Using the TAM Model to Explore the Faculty Lecturers' Acceptance of ChatGPT as an Academic Writing Assistant Tool in Higher Education: A Case Study of a South African University

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Abstract **- Using the Technology Acceptance Model, this study explored the acceptance of ChatGPT as an academic writing assistant among faculty lecturers at a historically disadvantaged university in South Africa. Addressing the question, how *does the Technology Acceptance Model influence faculty lecturers' adoption of ChatGPT as an academic writing assistant tool?* A case study design, involving a semi-structured interview protocol, was used to collect data from six faculty lecturers purposively sampled from one department each, and was analysed thematically. From the findings, it is concluded that both PEOU and PU influence the adoption attitudes of users. Thus, the implications are for pedagogical practice to intentionally integrate technology to enhance interactive and applied learning, while such AI tools as ChatGPT should be positioned as scaffolding tools rather than substitute for learning.**

Keywords **- Academic writing, ChatGPT, postgraduate, South Africa, Technology Acceptance Model.**

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1. Introduction

Owing to the rapid high-tech transformation of Artificial Intelligence (AI) and the proliferation of available digital information, the application of Machine Learning (ML) technologies is becoming increasingly relevant in diverse sectors, including education [1]. Such factors as efficacy, efficiency, the production of more intelligent content, advancement of global, and personalised learning have all shown the significant potentials AI has in education [2]. Chatbots have shown a lot of potential as a writing assistant tool and students' learning partner, as they can offer a wide range of language options and give students feedback on their writing process, which can help them feel less anxious about their writing performance during the learning process [3]. ChatGPT, as the latest developed AI-powered chatbot based on Generative Pre-Training Transformer architecture, seems to outshine the earlier chatbots. Recent years have seen significant progress in chatbot technology, specifically with ChatGPT standing out as a prominent AI language model [4]. ChatGPT is an artificial intelligence tool designed to develop text that resembles human writing [5]. Accordingly, this tool has brought potential opportunities to enhance education, but there are ethical concerns surrounding its use [5].

One AI tool considered crucial for communication purposes in higher education institutions is ChatGPT [6]. Corroborating this, [6] argued that the integration of ChatGPT in higher education has yielded a significant impact in research [6]. Its impact on faculty and postgraduate students is seen in its ability to improve the editorial purposes, enhance their academic writing skills, grammatical inconsistencies, and advanced vocabulary [7], [8], [9], [10], [11].

This implies that making ChatGPT part of the postgraduate curriculum will yield a total transformation in their learning process [12]. In India, postgraduate students in higher education are said to lean on the advantages of ChatGPT to improve their reading competencies, thereby contributing to positive academic achievement [13].

While prior research has assessed the usefulness of ChatGPT in higher education, the scope and contextual settings for these studies vary considerably. For example, the study at postgraduate level in India [13]; at both undergraduate and postgraduate levels in China [14]; at both undergraduate and postgraduate levels in Poland [15]; at both undergraduate and postgraduate levels in Nairobi [16]; and at postgraduate level in South Africa [17]. From the studies reviewed above, there appears to be a methodological gap in terms of the unit of analysis, especially the study carried out in South Africa [17]. Their study focused on the benefits derived from the use of ChatGPT by students at the postgraduate level at a historically disadvantaged university. The fact that their study sampled Master's postgraduate students leaves a methodological gap, as the current research analyses insights from faculty lecturers on the adoption of ChatGPT as an academic writing assistant tool.

Consequently, this study is aimed at investigating faculty lecturers' acceptance of ChatGPT, as an academic writing assistant among postgraduate students at a South African university. Thus, the research question addressed is namely, *in what ways do the Technology Acceptance Model shape faculty lecturers' adoption of ChatGPT as an academic writing assistant tool?* In answering the research question, a qualitative case design approach was framed by the Technology Acceptance Model (TAM) [18] to explore factors that influenced faculty lecturers' acceptance of ChatGPT as an academic writing assistant tool at a historically disadvantaged university in South Africa. Faculty lecturers play an important role as key stakeholders in overseeing the integration of ChatGPT into academic writing practices. Hence, exploring users' acceptance of ChatGPT and their perceptions of its usefulness is essential for successful integration, as well as boosting its capacity to enhance postgraduate students' productivity and improve the quality of scholarly output.

The following sections present the layout of the paper, namely, a review of related literature, framework, methodology, findings, discussion, implications, and conclusions.

1.1. Review of Related Literature: Overview of AI (ChatGPT)

Although the inconsistencies of AI are acknowledged in literature, the use of predictive technologies has been part of the digital landscape for some years [4]. This is exemplified in Gmail, which suggests the next phrase or word while composing emails [19]. Conversely, ChatGPT, a powerful public tool text generation model based on neural networks developed by OpenAI and an American AI company reliant on GPT language model technology, epitomises a substantial development within the domain of natural language processing [19], [1]. ChatGPT is built on GPT-3 Language Learning Model (LLM) [20] that received $1 billion from tech giant, Microsoft in 2019 for the enhancement of its generative performances [19].

The meteoric rise in OpenAI valuation is traceable to ChatGPT, which, since its inception, has soared to over $20 billion [19]. This is exemplified in the overwhelming growth of users recorded in five days and one month, which are one and 30 million, respectively, since its launch on 30 November 2022 [19], [21], [22]. For example, it took TikTok, Instagram, and Spotify, nine (9), 30, and 55 months, respectively, to achieve similar user milestones [23]. The latter and more powerful version, GPT-4, released on March 14, 2023 [24], features a staggering 170 trillion parameters, representing a staggering increase in computational processing capacity compared to the former version [25].

1.1.1. ChatGPT in Higher Education

Evidence from scholarly publications generally suggests that AI technology can serve as a significant asset in education, cutting across various roles that enrich both learning and pedagogical experiences [26]. Scholars have argued that the progress of AI has profoundly transformed students' knowledge acquisition and information access [27]. The application of AI in education has yielded tremendous benefits, as reflected in the enhanced efficiency within educational processes, improved international teaching practices, individualised learning experiences, development of more intelligent instructional content, and streamlining of educational management [28]. Accordingly, ChatGPT is a potent AI tool that can significantly influence various educational levels [2]. The advent of ChatGPT and its use has attracted educators. Given its abilities to generate different content and the possibility of students abusing its use, some people consider it a potential instrument for transforming future learning and research. In contrast, others see it as a threat [26], [29].

Evidence from several scholars' research has revealed ChatGPT's positive potential in education. For example, a study showed that ChatGPT enhances academic research in economics and finance, aids data analysis, scenario generation, communication of findings, and complements human analysis and interpretation in educational research [30]. According to Song and Song's [31] study, ChatGPT can potentially enhance users' writing skills. For instance, researchers have reported that ChatGPT provides several opportunities to improve their research writing processes and language proficiency, leading to the production of high-quality work [17], [32], [9]. While ChatGPT's widespread use in higher education stems from its advantages [15], its disadvantages have also garnered attention. Overreliance on ChatGPT in the writing process [33], [34]; diminished problem-solving and critical skills in students [9]; fake citations, references, and artifact answers are all limitations associated with the use of the ChatGPT application [35].

Nonetheless, despite the limitations associated with its use, ChatGPT offers broad potential as an effective resource for academic writing development. When used appropriately under academic mentoring, it can refine biological intelligence rather than replace it [36]. Thus, ChatGPT is chosen as an academic writing assistant tool in a postgraduate programme.

1.1.2. Academic Writing Challenges among Postgraduate Students

Academic research activities require postgraduate students to write academically, think critically, and read effectively [13]. They must conduct rigorous research and produce high-quality academic work within a limited timeframe, which can be challenging for those students working on complex research projects. A study investigated the challenges experienced by graduate students in their academic writing practices and their writing strategies [37]. Some of the difficulties identified in this study include a lack of appropriate preparation to write academically and the use of English to publish reports for non-English speakers. In Malaysia, international graduate students who are non-native English speakers struggle with academic writing practices, mainly because English is not their native or first language [38]. It has been identified in these studies that English writing can affect second language students' academic writing skills; students may lack confidence in their writing due to language inefficiency.

1.1.3. ChatGPT as an Academic Writing Assistant Tool for Postgraduate Students

Meanwhile, upon its lunch in November 2022, ChatGPT has drawn substantial research interest, specifically around education and training. A study on the role of ChatGPT as a writing assistant in education revealed its merits and demerits such as updated training, policies, and assessment to maintain academic integrity and originality [39]. It was also identified that ChatGPT has potential educational benefits, but ethical implications and privacy concerns need further research [40]. Besides, several studies, [41] and [42], have reported that tools such as ChatGPT support students' writing development by delivering immediate feedback, recommending improvements to organization, and improving writing style.

1.2. Theoretical Framework

TAM was applied as an analytical framework to explain the factors shaping technology adoption within teaching and learning contexts [18]. TAM is one of the most common theoretical frameworks that predicts use, an individual's intention to perform a particular behaviour, and acceptance of technology by individual users [43], [44]. Thus, TAM provides a structured lens to examine the dynamics of technology acceptance, shedding light on the key factors influencing users' attitudes and intentions in its adoption in their instructional practices.

Two constructs shape TAM's configuration: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness (PU) refers to the extent to which the application of a system would enhance job performance by the user, in contrast, PEOU describes the extent to which using a system requires minimal effort [18]. In line with TAM's principles, an individual's intention to adopt a specific technology within a given process is largely shaped by the system's PU [45]. In contrast, the attitude towards adopting new technology is impacted by PEOU [46]. The significant determinants of actual use of technology are both perceived usefulness and perceived ease of use. External variables, namely social, cultural, and political factors, influence both PU and PEOU [44]. Social factors include language, qualifications/skills, and facilitating conditions [47]; political factors include the impact of technology application in politics and political crises [44]; and cultural factors include individualism/collectivism, uncertainty avoidance, and power distance [48].

Users' adoption of technology is determined by two major factors namely, attitudes and behavioural intentions. Adopting a specific technology is based on the user's assessment, which determines their attitude towards use, while the likelihood of a person using that system determines their behavioural intention [44]. Thus, TAM illustrates how attitude toward technology shapes intentions to use it, subsequently influencing the user's actual behaviour [49].

The present study has indicated the use of TAM in understanding and analysing factors that encourage or inhibit the acceptance of ChatGPT by lecturers as an academic writing assistant. It is crucial to acknowledge that the literature's evidence also points to certain shortcomings in implementing the framework. For instance, in the context of e-government, research shows that TAM falls short in the explanation of users' adoption and application [50]. Critics have also criticized TAM for its incapacity to offer comprehensive precursors to mobile applications or for its failure to comprehensively understand social influence and conditions that facilitate behaviour [51], [52]. However, a study found that when a user's intent of use is based on entertainment rather than problem-solving, the perceived usefulness of a particular technology remains unchanged [53].

This study uses TAM as its leading theory to find and study the things that make people want to use or not wish to use ChatGPT as an academic writing assistant tool. It also wants to find out what lecturers think about using and adopting ChatGPT as an academic writing assistant tool based on its usefulness and ease of use. The current study employs TAM to guide research and interpret findings from the lecturers' perspective, focusing on factors that shape their usage of ChatGPT as an academic writing assistant tool.

2. Methodology

Foregrounded in the qualitative approach, the study employed a case study design in collecting and analyzing data generated from participants. Case study design is employed in a research study when the focus is aimed at addressing the 'how', 'why', and 'what' questions, as well as generating an in-depth understanding of a contemporary issue or phenomenon in a bounded system that is of interest to the researcher [54], [55]. Also, in a case study, justification is given to the study of a single individual or group of persons (a group of lecturers at a university) [56].

Purposive sampling was used in this study, and it is defined as a technique that entails the selection of participants who possess extensive knowledge or experience related to a specific phenomenon of interest [57].

The study included a sample of six (6) lecturers from the faculties of engineering, built environment, and information technology; networking and IT support; marketing; public relations and communication; and applied information and mathematics science. The selection criteria mandated that they teach Advanced Diploma level students and supervise Master's and PhD students. The Advanced Diploma level introduces students to the research component, initiating their journey in academic writing.

Data was generated using semi-structured interviews. The open-ended questions allowed participants to share detailed insights, experiences, and suggestions, providing a comprehensive understanding of their perceptions in line with the TAM model. The interview questions were sent to the participants before the session to allow them time to prepare. Each of the interview sessions lasted about 30-40 minutes. The questions were carefully crafted and correctly applied for the study to get understanding of the lecturers' perceptions. This approach can minimize variability and enhance the reliability of the findings. They allow individuals to explain their understanding and interpretation of the world around them in their own words [58]. This study structures the questions to address participants' perceptions of ChatGPT's ease of use and perceived usefulness.

The study used thematic methods to analyse the data derived from interviews. Thematic method was defined as a process that involves identifying patterns, developing codes, and generating themes to assist the researcher in addressing the research question [59]. These themes thoroughly present the data's information, capturing the key insights participants shared about the phenomenon under investigation. To achieve a good thematic analysis, there are six (6) steps described that must be followed [59]. This includes acquainting the researcher with the data, outlining six stages of thematic analysis, which involve familiarizing the researcher with the data, creating the codes, identifying the themes, reviewing the themes, labelling the themes, and making the report.

The stages outlined above were strictly followed in analysing the data generated from lecturers' interviews. The researcher first collected the data through Teams, cleaned it after all the interviews, and used this time to review all the transcriptions from Teams. The second stage was code generation. The generated codes for this study came from the main research questions: ChatGPT's PU, PEOU, and intention to use or currently use the tool. Themes were generated on paper at the third stage. And NVIVO used to refine and relate them. To confirm that the themes generated accurately echoed participants' submissions, the raw data was reviewed by the researcher.

The fifth stage involves defining the themes, providing insight into their meaning, how they address the research questions, and how they represent the information. The final stage consists in discussing the findings, as outlined below.

Credibility was adopted as a means of ensuring the trustworthiness of the findings. This involved the triangulation of the responses from participants from different departments using the coded transcripts from the lecturers' interview. This was to ensure the soundness and relevance of the themes that emerged.

The study adhered to strict ethical protocol. The principles of good research were followed at every stage of the study. First, an approval to conduct the research was received from Lancaster University's Department of Education in accordance with the university's ethical approval processes. Also, a gatekeeper's approval was received from the study site and was followed by informed consent obtained from all individual participants included in the study. The purpose of the study was disclosed to all participants, and their willingness to withdraw at any point was noted.

3. Results

In accordance with the study's results, the themes that emerged from the data analysis are presented in this section. These are technology integration in learning and teaching, familiarity with AI-powered tools, challenges with technology integration, language proficiency, research structure, and idea generation. These themes are presented alongside the analysis in the next section. The Figure 1 highlights the findings of the study in relation to the themes that emerged and participants that spoke to each.

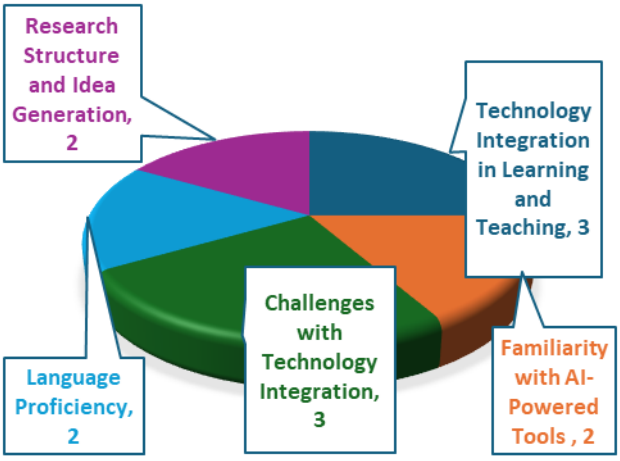

Figure 1. Chart showing themes and number of participants that contributed to each

The chart shows the number of participants that contributed to each theme. Technology integration in learning and teaching and challenges with technology integration both share similar number of participants of three (3) each. On the other hand, familiarity with AI-powered tools, language proficiency, research structure and idea generation all have two (2) participants that contributed to its emergence.

The use of the TAM model in analysing the findings indicate a moderate to high level of faculty acceptance of ChatGPT as a writing tool assistant, shaped by perceived usefulness and perceived ease of use. The equal number of participants (n = 3) contributing to both technology integration in learning and teaching and challenges with technology integration reflects a balanced perception: while faculty recognize the pedagogical value of ChatGPT in enhancing writing support, they remain cautious due to integration-related constraints. Themes such as familiarity with AI-powered tools, language proficiency, research structure, and idea generation, and each supported by two participants, directly align with perceived usefulness, as ChatGPT is viewed as beneficial in improving academic writing processes. However, the lower participant representation in these areas suggests that acceptance is still emerging and influenced by varying levels of AI literacy and confidence. In totality, the results suggest that faculty acceptance of ChatGPT is conditional, with increased training and institutional support likely to strengthen positive attitudes and behavioral intention to use the tool.

3.1. Technology Integration in Learning and Teaching

The inquiry into technology integration sparked a conversation about the ease or difficulty of incorporating technology into teaching, impacting its usability. All interviewed participants indicated that they heavily integrate technology into their teaching; while their motivations for doing so vary, they all agree that it enhances interactivity in the classroom and enables them to demonstrate practical examples, particularly in computer literacy courses. P1 shared that she frequently utilizes Teams, setting up rooms for students to collaborate and better understand the concepts discussed in class.

> *"I will ask them to discuss the concept, and what I generally find is that when I visit these rooms, there's an animated discussion going on about whatever it is that they were not clear about, or one person takes it upon themselves to explain it."*

P2 indicated that they like the flexibility that comes with the use of technology in class because some of the students are working students; therefore, he sometimes shares interactive videos with them to explain some of the engineering concepts, and at the same time checks their understanding of the concepts by having them answer the questions in the video.

Over the past two decades, technology has changed how people live, communicate, and learn, but some lecturers are still reluctant to embrace it as part of their teaching. In this study, the aim of exploring the participants' prior experience with technology in education was to grasp how these experiences might fuel their interest in emerging technologies and artificial intelligence tools like ChatGPT, grounded in the principles of connectivism. All six lecturers interviewed in this study expressed their comfort with technology, having used it with their students and in their own research. A scholar asserts that people's perceptions, experiences, and the context in which they find themselves profoundly influence the interpretation of information and the decision of what to learn [60].

P5 reflected that her motivation to integrate technology in her teaching came from her experience as a doctoral student; she felt that she had to share that experience with her students who were at the initial stages of their research lives.

3.2. Familiarity with AI-Powered Tools

Accessibility and ease of use of AI-powered tools. The participants were highly familiar with AI-powered tools like ChatGPT for academic writing assistance. They described using it extensively in their writing processes and emphasized the value it adds to refining their work. P3 *expressed their familiarity with ChatGPT and shared their personal experience during their doctoral studies.* They recognize its potential benefits for students, particularly those for whom English is the second language, as is the case with most postgraduate students at the institution. P6 indicated they are familiar with ChatGPT, though they do not use it for their writing.

> *"Familiarity in terms of familiarity, I think I am moderately aware of it. I'm familiar with it. I have tried it to see what I can generate with it, though I must say that I might not have used it in my writing itself because maybe because of being a traditional believer in academic writing."*

Although this participant stated that they do not use ChatGPT in their writing, they explicitly stated that they do not discourage postgraduate students from using it, as long as it is used responsibly.

3.3. Challenges with Technology Integration

Acknowledging challenges related to varying student access to technology, the participants advocate for equity and proficiency considerations when integrating technological tools into teaching. P3 mentioned challenges related to students' *varying access to technology and proficiency in using it*. They stress the importance of considering equity and ensuring all students can effectively use the tools.

> *P4 "In some cases, technology can be abused. I have had instances where students submitted their work straight from ChatGPT without any references."*

P5 *mentioned that digital inequality significantly impacts technology integration, as some students still face accessibility issues*. This disparity affects their ability to fully use tools like ChatGPT, highlighting the need for more equitable access to technology resources. Training students to use AI tools is considered another hindrance to technology integration.

3.4. Language Proficiency

The participants' perceptions of ChatGPT's usefulness highlight its potential to address language proficiency issues and allowing students to devote greater attention to advanced writing skills, inclusive of critical analysis. They see it as a valuable tool for enhancing students' writing abilities. P1 explained that "*when they first meet their master's students, they ask them to write a one-page summary of their decision to enroll in the course and the research they plan to conduct*". He emphasizes that this should be the students' "raw thoughts." Once they have discussed this one page, they can use ChatGPT to enhance their writing. Attesting to the language proficiency assistance, P2 said "*he encourages the students to use ChatGPT for some parts of their research but not for a literature review*", as he still prefers that the students do the reading and extract facts from the articles themselves.

3.5. Research Structure and Idea Generation

P4 stated that "*ChatGPT helps students organize their research work*". Often, students have an idea of what they want to write, but they struggle to structure it in a way that makes sense. He guides the students on how to provide prompts to ChatGPT effectively.

> *"I know that the students are using ChatGPT. I have seen some colleagues who are anti-ChatGPT. They don't want students to use it, so for me, it is trying to make them benefit from what they use so that they can put it to good use."*

P5 *"I have had the pleasure of using ChatGPT since it came out. Fortunately, it was a time when I was conducting my own doctoral study, so I got that chance to learn more about it and for it to foster my own learning"*.

This participant distinguished between high-order and low-order writing skills. Academic writing requires high-order skills such as critical thinking, evaluation, and synthesis, whereas language proficiency is often considered low-order. However, for second-language speakers, language skills can impede their ability to focus on higher-order skills. Tools like ChatGPT can help these students handle sentence formulation and research structure, allowing them to concentrate on higher-level critical thinking and analysis.

4. Discussion

The themes that emerged from the study's findings are discussed in this section. Technology integration in learning and teaching, familiarity with AI-powered tools (ChatGPT), language proficiency, research structure, and idea generation were clearly visible. On the other hand, external variables that impact PU and PEOU include digital inequality, training, and ethical and privacy issues. These themes are presented alongside the analysis in the next section.

4.1. Technology Integration in Learning and Teaching

The research findings reveal that faculty lecturers find ChatGPT easy to use, even without a technological background. Participants mentioned that ChatGPT does not require extensive technical knowledge, simplifying its adoption. One lecturer highlighted that she taught herself to use the tool, suggesting that the intuitive design and ease of learning contribute to its perceived ease of use. The perceived ease of use of ChatGPT as reported in a comparable study had a substantial influence on students' attitudes towards, and intention to adopt it for academic activities [61]. Similarly, PEOU positively affects faculty lecturers' intention to use ChatGPT, supporting the findings of another researcher's study [49]. This study suggests that a user's attitude towards technology shapes their intentions to use it, influencing their actual behaviour. These intentions are components of TAM, as popularised by the theory [18]. The ease with which lecturers can learn and use the tool encourages them to consider integrating it into their teaching practice. The adoption and likelihood of recommending ChatGPT to students by lecturers depend on the latter's simplicity. Thus, this positive perception is crucial for driving acceptance and intention to use the tool, as it reduces the barriers to initial adoption and ongoing use [18].

Hence, incorporating ChatGPT into the teaching and learning process as an academic writing assistant is considered a factor necessitated by the PEOU of the technology.

All participants in this study agree that ChatGPT can improve students' academic writing, but they require proper training to utilize it effectively. Consistent with this finding is of a related study which revealed that participants' writing skills were significantly enhanced due to using ChatGPT in the writing process [31]. The need for training for students and lecturers, especially those unfamiliar with ChatGPT, was further emphasised. This implies that the tool is easy to use; structured training could enhance its ease of use. This aligns with the submissions of some scholars in their study implications [62]. Accordingly, providing users with training to address technical difficulties arising from disruptions and negative emotions stemming from the tool's use can lead to the practical application of ChatGPT [62]. Thus, providing training and the needed assistance is considered crucial for the sustainability and scalability of the use of ChatGPT [63]. Although participants see the tool as beneficial, they envisage a barrier to the PEOU because of the training requirement. Hence, attitude toward use is likely dependent on adequate training, and their behavioural intention might be low irrespective of the potential value of the tool [18].

Ethical issues are a concern for all the participants. This finding re-echoes the revelations made in the study of some researchers on ethical issues associated with AI-generated writing and its effect on society [64]. It was indicated that ChatGPT can potentially enhance student engagement and learning outcomes, but ethical implications and privacy concerns need further research [40]. Institutional context, including policies and support mechanisms, plays a significant role in accepting ChatGPT. For research question 1.3, participants highlighted the need for documented guidelines to address ethical considerations, indicating that clear institutional policies would support the responsible use of ChatGPT. This finding validates the necessity of implementing the recommendations by UNESCO, the application of ChatGPT and artificial intelligence in institutions of higher learning, which emphasize the introduction of clear guidelines for both students and instructors, defining the appropriate use and limitations of ChatGPT [65].

Additionally, ethical concerns, such as the potential for students' development of overdependence on the usage of the tool, underscore the necessity for institutional guidelines and policies to guarantee that ChatGPT can augment learning, not supplant critical thinking and independent work.

This finding re-echoes the results of other studies that see overreliance on AI tools as a challenge of utilising ChatGPT by postgraduate students, as this may result in hitches executing their research without its assistance [33], [34]. This is suggestive of the findings reported in a study that students' problem-solving and critical skills were diminished [9].

The study also noted that access to technology could hinder ChatGPT's effective use and acceptance. In agreement with this result is the revelation made in another study where restrictions on technology were reported as one of the challenges in using ChatGPT [66]. In line with the provision of TAM, both PU and PEOU can be hindered by an eternal variable such as digital inequality, as revealed in this study.

4.2. Research Structure and Idea Generation

Students' research skills can be enhanced by ChatGPT via the generation of unfamiliar information, enabling them to delve into detailed searches for more insights.

Participants agree that ChatGPT promotes self-directed learning by allowing students to focus on more critical aspects of their education. This finding aligns with the finding that adopting ChatGPT in the classroom was motivated by personalised and customised teaching and learning [66]. With ChatGPT and AI tools assisting in developing research structures and refining writing language, students can dedicate more time to essential learning tasks and higher-order skills. In agreement with related studies [17], [32], [9], researchers claim that ChatGPT presents numerous opportunities by enhancing the writing process through the identification and correction of typographical errors, grammatical inconsistencies, structures, and advanced vocabulary, among other issues [9]. Another study confirmed this, reporting that ChatGPT enhances language proficiency among postgraduate students at a South African university, a critical component in producing high-quality work at that level [17]. Accordingly, drawing from their experiences, all the participants perceived ChatGPT as user-friendly and considered it an effective tool for aiding postgraduate students' scholarly output. This, therefore, supports and changes how people feel about using ChatGPT for academic writing, and it's a clear example of how the PU and PEOU work in the TAM framework to make people accept a new technology [18].

The findings of the study reveal factors that shape faculty members perception. Specifically, the use of TAM in interpreting the findings revealed that factors such as language proficiency, research structure, and idea generation influence faculty lecturers when viewed through the lens of perceived usefulness (PU) of ChatGPT in line with the objective of the study.

Thus, this result corroborates that of others which investigated the factors in innovative education that influence the acceptance of ChatGPT in higher education [67]. While familiarity with ChatGPT and its integration into the teaching and learning process results from its perceived ease of use (PEOU), language proficiency, research structure, and idea generation reflect its perceived usefulness. However, some external variables were highlighted in the findings as factors that could influence users' adoption of ChatGPT. These variables include digital inequality, training, ethical concerns, and an over-reliance on ChatGPT.

4.3. Implications of the Findings

The findings as revealed in the study hold significant implications for policy, practice, and research. First, there is need for clear-cut policies on applying ChatGPT within institutional settings, as some lecturers are concerned about students abusing it, while others see its potential for positive use. Introducing such policies will help define acceptable standards of application, put in place ethical standards, and guide how AI can support learning rather than replace critical thinking or academic rigor. Secondly, policies should be implemented to foster skills enhancement for lecturers, equipping them with the essential competencies to provide guidance in the effective use of AI.

The practical application of animated discussions in the classroom suggests the capability for incorporating these gadgets to enhance peer learning. Also, the perspectives on traditional academic writing versus the application of AI indicate the need for a balanced pedagogy. That is, lecturers might focus on combining both methods to improve the mode of instruction without compromising the integrity of academic work. The integration of AI in the teaching and learning process shows that some educators are already reaping the dividends from its application to foster their own learning. This suggests that if properly guided, integrating AI into teaching and learning activities could enhance students' experiences.

Before outlining the implications for research, it is imperative first to outline the limitations associated with the current study. Firstly, the small sample size, data collection technique, and focus on historically disadvantaged universities limit the methodological strength of the current study. Although the findings of the study cannot be generalised, they provide significant insights for stakeholders within the higher education sector, especially at historically disadvantaged South African universities, aiding in developing legislations that inspire ChatGPT (AI) adoption in these institutions.

Therefore, based on these limitations, there is a need to employ other research strategies in future studies to explore how AI tools, including ChatGPT, affect students learning outcomes, especially relating to academic understanding and knowledge acquisition, creativity and innovation among others. The outcome of this study could shed light on whether AI contributes positively or negatively to students' development. Researchers could also consider researching how AI-driven discussions, personalized learning experiences, and adaptive learning technologies influence educational outcomes. Also, research is required to understand the ethical challenges AI poses for education. For instance, comprehending the repercussions of excessive dependence on AI for assignments and devising strategies for lecturers to reduce the likelihood of overreliance or plagiarism is crucial.

On the other hand, the findings of have outline some implications. Firstly, for pedagogical practices to intentionally integrate technology to enhance interactive learning. This resulted from lecturers' perceptions that digital technologies promote collaboration, conceptual clarity, and flexibility for working students. Institutions should embed structured technology-supported strategies into teaching models, especially in practice oriented and computer-related courses. Secondly, AI-powered tools such as ChatGPT should be positioned as scaffolding tools rather than substitutes for learning. This suggests strong potential for supporting language development, idea generation, and research structuring, especially for second-language postgraduate students, while lecturers still stress preserving higher-order skills such as critical analysis, synthesis, and independent literature argument. Lastly, equity, ethical use, and training are crucial conditions for effective technology integration. Variation in students' access, digital proficiency, and misuse of AI-generated content indicate the need for institutional policies, student training on responsible AI application. And support systems that caters for digital inequality to ensure technology enhances learning rather than widening gaps or undermining academic integrity.

5. Conclusion

This qualitative study, utilising the TAM framework, explored the perceptions of faculty lecturers regarding the factors that impact the uptake of ChatGPT as a tool for academic writing assistance at a historically disadvantaged university in South Africa. The findings revealed technology integration in learning and teaching, familiarity with AI-powered tools (ChatGPT), language proficiency, research structure, and idea generation.

Other factors include digital inequality, training, and ethical and privacy concerns. From these findings, the study concludes that faculty lecturers' attitudes towards adopting ChatGPT as a tool for academic writing assistance is determined by PEOU and PU. Furthermore, the decision to either accept or reject the adoption of ChatGPT as an academic writing assistant tool depends on external variables, such as digital inequality, training, ethical, and privacy issues, as well as over-reliance on the AI tool. Therefore, institutional support mechanisms are essential to address the raised concerns and promote responsible usage.

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