). The recency of ChatGPT in the academic sphere indicates that more research is required.

Furthermore, early findings on attitudes towards ChatGPT are in academic samples in Turkey (Liveberber & Ayvaz, 2023), Pakistan (Iqbal et al., 2023), and Bulgaria (Kiryakova & Angelova, 2023). The present sample broadened perspectives to include Australian academics.

The present study

The present study investigated the following question: "What attitudes do university academics hold towards ChatGPT?" The study aimed to investigate university academics' attitudes toward ChatGPT and its possible impacts on academic integrity and processes. It used a qualitative design, collecting data through semi-structured interviews. We approached it from a pragmatic epistemology – an approach to knowledge – which concerns real-world applications to issues and finding solutions to problems (Creswell & Creswell, 2018; Kelly & Cordeiro, 2020), informing our data collection and interpretation.

Methodology

Participants

The present study aimed to investigate university academics' attitudes towards ChatGPT by exploring its potential advantages and disadvantages within academia. We recruited and interviewed a total of 11 university academics via convenience sampling. Hennink and Kaiser (2022) recommended 9–17 interviews based on averages from studies that have reached data saturation. Saturation is "the point at which no new information, codes or themes are yielded from data" (Braun & Clarke, 2021b, p. 202). The inclusion criteria were participants over 18 years old; holding a PhD; currently employed in academia as a researcher, educator, or a balanced role of both; working at least 2 full days per week at their university; currently residing in Australia and having knowledge of and experience with ChatGPT. Eligibility was screened through a Qualtrics survey containing informed consent and questions to collect demographic information. Participants were recruited via a post on Facebook and LinkedIn, and recruitment posters were distributed amongst universities. Participants consisted of five males and six females, all residing in South Australia. Ages ranged from 28 to 63 years old (M = 41). Participating academics were entered in a draw to win one of six $50 retail vouchers for their time. Academics involved comprised a broad range of disciplines and interactions with ChatGPT; four worked as researchers, three as educators and four worked in a balanced role (see Table 1).

The participants from the present study resided in South Australia, where prominent universities have agreed to allow the use of ChatGPT (Open Universities Australia, 2023); therefore, academics from the present study had experiences with the technology in their work environments. As such, academics' attitudes towards how ChatGPT impacted academic work were grounded by personal experience.

Table 1
Participant demographics

Participant	Academic role	Discipline	No. of interactions with ChatGPT
P1	Research academic	Medicine	100+
P2	Balanced role	Marketing	100+
P3	Research academic	Medicine	10
P4	Research academic	Machine learning	71
P5	Balanced role	Psychology	100+
P6	Balanced role	Asian studies	6
P7	Teaching academic	Psychology	10
P8	Research academic	Psychology	3
P9	Teaching academic	Health sciences	19
P10	Teaching academic	Education	50
P11	Balanced role	Educational psychology	100+

Note. The number of interactions with ChatGPT is an approximation made by participants.

Design

This study used an exploratory, reflexive and emergent design (Braun & Clarke, 2021a; Creswell & Creswell, 2018). An emergent design is an iterative approach that adapts to new ideas, concepts and findings throughout the research process (Busetto et al., 2017). Reflexivity allows researchers to understand their role in the research and critically question their subjective influence in their research processes (Braun & Clarke, 2021a). The recency of ChatGPT in the academic sphere led this study to an exploratory approach, used to uncover novel research findings in innovative ways, aligning with a pragmatic approach to problem-solving (Swedberg, 2020).

Data collection

Ethics approval (Protocol 205462) was obtained from our institution's Ethics Committee. Participants were invited to participate in approximately 30-minute one-on-one interviews. In acknowledgement of the time pressures of academics, participants were given the option to be interviewed via Zoom or telephone for comfort and convenience to boost the quality of the data and attract a larger sample size. Academics were informed they had the right to withdraw from the interview at any point. We used eight semi-structured questions (see Table 2), allowing participants the flexibility to provide as much as they wished and to take the interview in a direction of their choosing. Interviews ranged from 15:25 to 37:59 minutes (M = 26:07 minutes) and were recorded and transcribed verbatim using Otter.ai. Data was cleaned to ensure accurate grammar, syntax and expression translation from the original audio files.

Table 2
Interview questions

No.	Question
1	Warm-up question: Tell me about your work as an academic OR can you briefly tell me a bit about what your average week looks like?
2	What were your attitudes towards ChatGPT before using it?
3	Can you tell me about your experience using ChatGPT?
4	In what ways do your social interactions influence your attitudes towards ChatGPT?
5	How do you think ChatGPT would be used in an academic setting?
6	What are your concerns about ChatGPT being used within academia?
7	What are your opinions on improving AI education?
8	Overall, what are your current attitudes towards ChatGPT?

Data analysis

Reflexive thematic analysis (RTA) was used to develop, analyse and interpret patterns in the data set through iterative coding and theme development (Braun & Clarke, 2022). The themes are the core of the data and demonstrate the salient findings from the research. RTA considers researcher subjectivity and reflexivity, by which the researcher is cognisant of the assumptions that form their thematic analysis (Braun & Clarke, 2019). Due to the emergent and reflexive nature of the present study, RTA allowed us to explore and develop themes as they emerged in real time and to critically evaluate the subjectivity of the data and its interpretation. RTA comprises six phases: (a) familiarisation with the data set, (b) coding, (c) generating initial themes, (d) developing and reviewing themes, (e) refining, defining and naming themes and (f) writing up (Braun & Clarke, 2006). Themes are patterns of meaning that are unified by a central idea and are born from coding through the process of tagging data with code labels (Braun & Clarke, 2022).

Transcripts were printed for familiarisation with the data through highlighting and annotating. I attributed codes to the data, which demonstrated important ideas and concepts. I identified themes as patterns among the codes and tabulated them for clarity. My co-authors independently checked the entirety of the data and assisted in refining the codes and themes. This process was repeated several times to ensure rigour, validity and our agreement in the salience of the findings.

Results and discussion

This study aimed to understand university academics' attitudes towards ChatGPT, and the results were predominantly positive, except for negative attitudes towards ethical concerns. RTA identified three main themes: ethics, changes to academic processes, and accessibility and inclusivity. Sub-themes were identified within two of the main themes. Ethics encompassed sub-themes of academic integrity and morals; changes to academic processes encompassed sub-themes of timesaving, assessment changes, and expectations and transparency. Figure 2 illustrates the relationship between themes and sub-themes, helping to demonstrate the nuance and complexity of data. Dictionary definitions for the main concepts informed the final definitions of themes concerning ChatGPT (see Table 3). Considering the epistemological approach of pragmatism, the themes reflect people's everyday reality. Hence, practical implications will be discussed in hand with this study's results.

Table 1
Definitions of themes relating to ChatGPT

Themes	Definition
Ethics	A system of moral principles by which human interactions with ChatGPT are judged good or bad or right or wrong, particularly within the standards of academia.
Academic integrity	The expectation that all members of the academic community, including teachers, students, and researchers, use ChatGPT with honesty, trust, fairness, respect, and responsibility.
Morals	The principles of right or wrong conduct in using ChatGPT.
Changes to academic processes	Alterations to a systematic series of actions or operations conducted by an academic due to ChatGPT.
Timesaving	The assistance of ChatGPT in reducing the time required to complete a task.
Assessment changes	Alterations to course assessment to either resist or accommodate ChatGPT within the curriculum.
Expectations and transparency	The expectation and reciprocation of openness, communication, and accountability about the use of ChatGPT in written work.
Accessibility and inclusivity	Increased access and usability of ChatGPT across different population groups, such as ethnic, racial, gender, age, and geographic demographics.

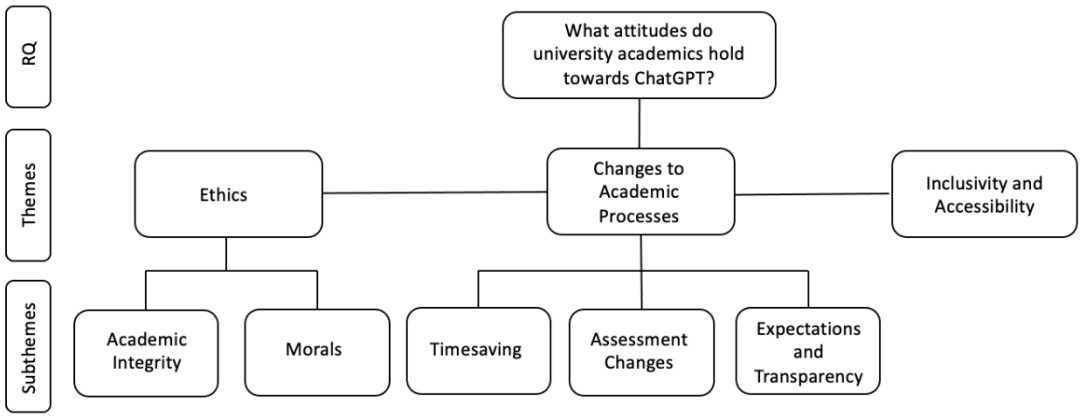

Figure 2. Thematic map

Ethics

The ethical use of ChatGPT in academia was frequently discussed, leading to the overall theme of ethics. Two separate elements of ethics were found in data analysis and categorised into sub-themes: academic integrity and morals. Academics held negative attitudes towards the unethical use of ChatGPT in academia, with perceptions of their own use of ChatGPT differing from their perceptions of others' use of it. This study defined unethical use by others as the principle of wrong conduct by a person other than themself when using ChatGPT.

Academic integrity

As supported by recent literature (Iqbal et al., 2023; Livberber & Ayvaz, 2023), academics held negative attitudes towards any potential or actual breach of academic integrity, such as plagiarism or cheating. The present study's academics attributed reasons for misconduct to the time pressure of deadlines, expectations for high-impact factors and laziness. For example, "We know a lot of the times, academic misconduct happens because people are pressed for time" (Participant [P] 7) and "People who are very pushed to have output because academics are very, very judged on impact factor … might be tempted to [use ChatGPT]" (P8), and "Look, the concern would be that a lazy researcher might just use it to produce text or whatever research they want" (P5).

Academics expressed concerns towards ChatGPT being listed as an author in academic publications, an attitude supported by recent literature (Lund et al., 2023; Rahman et al., 2023). For instance:

> I don't think you can cite an AI tool, because what the tool is telling you, it has learned and been trained on already existing knowledge … you can't credit an AI bot for taking stuff that's already out there and exists and feeding it back to you in a new way. (P3)

In line with literature (Lund et al., 2023; Perkins, 2023), this study's academics expressed frustration with the difficulty of detecting work produced by ChatGPT, creating further potential for cheating. For instance, "I think the risk of ChatGPT is that it can mimic a human" (P7) and "How can it be used to produce essays … and how can we tell the difference?" (P8). Further supporting early conversations (Lund et al., 2023), academics questioned the intellectual property of ChatGPT's inputs and outputs concerning the lack of recognition of academic work. P8 shared, "It's ridiculous that … you can put someone's writing into a box, and then it changes it slightly and that makes it someone else's property".

Although negative attitudes towards academic misconduct exist, policy is working to improve ethical conduct within academia to address this concern (Iqbal et al., 2023; Rahman et al., 2023). Academics acknowledged that people will always find ways to cheat, so universities should aim to make academics and students aware of the strengths and limitations of ChatGPT in addition to developing policies to minimise risks of plagiarism and cheating.

Morals

Moral attitudes to ChatGPT appeared as subjective perceptions of "good and bad" and "right and wrong" behaviour. Perceptions of personal use of the technology were viewed positively by academics, for example, "I'm trying to use it for good not evil" (P1). Despite positive self-reflections of use, academics expressed negative attitudes towards the actual or potential misuse of ChatGPT by other academics.

Academics outsourcing their jobs to ChatGPT, thereby undermining their role and expertise, was an example of misuse: "From personal experience, some people have completely replaced their job with ChatGPT, which is very unethical and raises questions of why are you hired to do this job?" (P2). Although the previous example was based on personal experience of the misuse of ChatGPT by others, most moral concerns were hypothetical, for example, "somebody could use it with malicious intent and create hate speech" (P10).

Consistent with research by Gillissen et al. (2022), negative attitudes were expressed towards potential threats to the acquisition of knowledge and skill development of students due to the use of ChatGPT. P9 shared:

> I think if you don't develop those critical analysis skills, those research skills, those paraphrasing skills in the first place, that's a risk … that's not contributing to a well-rounded, successful academic student, because they're really important skills, and ChatGPT can't replace those for you, you need to develop them, and use ChatGPT as a support on adjunct to your own natural abilities and skills and education.

Concerns were voiced towards the knowledge and skill development of fellow academics in addition to students, especially early career academics who are developing critical professional skills (Matthews et al., 2014), for instance, "ChatGPT can, you know, do an article review for you or write an essay for you but do you understand, you know, what it means to read an academic paper or to think critically?" (P3). Establishing inherently human skills will be necessary for the innovation required in academia, which ChatGPT cannot replicate (Livberber & Ayvaz, 2023).

Changes to academic processes

Academics commonly discussed ways ChatGPT altered their work, leading to an overall theme of changes to academic processes. The analysis provided three individual elements of changes to academic processes, categorised into sub-themes: timesaving, assessment changes, and expectations and transparency. Academics primarily held positive attitudes towards the changes to their processes.

Timesaving

Consistent with recent studies (Iqbal et al., 2023; Livberber & Ayvaz, 2023), academics viewed ChatGPT as a timesaver. Academics were pleased by ChatGPT's efficiency in producing outputs, for example, "I could have done that myself, but it was so quick" (P9). ChatGPT's speed in creating outputs meant academics could attend to inherently human tasks, such as deep thinking and creativity. P1 commented, "I jumped straight into the deep science, the deep thinking, the strategy on the first version."

Research academics were enthusiastic about how ChatGPT could save time in their research processes, including referencing, structuring work, problem-solving and conducting a literature review. P11 explained:

> I had a very short deadline, so I was able to take my ideas, put it through ChatGPT to help me flesh out some of the paragraphs, and it just sped up my process … it was able to cut out probably a second, third, fourth draft where I would go through the process of iterating and adjusting my writing. And so, it absolutely took something that probably would have taken half a day into an hour.

Academic roles are demanding, characterised by time pressures, such as balancing teaching demands with research workload, which can reduce work engagement (van Tienoven et al., 2023). This study shows using ChatGPT saves time and is a particular benefit of the technology. Time-consuming tasks, such as efficiently sourcing information, can be sped up with the assistance of ChatGPT. Consequently, academics may have more opportunities that are vital for the research process, including deep, critical and creative thinking (Livberber & Ayvaz, 2023). Furthermore, since work-life balance can be difficult to achieve for academics, having additional time may reduce the risk of burnout and associated health risks (Iqbal et al., 2023; Johnson et al., 2019).

Assessment changes

Most academics viewed changes to course assessments positively and as an opportunity to reshape their delivery of assessed content. The literature shows that initial responses to ChatGPT were centred around the prevention of cheating (Fowler et al., 2023). The present study found academics' attitudes generally reflected this initial sentiment when considering how to redesign assessments. For example, "initial

conversations when it first came out were just what it's actually capable of … how students are going to use or misuse it" (P3), and "Even if that means going back to handwritten … exams in the big hall" (P6).

Academic discourse shifted from considering ways to reduce cheating with AI to supporting deep student learning (Fowler et al., 2023). The present study found that academics actively considered ways to use ChatGPT to support student learning when designing assessments. They emphasised the importance of AI literacy for academic educators as a first step, for instance, "Now I see my role as a professor within a university, I need to also then learn a hell of a lot more about large language models and how we use them responsibly" (P1). Once academics were familiar with ChatGPT, they could work to enhance student learning, as P7 explained:

> It's really been an impetus, … to rethink our assessment types and what we're assessing and how we're assessing, and those kinds of things, because we obviously want students' assessment results to reflect … how they're engaging with the courses, their understanding of the course content.

In addition to academics' AI literacy, academics stressed the importance of educating students about the appropriate use of ChatGPT, for example, "How do you build students' capacity to use it, but also to know what they need to do to ensure that whatever it spits out is kind of right?" (P10). Enhancing students' AI literacy could maximise their learning experience and equip them with transferrable skills beyond university (Ng et al., 2021). P7 reflected:

> When I think about my role, like part of my job is obviously to make our assessments suit the world and the environment that we live in and so we know that generative AI is here, it's not going to go away so we need to equip our students with skills that enable them to use it as a tool and also to … be able to master the skills that you're going to need to navigate that kind of environment.

Academics discussed how ChatGPT could generate new assessment ideas and improve course structure to facilitate learning. P11 described how ChatGPT helped redesign a course to reduce fail rates from between 25% and 30% to 6%. P11 reflected, "It [ChatGPT] had two kinds of impacts, one in that it forced us to rethink how we do our assessment pieces, and two it then helped us create our assessment piece". ChatGPT can empower academics to change how content is delivered and how students learn more creatively. For example, academics from The University of Sydney (Liu & Bridgeman, 2023) recommend educators work alongside AI by allowing students to use AI to develop draft assignments, having students track changes and add comments to demonstrate the reasoning behind their decisions. Such techniques may mitigate the risk of academic misconduct in higher education.

Expectations and transparency

Academics positively viewed acknowledging the use of ChatGPT in academic or student work and negatively viewed a lack of acknowledgement, which was viewed as deceptive. In line with Ray (2023), the present study found that transparency in written work enhanced trust within the academic community, for example, "Acknowledge that you've used it, I don't have any problem with that" (P10). P6 described how student deception increased the difficulty of marking assignments:

> I found it disheartening … it made marking harder because either I was going to have to go through all the rigmarole of saying, you've used this stuff, and you haven't acknowledged it and therefore, it's, you know, plagiarism or cheating, which struck me as being fruitless.

Clear expectations and boundaries must be set by academics to encourage transparency in student work: "We're setting the expectations and hoping students follow" (P7). Having established expectations of students helped academic educators better distinguish and minimise the potential for academic misconduct, P9 commented:

> It's about making sure the students are 100% clear on what's appropriate and what's not appropriate, because then there's no grey area, if you do breach academic integrity, then you've got, I guess, the grounds to say, well, I did say what was appropriate and what wasn't appropriate, so you can't say I didn't know.

Academics expressed the difficulty of developing guidelines due to the ever-evolving nature of ChatGPT. Elsevier recently updated its policy, stating that AI technologies could not be credited as an author on published work, requesting authors declare any use of AI with a mandatory statement (Elsevier, 2024). Elsevier (2024, para. 4) defines authorship as "responsibilities and tasks that can only be attributed to and performed by humans". Similarly, institutions such as the Tertiary Education Quality and Standards Agency are in the process of developing official codes of conduct; thus, it is essential for educators and publishers to communicate clear expectations of how ChatGPT should and should not be used in the meantime (Ray, 2023). Developing policies that clearly outline expectations for transparency regarding use of AI may minimise opportunities for academic misconduct (Dwivedi et al., 2023), which could eventually reduce negative attitudes towards ChatGPT.

Accessibility and inclusivity

Academics held largely positive attitudes towards the accessibility and inclusivity of ChatGPT to a diverse range of populations, particularly concerning language. The present study's academics described how ChatGPT could break language barriers and improve inclusivity in academia, which is historically predominantly monolinguistic (Landa, 2008; Steigerwald et al., 2022) by translating text and improving tone and expression. For example, "If you have, let's say English, as an additional language, it can help you with some translation ideas" (P11) and "I'm not a native speaker, so I hope that could help me to polish my words" (P3). Emerging literature substantiates the finding from the present study that academics positively view ChatGPT's ability to break language barriers (Livberber & Ayvas, 2023).

Academics discussed increasing the accessibility of academic writing to laypeople. For instance, "when you're publishing, if you work with complex material, you want it to be understood by people who aren't in your field," (P3), and "We don't want to come across like we're gatekeeping the knowledge" (P8). Improving the readability of academic publications helps broaden the dissemination of scientific work, enhancing the equality of knowledge rather than creating a barrier within the scientific community (Nakadai et al., 2023). Moons and Bulck (2023) found that ChatGPT improved the readability of information in scientific journals for medical patients, exemplifying its ability to enhance the accessibility of scientific information. As such, ChatGPT could potentially increase the diversity of scientific knowledge (Nakadai et al., 2023).

Although academics' overall attitudes towards increased accessibility and inclusivity were positive, academics were aware of ChatGPT's limitations and cautioned of the risks to minority groups caused by bias within it. For instance, "Who are the biggest … creators of content online? And if it's pulling from that, we don't really know if it captures diversity, the voices of those marginalised" (P10). Marginalisation can cause social divides in many work domains, including academia, and could widen due to those with and without access to ChatGPT, potentially exacerbating social and economic problems caused by the technology, such as job loss (Stahl & Eke, 2023). Academics suggested implementing the voices of the marginalised within policy to capture diversity and minimise potential harm to groups. Academics' ethical concerns can inform policies and codes of conduct concerning the ethical use of ChatGPT by addressing inclusion, accessibility, autonomy, job security and bias (Stahl & Eke, 2023).

Application of TPB

TPB (Ajzen, 1991) suggests that attitudes, subjective norm, and perceived behavioural control were predictive factors of behavioural intentions and actual use of AI, which, for this study, was ChatGPT (see Figure 3). As supported by the literature, the present study found that attitudes and perceived behavioural control appeared more strongly linked to the use of ChatGPT than subjective norm, with attitudes being the strongest link (Mohr & Kühl, 2021).

Attitudes towards using ChatGPT were positive overall, particularly when discussing personal use of ChaGPT. Despite negative attitudes towards the unethical use of ChatGPT, academics continued using it, contradicting the literature, which maintains that positive attitudes inform behavioural intention (Aboelmaged, 2010). However, because academics' negative attitudes were towards the misuse by others, not by themselves, their perceptions of their personal use versus others' use of ChatGPT may predict their behavioural intention and actual use. Future studies could investigate the incongruence between why some academics view their use to be ethical and others' use not and how this may predict behaviour.

Subjective norm informed intention to use ChatGPT in some instances, such as "Interactions I've had have definitely made me a bit more open to using it" (P3). However, subjective norm was found to have more influence on attitudes than behaviour, for instance, "I think having exposure to those different perspectives definitely influences how you feel about it" (P7). Future studies could further investigate the links between attitudes and social norms and their influence on behavioural intention in relation to ChatGPT.

Academics reported the ease of using ChatGPT, indicating high perceived behavioural control. One participant reflected, "It increased my frequency of using it because I didn't need to go through all these extra steps" (P2). Since it is difficult to measure the extent to which a person has control over behaviour (Mohr & Kühl, 2021), subjective perceptions of behavioural control should be investigated further.

The present study supports the theoretical framework of TPB in that attitudes, perceived behavioural control and subjective norm predicted behavioural intention and actual use of ChatGPT to some degree. This study supports TPB, which has traditionally found application in quantitative research, to the domain of qualitative research (Zoellner et al., 2012). As attitudes predict the use of ChatGPT, understanding academics' attitudes could help manage its implementation in academia. The findings show that academics will use ChatGPT as a tool for their work with caution regarding ethical use.

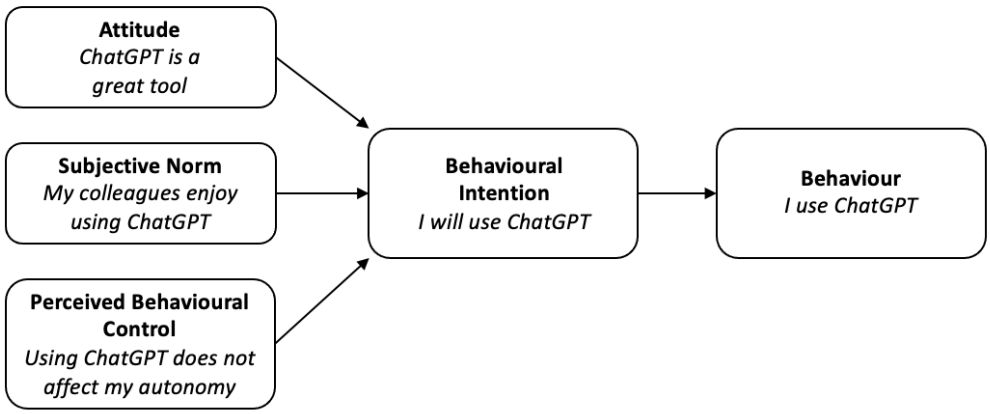

Figure 3. TPB (Ajzen, 1991) relating to ChatGPT

Strengths, limitations and future directions

We acknowledge several strengths and limitations of the present study. Although data saturation was reached and findings were meaningfully transferable (Lincoln & Guba, 1985), the sample size is too small for generalisation. However, the present study contributes to an early understanding of ChatGPT. Future studies could recruit a more extensive sample for the generalisability of findings.

Limitations in the network reach of the research group, such as followers on LinkedIn and Facebook, and the accessibility of local universities, meant that academics who participated in this study through

convenience sampling resided in South Australia. Since the study was conducted with academics from local universities, findings are not generalisable to the whole of Australia. Future studies could look to conduct interviews across Australia to enhance the scope of findings.

Academics in the present study worked across a breadth of disciplines. As most literature on academics' attitudes towards AI has focused on the medical field (Gillissen et al., 2022; Schepman & Rodway, 2020; Wood et al., 2021), interviewing academics from various disciplines widened perspectives in this area. Due to varying norms and values across disciplines, attitudes towards ChatGPT could not be generalisable to any one discipline. Future studies could seek to understand academic attitudes towards ChatGPT within specific and/or multidisciplinary domains, which may help capture the diversity of academic values in developing policies around the appropriate use of ChatGPT in academia (Dwivedi et al., 2023; Khan, 2023).

Finally, reflexivity is a strength of qualitative research, allowing knowledge to be shaped by the research processes and the practices of researchers (Braun & Clarke, 2022). A reflexive journal and field notes were kept recording our processes, observations and reflections, acknowledging any potential bias within them. This supported co-author discussions and interpretations about contextual information that were not in the transcripts. Reflexivity enhanced the credibility and rigour of the present study through our transparency and ethical awareness.

Conclusion

The impact of AI on academia is underexplored, particularly regarding tools like ChatGPT (Strzelecki, 2023). ChatGPT is at the forefront of AI advancement and academics are rapidly changing their processes to accommodate the new technology in academic spheres (Fowler, 2023; Loble, 2023; Strzelecki, 2023). To answer the research question "What attitudes do university academics hold towards ChatGPT?", results showed that academics, overall, held positive attitudes towards ChatGPT but negative attitudes towards the unethical use by others. RTA found three themes concerning academics' attitudes towards ChatGPT: (a) ethics, (b) changes to academic processes and (c) accessibility and inclusivity. Key findings exemplifying these themes included incongruence in perceptions of academics' personal ethical use of ChatGPT and unethical use by others, which may be further explored in the future. Academics viewed ChatGPT as a useful tool for timesaving, the enhancement of research processes, and student learning. Lastly, ChatGPT could increase accessibility and inclusivity to diverse groups, though it should be used with caution and must account for the voices of the marginalised. Overall, academics emphasised that ChatGPT could and should be used as a tool to augment work but not to produce work itself. Findings contribute meaningfully to early knowledge of academics' attitudes towards ChatGPT. Academic policies should address the ethical use of ChatGPT within academia, which may gradually reduce negative attitudes towards the technology.

Author contributions

Chelsea Wilkinson: Conceptualisation, Literature review, Data collection and analysis, Writing – original draft, Writing – review and editing; **Michelle Oppert:** Conceptualisation, Data analysis, Writing – review and editing; **Mikaela Owen:** Conceptualisation, Data analysis, Writing – review and editing.

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