Chapter 8: University Research Supervisors' Responses to Generative AI in the Context of Institutional Policy Lag

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Abstract

Universities worldwide are grappling with the rapid rise of generative artificial intelligence (GAI) and its implications for knowledge production, research ethics, and supervision practices. In South Africa, this debate is shaped by unique contextual factors such as the digital divide, institutional policy lag, and ongoing struggles for decolonisation in higher education. This paper reports on a qualitative study of thirty research supervisors at a research-led South African university, exploring their dispositions towards the use of AI in master's and doctoral supervision. Drawing on the Unified Theory of Acceptance and Use of Technology (UTAUT), the findings highlight a continuum of perspectives, from enthusiastic adoption to cautious resistance. Supervisors recognised GAI's potential to streamline proposal development, literature reviews, and data analysis, while raising concerns about authorship, accountability, and the risk of eroding critical thinking. Beyond plagiarism, supervisors and the literature emphasise broader ethical risks including epistemic injustice, ownership of ideas, bias, and institutional responsibility. The study also situates South Africa within wider African and global debates, underscoring the need for contextually sensitive policies that balance innovation with academic integrity. By foregrounding African higher education realities and the ethical and institutional policy dimensions of AI use, this paper contributes to emerging scholarship on how research supervision is being reshaped by technological innovation in the Global South.

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Introduction

In the relatively short period of time that free and relatively cheap Generative Artificial Intelligence (GAI) has become available to the general public, it has dramatically altered many aspects of social, economic and academic practices. As with any new technological development, especially radical innovations like GAI applications, such innovations receive mixed reception. In the multi-faceted world of academia, GAI presents extraordinary opportunities to review and reconsider traditional academic practices while simultaneously challenging and testing the adaptability and robustness of existing university policies and processes. As can be expected, universities, depending on their relative size and extent of bureaucracy, were likely to respond differently to both the affordances of GAI and the threats that it presents to the enterprise of the university. At higher education institutions where research is an important pillar of the institution's mandate, this aspect of university work, namely research and scholarship, has been thrown into disarray as it relates to, amongst other key credibility factors, the issue of irresponsible and unethical use of GAI by research students. The role of research supervisors (promoters) has undoubtedly been complicated and complexified. While exploratory research indicates that university academics acknowledge the permanence of GAI in the academic arena, they indicate the need for regulatory frameworks. The extent of research supervisors' engagement with GAI and how they make sense of this liminal space that they now find themselves in is a relatively unexplored area. There is little contention that there might be negative consequences associated with developing policy frameworks for GAI regulation that are not grounded in empirical research. If anything, the sudden proliferation of anecdotally-inspired GAI workshops is indeed a cause for concern as misguided technophiles uncritically embark on advocacy projects for the use of GAI.

In the context of the research problem described above, this chapter reports on a study that addressed the following research question:

> *What are university academics' research supervision dispositions about the use of AI in Master's and doctoral supervision?*

Theoretically, the paper draws on the Unified Theory of Acceptance and Use of Technology (UTAUT), which offers useful conceptual heuristics such as per-ormance expectancy, effort expectancy, social influence and facilitating conditions. As such, they provide a conceptual framework for understanding partici-

pants' dispositions. The study sample comprised thirty university research supervisors and was drawn from a research-led university in South Africa. At the time that this study was conceptualized, the effects of free and relatively inexpensive GAI triggered widespread concern (and general apathy in some instances) amongst university academics, with some university departments actively working towards creating platforms (workshops, seminars, mini-conferences) on GAI and its likely influence on the traditional work of academia. What was clear was that much uncertainty was likely to prevail in the context of delayed university policy responses. At the time of writing this current article, the institution under study did, in fact, release a policy on GAI use. This artefact (university policy on GAI) is certainly an object that demands attention for research, given common issues with higher education policy in terms of articulation with existing policy and lack of specificity.

Given the rapid emergence of GAI and its integration into academic workflows, the tension between innovation and regulation becomes increasingly apparent. While some scholars champion the potential of GAI to democratise knowledge production and enhance research efficiency, others raise concerns about the erosion of academic integrity, the authenticity of scholarly contributions, and the unintended consequences of AI-driven research outputs. Unwarranted moral outcry is a finding of a recent study across five universities in South Africa (Bosch & Uzuegbunam 2023), which suggests that the South African academia might, in fact, be over-reacting, which suggests that much angst and uncertainty prevail in the South African higher education context. These debates underscore the necessity for empirical investigations that move beyond anecdotal reactions to offer evidence-based insights into how research supervisors navigate this evolving landscape. Understanding their attitudes, concerns, and adaptive strategies is critical for informing institutional policies and shaping pedagogical approaches that foster responsible AI use in postgraduate research supervision.

A Brief Overview of the Literature Field

Since the advent of free (and relatively cost-efficient) GAI and its integration into various aspects of education, there has been a proliferation of research studies on this phenomenon. Research into how university library services to researchers might affect the work of traditional libraries reveals that there is an acknowledgement that GAI has, in fact, enabled students' ability to access and leverage library facilities. In the early stages of research project conceptualisa-

tion, GAI has much potential to facilitate effective and efficient brain-storming and research proposal development (Ganguly, Johri, Ali & McDonald 2025).

With the rapid evolution of AI, postgraduate research supervision is likely to be significantly impacted. Early research in the field of graduate research supervision indicates that GAI has much potential for enabling the doctoral project. Dai *et al.* in their study of Lee's five dimensions of research supervision (Lee 2008), namely, functional, enculturation, critical thinking, emancipation and relationship development, assert that '(s)upervisors, traditionally tasked with guiding students through both the technical and complex facets of their research, shifted towards a more mentorship-based role … students could independently tackle entry-level, technical research tasks … expectation for supervisors was inclined to higher-level, strategic guidance'. Early literature reviews on this phenome-non indicate that in the main, studies are pointing to the efficiency of the research process that might come from engaging GAI with the scholars also cautioning about degeneration into dependency and the underdevelopment of critical cognitive capacities. There is a growing faith in GAI's ability to have a significant impact on academic writing and research (Khalifa & Albadawy 2024) as well as its effectiveness in data coding (Pattyn 2024; Tang *et al.* 2024) and general data analysis.

There is, however, growing concern about GAI's ethical use in the academic environment especially around issues of the actual ownership of scholarship, and declarations of GAI's use as well as the ineffectiveness of plagiarism software to distinguish original student writing from copy and paste practices and human-like lexical sequencing. Ganguly *et al.* (2025) in their study of policy guidelines offered by research-intensive universities in the United States, found that policy guidelines encourage academics to take full responsibility for both their and their students' use of GAI., to become knowledgeable about the requirements of external funding agencies, academic journals and publishers as well as self-educating about the ethical dilemmas of GAI usage and acceptable disclosure. It is becoming increasingly evident that research supervisors at universities run the legal risk of unwitting neglect if they remain ignorant about the ethicality of their students' research projects.

Several structural and contextual features of higher education in South Africa – and the African region more broadly – shape how generative AI (GAI) is perceived and adopted.

First, the persistent digital divide across institutions and student populations affects access to AI tools and therefore moderates adoption: historically disadvantaged institutions and rural campuses report lower levels of

infrastructure, bandwidth and institutional readiness, which constrains both student and supervisor uptake (Aruleba 2022).

Second, South African universities operate within a policy and regulatory environment that is simultaneously shaped by national quality assurance bodies and locally negotiated institutional procedures; this layered governance influences the pace and specificity of AI policy responses (Corrigan 2023).

Third, distinct epistemic and curricular priorities in the Global South – including emphasis on decolonising curricula and protecting local knowledge systems – create particular sensitivities around externally developed AI models trained on predominantly Global North data, raising concerns about relevance and representational fairness when AI tools are used in supervision and literature synthesis (Nakatumba-Nabende 2023; UNESCO 2021).

Finally, grassroots and pan-African technical initiatives (for example community-led NLP efforts) demonstrate both the potential for locally-grounded AI solutions and the importance of contextualised capacity building to support equitable AI uptake across African universities.

These structural conditions together mean that findings from a single South African research-led university must be read with attention to uneven infrastructural readiness, institutional governance differences, and epistemic justice debates shaping AI adoption across the continent. Incorporating these situational variables helps explain the heterogeneity of supervisor dispositions observed in our study and points to policy and capacity levers that institutions can target to reduce inequitable adoption.

While the brief overview of scholarship cited above points to the enormous potential of GAI to positively influence the critical work of research supervision as well as signalling threats that might present in the academic environment, scholars in the field encourage further exploratory research on this phenomenon, recognising that different university human and physical resources might present with different opportunities and challenges.

In the section that follows, a brief account of the UTAUT framework is presented.

Theoretical and Conceptual Framework

The unified theory of acceptance and use of technology framework as a theoretical foundation

Research on the adoption of technological innovations by human beings

is well-documented, with various scholars offering partial frameworks for understanding how this phenomenon occurs in society. Venkatesh *et al.* (2016), in their seminal work in this field, harnessed the strengths of scholarship in the field of technology acceptance to develop the Unified Theory of Acceptance and Use of Technology (UTAUT. This framework was employed in this research study on research supervisors' responses to GAI. As The framework is robust as it offers a rigorous and structured conceptual protocol to analyse how research supervisors respond to Gai

The UTAUT framework offers four primary conceptual device heuristics: performance *expectancy, effort expectancy, social influence, and facilitating conditions.* These theoretical concepts have been widely applied (almost 60,000 citations.

1. **Performance expectancy:** In the context of research supervision, performance expectancy considers research supervisors' beliefs that GAI applications might enhance the research supervision process, fast-track research learning and reduce research supervisor workload.

2. **Effort expectancy:** If users of GAI are inclined to believe that GAI usage is easy to learn and use, then this increases the likelihood of its adoption in research supervision. Research supervisors are likely to embrace GAI's potential if it is easily accessible within their zone of proximal development, and acquiring skills to apply GAI is not likely to require much exertion and application beyond what the individual deems manageable.

3. **Social influence:** This construct refers to how individuals might be inspired by observing influential agents adopt and use GAI. These social agents might include peers, managers and leaders and positive institutional declarations of the value of GAI for research supervision. As such, social influence is a crucial determining factor of individuals' disposition towards GAI in research supervision.

4. **Facilitating conditions:** In contexts where enabling and scaffolded support exist for learning how to use GAI, the readiness of research supervisors to embrace GAI is likely to be much greater. Such support extends to the availability of technical infrastructure (including the internet) and digital artefacts, including computers (Abbad 2021).

UTAUT also identifies demographic and contextual variables – gender, age, experience, and voluntariness of use – as moderating factors in technology adoption. While the current study does not focus on these variables in depth, they are noted as potentially influential for understanding variations in acceptance across different student and faculty groups, warranting further research.

UTAUT is particularly relevant for this study because it can encapsulate the complex interplay between human factors and technology acceptance. As AI tools increasingly automate assessment tasks, assessing how users receive these tools within the unique context of education becomes essential. Given the rapid advancements in generative AI and their adoption in educational settings, UTAUT provides a structured approach to examining both the advantages and limitations of AI-generated tools. For instance, while tools like ChatGPT and Copilot offer benefits in terms of scalability and responsiveness in assessment, they also present challenges such as ethical considerations, potential biases, and the risk of over-reliance on technology for feedback.

The use of UTAUT in this study foregrounds the factors influencing user acceptance of AI tools. It highlights the impact of these tools on educational practices, enriching the understanding of how AI can reshape assessment and feedback in higher education. The integration of UTAUT into this study allows for a nuanced exploration of how institutional culture and disciplinary norms shape research supervisors' engagement with GAI. While the framework traditionally emphasizes individual-level acceptance factors, its application in this context extends to broader systemic and structural considerations, such as the role of institutional policies, academic traditions, and disciplinary epistemologies in moderating AI adoption. Research supervision is inherently a relational and iterative process, and the introduction of AI-driven tools necessitates a critical reflection on how these technologies align with, disrupt, or transform existing academic mentorship paradigms. By leveraging UTAUT, this study not only assesses the likelihood of AI adoption in postgraduate supervision but also interrogates the deeper pedagogical and epistemological shifts that such adoption may entail.

Research Methodology

Paradigmatically, this study is located in the Interpretive framework. As such, it moves from the premise that there are multiple realities at play that are subjective, complex, and context-dependent. A qualitative approach was

adopted in an effort to capture rich, context-specific insights into university academics' responses to generative AI's impact on their research supervision practices (Cohen *et al.* 2017). Ethical clearance was obtained from the University of KwaZulu-Natal (UKZN) under protocol number HSSREC/00005732/2023.

Purposive sampling was employed to select a targeted group of academics from the College of Law and Management Studies and the College of Humanities at UKZN. These participants were selected on the basis of their disciplinary diversity and the range of perspectives they might offer on how GAI impacts their work as research supervisors. Data were collected through a qualitative online open-ended schedule administered via Google Forms. The choice of Google Forms allowed for accessible and convenient participation, ensuring data security while preserving anonymity. Participation was entirely voluntary and with informed consent and anonymity protocols duly followed. The value of this data collection technique was that it allowed these volunteer university academics an opportunity to carefully consider their responses and capture them at their own pace and with the level of comprehensiveness that they wanted to give to each open-ended question. The online schedule link was shared directly with participants via university email, providing easy access while allowing participants to respond at their convenience within a 3-week period. It comprised 29 questions: nine focused on demographic information, and 20 aimed to elicit reflective, qualitative responses regarding the impact of AI-generated tools on curriculum, pedagogy and research supervision practices.

Before the main data collection undertaking, the schedule of open-ended questions was piloted with two academics to refine question clarity, flow, and relevance. This pilot stage helped ensure that prompts were clear and encouraged meaningful reflection aligned with the study's aims.

The responses of 29 participants were recorded anonymously and exported from Google Forms into Excel for organisation and preparation before being imported into NVivo (Version 12). NVivo was selected for its robust capacity to systematically manage and analyse large amounts of qualitative data. Using NVivo allowed for efficient coding and theme identification, enabling a structured and reproducible analysis process that could ensure consistency and depth in theme development.

Coding was conducted iteratively, utilising both deductive and inductive approaches. The deductive approach was informed by established literature on AI in education, while inductive coding allowed for emergent themes specific to participants' experiences and perspectives. This dual

approach enabled the identification of both anticipated and novel themes, enhancing the comprehensiveness of the analysis (Clarke *et al.* 2015).

Data were analysed through iterative coding cycles to ensure trustworthiness, and themes were refined collaboratively to reduce bias. Following initial coding, participant validation was sought by providing participants with extracts of their responses to verify accuracy and ensure that interpretations aligned with their intended meaning. This participant validation process reinforced the credibility of the findings by involving participants in the interpretive process, thereby enhancing the study's rigour and reliability.

Reflexivity was embedded throughout the research process to acknowledge and mitigate potential researcher biases. Given the interpretive paradigm's emphasis on subjectivity and meaning-making, the research team engaged in continuous reflection on how their own perspectives and experiences with AI in academia might influence data interpretation. This reflexive practice included maintaining analytic memos during coding, discussing emerging insights in collaborative research meetings, and critically interrogating assumptions underlying theme development. Such reflexivity not only enhanced the trustworthiness of the findings but also ensured that the study remained grounded in participants' authentic experiences rather than the researcher's preconceived notions.

In NVivo, thematic analysis was carried out by organising coded data into broader categories, and patterns across participants' responses were examined to formulate themes. This computer-assisted analysis facilitated the handling of substantial qualitative data, allowing for a more efficient and systematic theme development process than manual coding. NVivo's search, coding, and categorisation tools supported the refinement of themes and subthemes, ensuring a structured, transparent analysis that bolstered the interpretive depth of the study. The methodology employed aligns with the study's aim to explore nuanced academic responses to AI in education, producing data-rich insights to inform future research and practice.

Key Findings

Several key issues emerged from the data. Some participants indicated that AI language models like ChatGPT can be invaluable in research proposal development. They believed the application might be used to identify and select relevant theoretical and conceptual frameworks and choose a methodological approach in proposal development. Other participants reported that ChatGPT

can be helpful in the literature review section of a proposal by offering guides on how to analyse research data and reference information in a thesis. Furthermore, there was a sentiment that GAI can aid students in identifying the authoritative sources in their area of research and offer the core reading list they require.

Cautious Acknowledgement that GAI can Help Clear the Forest and Expedite Research Proposal Development

Pinpointing a robust research topic during proposal development is acknowledged as a formidable challenge many students face. Consequently, AI language models, including ChatGPT, are posited to play an invaluable role in this regard, as articulated by Participant #16.

> *Identifying a robust research topic in proposal development is a challenge most students face. This is where AI language models like ChatGPT can play invaluable roles.*
>
> *Students sometimes struggle with honing in on a specific topic – AI can generate various research questions based on an initial idea. It can provide good leads regarding the main theoretical ideas, but all these need to be checked and verified. It is a bit less adept with methodology ideas, but it can be a decent starting point, too.*

This participant contended that AI could generate diverse research questions based on a researcher's initial idea and might provide leads concerning key theoretical concepts. However, it is emphasised that these AI-generated suggestions necessitate thorough scrutiny and verification. While ChatGPT is deemed less proficient in suggesting methodological ideas, it is acknowledged as a viable starting point.

Despite the recognised utility of ChatGPT, a divergence of perspectives emerged among other participants. Participant #20 acknowledged the utility of ChatGPT for staff and students in proposal development yet confessed to limited personal use and consequent uncertainty regarding its application in research proposal development. Similarly, Participant #17, citing a lack of familiarity with its potential and challenges, was highly reluctant to endorse its use.

Some participants also expressed reservations about the incorporation of ChatGPT in proposal development. Participant #15 posited that while ChatGPT can provide a template for developing a research proposal, students must engage in human cognitive processes for lateral thinking.

Participant #10 asserted that students should refrain from its use and contended that reliance on ChatGPT may inaccurately represent students' capabilities, suggesting its use solely for tasks such as grammar checks. Participant #4 was vehemently against the idea of using GAI in proposal development, attributing its limited efficacy to producing very basic outputs. They believed that GAI could not discern research gaps and areas warranting future exploration.

GAI is a Blessing for Conducting Literature Reviews

Participants identified different ways that GAI might be used for literature reviews. These include identifying key themes and examples in the literature, selecting relevant topics, searching for relevant literature, enhancing citation accuracy, generating reading lists, providing structure for literature review, structuring research questions/objectives, and identifying key trends on a given topic. It was also noted that ChatGPT can help researchers identify the authoritative sources and the gaps in the chosen field. Participant #26, for instance, reported that ChatGPT can be used,

> *... to guide students, analyse the results and identify the gaps or limitations in the current knowledge. The Participant further noted that the application could be used "to guide students refine their topic or question based on the gaps and generate new keywords or phrases using ChatGPT and in shaping/rewording their research questions and research objectives appropriately (Participant #26).*

Participants who had experimented with different GAI applications were able to draw comparisons as to their relative effectiveness, indicating that some platforms were more effective than others. For respondent #3, for instance, elicit.com was viewed as more effective in abstract summaries. Participant #16 raised a similar issue:

> *ChatGPT is not the best tool for literature searches.*

Despite the generally positive views concerning the value of ChatGPT in conducting a literature review, some participants had either not used it for the literature review or were unsure of how it could be used. There was genuine concern by some participants about the potential for unethical conduct by students in their writing of literature reviews and that this might go undetected. For other participants, there was also real concern that the voice of the researcher might well be replaced by that of the GAI application as Participant #24 duly noted.

> *... it should be used as a tool to support your research, not as a substitute for critical analysis or the guidance of your academic advisor or domain experts.*

Diverse applications of GAI in the context of the literature review were discerned by participants, who reflected on multifaceted contributions to the research process. These applications in their view encompass the identification of key themes and examples within the literature, the selection of pertinent topics, literature search facilitation, augmentation of citation accuracy, generation of comprehensive reading lists, provision of structural frameworks for literature review, formulation of research questions and objectives, and identification of prevalent trends within a specified subject area. Noteworthy is the capacity of ChatGPT to assist researchers in recognising authoritative sources and discerning gaps within the field. Participant #26 elucidated the potential utility, affirming that ChatGPT can guide students in analysing results, identifying knowledge gaps or limitations, refining research topics or questions based on identified gaps, and generating new keywords or phrases. Moreover, it aids in appropriately shaping and rewording research questions and objectives.

Despite the generally favourable perspectives on the efficacy of GAI in the literature review, a contingent of participants either refrained from its utilisation in this context or exhibited uncertainty regarding its applicability. Ethical considerations surface as a deterrent for some, positing ChatGPT as a potentially ethically precarious tool. Participants also advocated for caution, emphasising that GAI should not supersede the role of the researcher. Participant #24 underscores this sentiment, asserting that ChatGPT should function as a supportive tool rather than a substitute for critical analysis or the guidance provided by academic advisors or domain experts.

GAI Holds Potential for Research Instrument Development and Data Analysis but the Authenticity of Ownership is Troubling

More than half of the respondents (n=16) reported that AI can support research instrument development. According to Participant #11, AI,

> *will provide the student with a good indication of the validated studies that have been conducted and a quick and easy set of references to enable the student to access the source of the research instrument so that it can be adapted for the current study.*

Participants noted that AI can aid in directing students to previously validated studies, which can be a helpful guide in developing their research instruments. They believed that AI language models like ChatGPT can also be valuable in creating and framing questions in research instruments like interview schedules. In that regard, participant #5 reported that AI could be used,

> *to generate quantitative questionnaires as well as directives on how to develop interview or focus group schedules. Could assist in highlighting newer forms of instruments*.

However, one respondent reported that AI cannot and should not be used in developing research instruments because the University had no policy guiding the deployment of AI in developing research. In addition, eleven participants reported being unsure of how AI can be used in developing research instruments because they were unfamiliar with its functionality and potential.

Most study participants (n=24) reported that GAI holds much promise in assisting students with data analysis. About half of the participants (n=14) reported that Gai was useful for analysing both qualitative and quantitative data. According to Participant #15, GAI improves,

> *data collection and better analytics to produce insightful and better representations of results.*

Four participants reported its usefulness in analysing quantitative data, while three reported its usefulness in analysing qualitative data. At the same time, however, ten participants reported that GAI was not useful in data analysis.

Three of the ten respondents reported GAI's inability to perform data analysis and felt that it could not be used for either qualitative or quantitative data. It was clear that these participants had not explored GAI to any significant extent.

Contrary to the prevailing sentiment, one respondent contends that the absence of a university policy governing the deployment of AI in research development precludes its use in crafting research instruments. Additionally, eleven participants express uncertainty regarding the applicability of AI in this context, citing a lack of familiarity with its functionalities and potentialities.

The prevailing consensus among a significant portion of respondents underscores the utility of AI, specifically ChatGPT, in facilitating research instrument development. The elucidated benefits include providing access to validated studies, expeditious referencing, and guidance in structuring research instruments. Despite these affirmations, notable reservations and uncertainties persist among a subset of respondents, reflecting varying levels of institutional policy awareness and apprehensions regarding AI functionalities.

Discussion of Findings: The Risk of Ceding Responsibility to GAI

The findings of this exploratory study are based on early empirically generated evidence on university teachers as they conduct their jobs as research supervisors. Much of the deliberations in academic circles up to that point were based on anecdotal evidence and personal reflections, as were many of the support initiatives that were presented to make the presence of GAI better understood in the academic arena. This study reveals the continuum of proclivities for engaging with GAI's potential in research supervision. This ranged from technophiles keen to embrace the profound affordances of GAI for research supervision to technophobes reluctant to venture into the world of GAI. As in any continuum, some individuals occupy different places on the technophile-technophobe continuum as it relates to how they envisage the effect of GAI on their work as research supervisors.

At the time of conducting this study, the world had just begun to recover from the effects of COVID-19. This contagion triggered rapid development in digital technology, especially in teaching and learning. At the time, technology-averse teachers at both universities and higher education realised that for their survival and effective functioning, they had to reskill and develop new competencies to remain relevant. At the time, the performance expectancy of

online teaching and learning was shadowed by face-to-face in-class teaching. In the case of GAI and its implications for the research supervision enterprise, there is a need to manage the expectations and perceptions of lack thereof amongst research supervisors. For those technophilic research supervisors, managing expectations may entail exercising restraint and sober assessments of research student supervision responsibilities. There is a real danger that research supervisors (both experienced and novices) might abdicate some of their responsibility or cede responsibility for supervision to GAI. This is a concern also raised by Dai *et al.* (2023). In key aspects of the research supervision enterprise, from supervising the initial stages of the project (project conceptualisation and research proposal development) to supervising the choice of research methodology and methods, data analysis and the eventual construction of the research project report, supervisors need to mindful of the research students under their care and the proclivities of such students for technology adoption. Large-scale studies of university students' propensities for technology indicate that the higher education student body is far from homogenous.

Mismatches between research supervisors and students with different propensities for GAI adoption will likely create tensions that might not have existed previously, a finding also revealed by study of teacher educators. Research supervisors indeed need to manage this tension. In instances where technophile supervisors are paired with technophobe students, there is much opportunity for powerful, technologically savvy supervisors to guide their students and scaffold research student learning in particular ways related to using GAI in the research process. Such supervisors may be able to help research candidates develop positive effort expectancy and performance expectancy, which may result in better harnessing of the potential of AI in the research enterprise. As expected, much is still to be learnt about how these relationships work. As such, it presents as an area that is ripe for research. In contrast, when research supervisors who might be technophobes are assigned to supervise the research projects of students who are technophiles and already relishing the affordances of GAI, these supervisor-supervisee relationships are likely to present peculiar challenges for both the supervisor and student and an issue that needs due consideration and further research.

The speed and efficiency of GAI in harnessing the enormous amount of extant literature in the various fields of academic scholarship is unprecedented. This is viewed as remarkable by research supervisors who are beginning to see the power of GAI's considered and responsible use. The

implication for research supervision is that supervisors may now demand more sophisticated and expansive literature reviews, given the capability that GAI has to assist research students with the tedious task of manually trawling through the many scholarly databases that house scholarship on the respective phenomena they wish to study. This concurs with Dai *et al.*'s assessment that supervisor expectations of their research students will likely shift (2023). The effecttive use of GAI (through nuanced prompt engineering, for example) is likely to reduce the time that research students might take to identify proverbial lacunas in their respective fields and develop their research foci and research proposals.

Given the timing of this study, that is, in the very early days of free GAI, what was clear was that many participants in the study were yet to have immersed themselves into the world of GAI and had not experimented to any significant extent, with the many GAI applications that were beginning to emerge as free or with nominal charges. With regard to effort expectancy, mastering the mechanics of the use of Research Rabbit, an AI-powered tool, for example, might be viewed as requiring too much effort on the part of research supervisors, let alone be in their realm of immediate experience.

Almost half the participants in the sample had what might be regarded as second-hand, anecdotal knowledge of GAI and its advantages and perils suggesting that the social influence factor of this technological innovation could well be a crucial leverage point for universities as they orchestrate staff development initiatives that might be led by influential, successful academics who are beginning to employ GAI as part of their personal research supervision skills repertoire. To allay fears and anxieties about the risks of irresponsible GAI use in research, such staff development programmes need to necessarily include aspects of caution. Such professional development might consist of direct reference to university policy, including the legal ramifications for research supervisors and students for transgressions related to negligence, plagiarism and abuse.

The findings also highlight the ethical dilemmas that arise when research supervisors integrate GAI into their supervisory roles. While GAI tools can significantly enhance efficiency by assisting in literature reviews, refining research questions, and even generating preliminary data analysis interpretations, concerns about academic integrity and the authenticity of student work remain prominent. Some supervisors expressed apprehension that students might become overly reliant on GAI, using it not as a tool to aid their critical thinking but as a substitute for deep intellectual engagement with their research. This aligns with broader concerns in the literature regarding the overuse of AI in education, where scholars argue that without careful oversight, AI-generated

outputs may dilute the originality and rigour of academic work (Mhlanga 2023). As such, the study underscores the importance of supervisors maintaining a balance between leveraging AI's capabilities and fostering an environment where students develop independent analytical and research skills.

Additionally, institutional readiness and policy frameworks emerged as key themes in the findings. Many research supervisors indicated uncertainty about their university's stance on GAI, with some reporting a lack of clear guidelines on its ethical and pedagogical use. This gap in institutional support suggests that universities need to be more proactive in crafting policies that not only regulate AI use but also provide structured training for both staff and students. Without clear directives, there is a risk that GAI adoption will be inconsistent, leading to disparities in how research students are supervised across disciplines and faculties. As observed in previous studies on digital transformation in higher education, structured institutional interventions, including professional development programmes and formal AI literacy training, are critical to ensuring that technology adoption aligns with academic integrity principles and enhances rather than undermines the research supervision process (Alam & Tondeur 2024).

Institutional Policy Development and Comparative Lessons

University policies on GenAI have emerged unevenly across jurisdictions, and comparative analysis highlights several design principles that could guide South African institutions. Document analyses of institutional AI guidance reveal common features: clear scope (what tasks and outputs must be disclosed), disciplinary differentiation (different rules for STEM, creative arts and humanities), staff and student education requirements, and mechanisms for enforcement and appeal (Humble 2025; Chan *et al.* 2023). Comparative studies from Asia, Europe and North America show diverse models — from permissive, AI-positive frameworks that emphasise disclosure and pedagogy (e.g., Hong Kong university pilots framed as 'AI ecological policy') to restrictive approaches that ban certain AI uses in high-stakes assessments (inspections and regulatory advisories in Australia have led to oral defences and stricter checks in some institutions) (Chan *et al.* 2023; TEQSA advisory reporting). For South African universities, a hybrid model may be appropriate:

(1) adopt a university-wide statement aligned to national and UNESCO ethical norms;

(2) require faculty-level operational rules that interpret the statement for disciplinary practices; and

(3) mandate capacity-building and monitoring mechanisms.

Policy processes should be participatory and iterative: evidence from institutional document studies suggests policies developed top-down without stakeholder engagement risk low compliance and unintended consequences; conversely, inclusive processes that involve supervisors, students, ethics committees and legal counsel produce contextually sensitive and enforceable guidance (Wilson 2025; Humble 2025). Finally, given the resource differentials across South African institutions, inter-institutional collaboration (shared templates, pooled training resources, and national guidance from bodies such as CHE/ DHET) can reduce duplication and ensure more equitable policy uptake across the sector. Incorporating these comparative lessons into institutional policy design will reduce policy lag and better align supervisory practice with ethical and pedagogical objectives.

Concluding Comments

This study has demonstrated that research supervision in South Africa is being reshaped in complex ways by the emergence of GAI. Supervisors occupy a spectrum of positions, from technophiles eager to experiment with AI affordances to technophobes reluctant to cede any ground to technology. What emerges clearly is that the ethical implications extend far beyond plagiarism: issues of authorship, epistemic justice, accountability, and bias must be central to any supervisory practice that incorporates AI. For African universities, these challenges are further compounded by infrastructural inequities and the imperative to protect local knowledge traditions within a globalised, AI-driven research landscape.

The study also underscores the critical role of institutional policy development. While universities in the Global North are experimenting with transparent disclosure frameworks and discipline-sensitive guidelines, many South African institutions continue to lag in formulating clear, enforceable policies. Comparative lessons suggest that participatory, contextually grounded policy processes are essential to avoid both over-restriction and uncritical adoption.

By explicitly engaging the South African higher education context and situating findings within wider African and international debates, this paper contributes to a more nuanced understanding of AI adoption in research supervision. It highlights the urgent need for universities to design policies that support innovation while safeguarding academic integrity, epistemic diversity, and ethical accountability. Future research should expand to cross-institutional and cross-country comparisons in Africa, exploring how supervisors and students negotiate the risks and opportunities of GAI in contexts marked by uneven resources and contested knowledge traditions.

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