

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

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ABSTRACT: The growing integration of Artificial Intelligence (AI) in academic research presents both transformative opportunities and tough challenges, particularly regarding the originality and authenticity of postgraduate students' research as well as heightened concerns among supervisors regarding their ability to distinguish between human-generated and AI-generated research. The study examined postgraduate supervisors' knowledge of AI tools, their detection capabilities, and the level of institutional preparedness in detecting AI-generated research. Using a quantitative approach, data from 34 respondents was analyzed to uncover the complexities of managing AI-generated material in research contexts. The findings revealed that most supervisors were aware of AI tools; their familiarity was largely limited to ChatGPT, with little knowledge of other advanced tools such as Jasper.ai and Perplexity AI. Supervisors reported significant difficulties in detecting AI-generated content and relied heavily on manual reviews and Turnitin. Furthermore, institutional policies were perceived as inadequate with critical gaps in training, enforcement mechanisms, and adaptability to evolving AI technologies. A striking disconnect existed between supervisors' knowledge of AI tools and their detection capabilities, underscoring an urgent need for comprehensive regular and continuous training, promoting inter-institutional collaboration, and proactive policies to safeguard research integrity in an AI-driven academic landscape. The recommendations aim to empower supervisors with the expertise and resources necessary to navigate the ethical complexities of AI in postgraduate research.

KEYWORDS: Artificial Intelligence; AI-Generated Content; Higher Education Institutions; Supervisors; Postgraduate Research

INTRODUCTION

Academic research has witnessed rapid growth in using artificial intelligence (AI) and has initiated a revolutionary transformation in higher education, reshaping conventional models of academic writing and academic supervision. Tools such as ChatGPT, GPT-4, Perplexity, and Claude are now being utilized by students to write literature reviews, essays, and complex research ideas faster and more persuasively than before (Cotton et al., 2024; Dwivedi et al., 2023). Academic integrity has been threatened by the utilization of these technologies since they are misused despite their possible efficiency, especially in postgraduate studies, where authenticity and originality are core to academic contribution. For supervisors, it has been rather difficult to detect AI-written research from actual human effort (Perkins et al., 2024).

University students are reportedly using AI tools to support academic writing, a tendency that has increased among postgraduate students (Cotton et al., 2024; Eager & Brunton, 2023). Platforms like ChatGPT habitually evade traditional plagiarism detection systems, constructing text that matches human grammar, stylishness, and jargon (Khalil, 2023). This creates a contradiction for supervisors. AI can equalize access to research support, but its misuse threatens the fundamental values of critical thinking and intellectual property (Halaweh, 2023). The variance between "AI-assisted" and "AI-generated" content is increasingly becoming unclear, thwarting ethical oversight and assessment frameworks. There are debates currently concentrating on whether existing detection mechanisms can merge the pace of generative AI's abilities. Turnitin AI and ZeroGPT are some of the available tools to identify machine-generated text through linguistic pattern analysis. However, they reveal false-positive rates and adaptability limitations (Guo et al., 2023). For instance, GPT-4's ability to introduce intentional "noise" such as typographical errors or stylistic inconsistencies can deceive even advanced algorithms (Sadasivan et al., 2023). AI developers are in a technological arms race with detection systems putting supervisors in indefensible positions. They are left to rely on subjective indicators such as deviations in a student's writing style or irregular critical depth of work to identify potential misconduct (Tanimu, 2025). However, the use of such judgments risk bias, especially affecting international students or those with neurodivergent communication styles.

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

The psychological burden on supervisors is equally significant. Postgraduate research supervision is characteristically relational, founded on trust and iterative feedback (Wright, 2024b). Suspecting AI-generated workforce supervisors to go into confrontational positions, possibly compromising mentor-mentee relations (Eager & Brunton, 2023). Institutional pressures to maintain high graduation rates and research output have compromised the situation, which eventually disincentivizes the rigorous scrutiny of academic work (Perkins et al., 2024). Most supervisors especially from African universities feel inadequately trained to deal with AI-related misconduct, with many expressing “detection fatigue” amid increasing workloads (Cotton et al., 2024). While some institutions ban the use of AI entirely, others allow its use with transparency, creating jurisdictional inconsistencies (Dwivedi et al., 2023; Halaweh, 2023). Traditional plagiarism frameworks, designed for copy-paste transgressions have been rendered less effective when applied to AI-generated content (Fyfe, 2023). As Zawacki-Richter et al. (2019) caution, treating AI as merely a “tool” disregards its agency in shaping research trajectories. There is need to renegotiate the roles of AI as it has weighty implications for postgraduate education. Where the supervisor’s mandate spreads past content evaluation to fostering “epistemic autonomy”, a task complicated by AI’s opaqueness (Joyner, 2023).

The rise of Gen-AI tools in postgraduate research, such as Deep Seek and ChatGPT, has complicated conditions for supervisors. Although Gen-AI technologies enhance productivity, they erode academic integrity by generating material that cannot be differentiated from human output (Eke, 2023; Koop & Gröblinger, 2024). Supervisors are challenged to identify AI-generated research through heightened tool sophistication, unreliable detection software, and weak institutional policies. This translates to eroding research individuality, devaluing the degree, and loss of academic credibility (Giray, 2024). Ethical worries are growing about the overreliance on AI, which risks critical thinking. There is an urgent need to develop solutions that combine innovation with integrity, therefore addressing flawed detection technologies, biased human judgment, and the lack of universal ethical frameworks in an AI-driven academic era (Duenas & Ruiz, 2024). This paper addresses a research vacuum by investigating the current state of AI adaptation in higher education, with an emphasis on supervisors' knowledge of AI tools, their detection capabilities, the efficacy of institutional policies, and the consequences for academic rigor in a post-plagiarism age.

1.2 Research Objectives

The study focused on the following specific research objectives;

- i. Assess the postgraduate supervisors’ knowledge of the available AI tools used by students.
- ii. Evaluate the postgraduate supervisors’ abilities to detect AI-generated research content.
- iii. Examine the efficiency of current regulations and tools for identifying AI research content.
- iv. Provide suggestions on how educational institutions can assist supervisors in evaluating the authenticity and openness of postgraduate research.

LITERATURE REVIEW

2.1 Theoretical Review

Our research is grounded in the Technology Acceptance Model (TAM) Theory of Davis (1989). The theory posits that technology adoption is motivated by Perceived Usefulness (PU); the perception that a system improves performance and Perceived Ease of Use (PEOU); simplicity of use of the system, both of which shape users’ attitudes, intentions, and usage behavior. The theory thus according to our study explains how postgraduate supervisors engage with AI technologies during research supervision. According to our study, PU thus stands for the perspective that supervisors hold about how AI tools are either enhancing or worsening research integrity, and PEOU means convenience with which they can recognize content produced using AI tools. In the study, training and institutional policy are external controls over the adoption of AI tools within academic supervision.

2.2 Related Studies

Postgraduate Supervisors’ Knowledge of the Available AI Tools Used by Students.

The dynamic shift in the AI field within the last couple of years has resulted in a vast range of AI tools being used by students pursuing higher studies to fulfill their academic tasks (Sova et al., 2024). With the advancement of AI, its influence on learning environments, particularly in postgraduate research supervision, becomes more pertinent necessitating comprehension of the supervisors’ knowledge of such advancements. Studies have examined the understanding and usage of AI materials among postgraduate supervisors in universities. One of the UNISA studies carried out by Gumbo (2018) showed that there existed very little sensitization among a South African university's supervisors toward novel technology equipment used for supervision and that they had the choice of determining efficiency and quality during their supervision depending on their comprehension and usage of existing online utilities and ICTs. It was, however, discovered in the research conducted that supervisors were unaware of these tools, with only most of them familiar with common tools such as email, MS Word, and the learning management system used by the university. Most of the supervisors require training on the utilization of online technology tools and ICTs in a bid to improve their supervision (Gumbo, 2018). Although awareness of AI tools is higher in learning institutions, they are not utilized much, mainly because they are not officially accepted in most learning institutions. Nevertheless, lecturers agree that AI tools can

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

play an important role in improving learning and academic writing (Ponera & Madila, 2024). Research also argued that the most significant challenges to the use of AI tools in postgraduate supervision and academic research are supervisors limited knowledge of AI tools, concerns that AI would restrict students' critical thinking capabilities, worries about more plagiarism, and absence of official recognition and guidelines for using AI in learning institutions, all of which are reasons for low usage despite a perception of their potential utility (Mohmed & Elballat, 2024; Ponera & Madila, 2024).

Postgraduate Supervisors' Abilities to Detect AI-generated Research Content.

The introduction of generative AI tools has brought significant difficulties to postgraduate supervisors in the higher education sector, primarily in their ability to detect AI-generated research content. Studies have been conducted to investigate the difficulty in detecting AI-generated content in the academic setting. Research conducted has confirmed that it is challenging for academic supervisors to detect text created by AI routinely in student submissions. In a single experiment alone, only 54.5% of AI-generated submissions were reported for academic dishonesty, underlining the detection difficulty even for seasoned scholars. This is also made difficult by the fact that AI-generated content can score the same performance marks as student-generated content, with AI-generated submissions scoring an average of 52.3 and student submissions scoring an average of 54.4 (Perkins et al., 2024). The problem is compounded by the limitations of conventional plagiarism detection software, which cannot always spot AI-generated content because of syntax and structure differences between human-generated and machine-generated content. While there are detection tools for AI-generated content with the potential to recognize machine-generated content based on certain features, they are not foolproof (Santra & Majhi, 2023). Another study found that the participants were able to detect AI-written texts only up to 24% (Kumar & Mindzak, 2024). With the dynamic nature of research in academia changing, postgraduate supervisors are challenged daily with the question of how to deal with these issues in the absence of concrete procedures due to the constantly shifting nature of AI, apparently calling for ongoing research and learning in supervisory practices (Rajab et al., 2024; Wright, 2024b).

The Efficiency of Current Regulations and Tools for Identifying AI Research Content.

Recent developments in AI have questioned the detection of AI-generated research papers and their academic integrity (Rajab et al., 2023; Willie, 2024). Although AI offers potential benefits in regulatory affairs and pharmaceutical processes, it also comes with validation, data privacy, and ethical issues. Existing laws and frameworks for the identification of AI research content continue to develop, with regulatory bodies continually striving to introduce standardized procedures and guidelines (Ajmal et al., 2025). The Implementation of AI principles demands new processes, frameworks, and tools to harmonize risk management with value creation (Boza & Evgeniou, 2021). In biobanking and biomedical research, ethical considerations of AI use are in most ways no different from those in normal research, including informed consent and big data management. As AI continues to reshape various fields, there is a growing need for proactive collaboration with regulatory bodies and the development of practical tools to support ethical AI implementation (Ajmal et al., 2025; Kargl et al., 2022).

Suggestions on how educational institutions can assist supervisors in evaluating the authenticity and openness of postgraduate research.

Previous studies have confirmed the impact of generative AI technology such as ChatGPT in enhancing quality, accelerating the pace, and increasing autonomy for students in postgraduate research supervision and academic integrity (Dai et al., 2023). It however poses challenges to the supervisors in assessing the authenticity (Wright, 2024b). In response to these challenges, universities are developing policies for the use of AI for assessment, including academic integrity, test design, and student communication (Moorhouse et al., 2023). Although academic integrity is bound to be undermined by AI, it allows room for improvement in learning and research (Ganguly & Pandey, 2024). Institutions and supervisors will need to adjust as the environment evolves, developing new competencies such as "generative artificial intelligence assessment literacy" to superintend and assess postgraduate research in an AI-bred world (Moorhouse et al., 2023).

METHODOLOGY

3.1 Research Design

The study employed a correlational approach to investigate the application of AI technologies in higher education, and its implication on postgraduate research. This is echoed by Darrin and Pavel (2023), who explained that the design builds knowledge and understanding of phenomena. This design was chosen as it enabled testing for the relationships between variables, for instance, supervisors' awareness of AI tools, their detection capabilities, and the impact of institutional policies. While descriptive statistics provided summaries of supervisors' knowledge of AI tools, detection abilities, and policy effectiveness, correlation analysis was conducted to determine whether these factors were interrelated. Correlation analysis was particularly appropriate in this study because it helped move beyond merely describing trends to understanding the interrelationships between key factors influencing AI adaptation in postgraduate research supervision. It allowed for an investigation into whether familiarity with AI tools improved supervisors' ability to detect AI-generated content or whether institutional policies influenced supervisors' detection confidence. Incorporation of correlation analysis ensured a more comprehensive evaluation of AI's role in research

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

supervision. This strategy was deemed suitable for gathering quantifiable data from faculty research supervisors and university administrators.

3.2 Sample Selection

The selection of the participants was purposive. The study targeted postgraduate research supervisors with at least an academic achievement of a PhD and substantial experience in supervising postgraduate research both serving in administration and academics at the Islamic University in Uganda. The study initially identified 45 participants based on their characteristics, knowledge, and experiences in research supervision. The data producing sample was 34 which yielded 75% of the returned responses ensured a good representation of participants from various academic disciplines. Although a formal calculation for sample size was not performed owing to the constrained population of qualifying supervisors, the determined sample size was considered adequate to yield significant insights regarding the study.

3.3 Data Collection Tool

An online survey questionnaire with five sections: Demographic Information; Knowledge of AI Tools; Ability to Detect AI-generated research Content; Effectiveness of Existing Policies and Technologies and Guidelines for Authenticity and Transparency containing 33 items was used to collect quantitative data for the study. The survey was shared with respondents for their participation via their email addresses and WhatsApp contacts. The indicators that were employed in the questionnaire were drawn from literature searches and earlier tests of AI-generated content detection (Helen & Diane, 2023) (NONTUTHUZELO, 2024). To ensure validity and reliability, the questionnaire underwent expert review by academic professionals in AI research and education, followed by a pilot test with a small group of 5 supervisors to check for clarity and question consistency. The survey employed 3 scales. A 4-point Likert scale from 1 being “Strongly Disagree” through to 4 being “Strongly Agree” for opinion-based questions and frequency responses utilized a scale of “Never” up to “Always”. The scaling method helped in measuring the quantitative size of the subjective judgments taken and enabled the statistical analysis of trends and relationships in the data.

3.4 Data Analysis

The quantitative data was analyzed to show the patterns, correlations, and trends with the help of statistical package for social sciences (SPSS 27). The data was cleaned for errors, transformed from text to numerical values from the downloaded Excel file, and imported into SSPS for analysis. The analysis involved descriptive statistics, including mean, standard deviation, and frequency distributions and presented in tables and graphical formats for interpretation. Inferential statistics, specifically correlation analysis, was performed to determine relationships between AI adaptation and supervision of postgraduate research.

3.5 Research Ethics

The study adhered to ethical guidelines in maintaining data integrity and ensuring participants’ anonymity. Informed consent was obtained from all participants before data collection, and they were apprised of their right to withdraw at any stage without consequences. The study-maintained anonymity in the survey questionnaire by excluding personal identifying information.

FINDINGS

This study investigated the awareness, knowledge, and detection ability of postgraduate supervisors regarding AI-generated research content. Our findings demonstrated a complex relationship between supervisors’ knowledge of AI tools, their capacity to spot AI-generated content, and the efficacy of institutional policies aimed at addressing these issues. With the evolving landscape of AI technologies, institutional standards, and policies for AI adoption in research are generally ambiguous or in the developmental stage. Our results pave way for an immediate debate regarding how the AI revolution is to be handled in higher education.

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

Respondents' Demographic Information

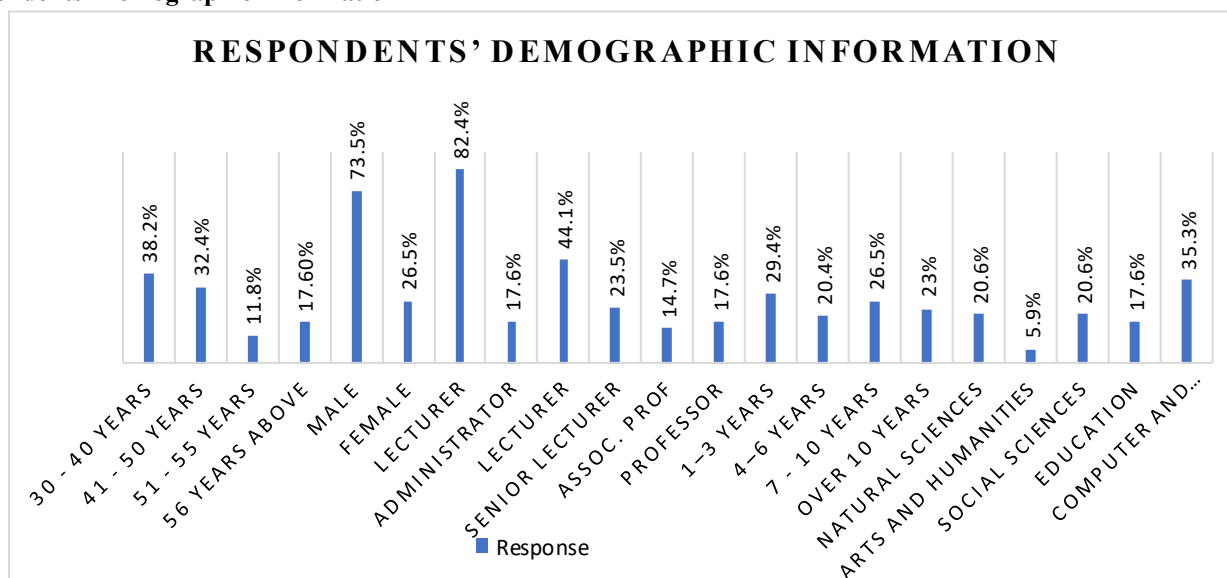


Figure 1: Respondents' Demographic Information

According to the demographic findings of 34 postgraduate research supervisors surveyed as presented in Figure 1, the majority of postgraduate supervisors are in their early to mid-career stages 30-40 years (38.2%), and predominantly male (73.5%). Most respondents (82.4%) were lecturers, with academic growth levels ranging from lecturer (44.1%) to professor (17.6%). Supervisory experience varied, with 29.4% having 1-3 years and 23.5% exceeding 10 years. The academic disciplines supervised were varied, Computer and Electronics (35.3%), Natural Sciences (20.6%), Social Sciences (20.6%), Education (17.6%), and Arts and Humanities (5.9%).

Table 1: Postgraduate Supervisors' Knowledge of the Available AI Tools Used by Students

	Mean	Std. Deviation
Respondent's awareness of AI tools commonly used in academic research	1.35	.485
CHATGPT AI-generative tool is familiar to the respondent	1.00	.000
Copy.ai AI-generative tool is familiar to the respondent	.03	.171
Character.ai AI-generative tool is familiar to the respondent	.00	.000
Jasper.ai AI-generative tool is familiar to the respondent	.24	.431
Notion.ai AI-generative tool is familiar to the respondent	.03	.171
Perplexity AI-generative tool is familiar to the respondent	.41	.500
WriteSonic AI-generative tool is familiar to the respondent	.00	.000
Julius AI-generative tool is familiar to the respondent	.29	.462
Gemini AI-generative tool is familiar to the respondent	.62	.493
Claude AI-generative tool is familiar to the respondent	.26	.448
AI Resources AI-generative tool is familiar to the respondent	.03	.171
Undetectable AI-generative tool is familiar to the respondent	.00	.000
Respondent's understanding of the capabilities of AI tools	2.06	.886
Respondents' attendance of training or workshops on AI tools in education and research	1.47	.507
Respondent's ability to stay updated on emerging AI tools	2.36	.994
Respondent's thoughts on the frequency of postgraduate students' usage of AI tools for research	2.06	.814

The findings on the knowledge of AI tools revealed critical perceptions of postgraduate supervisors' awareness, challenges, and practices regarding AI tools in academic research. While most postgraduate supervisors were aware of AI tools used in academic research (Mean = 1.35, SD = 0.485), familiarity was limited to ChatGPT (Mean = 1.00, SD = 0.000). However, awareness of other AI-generative tools remains significantly low, with Copy.ai (Mean = 0.03, SD = 0.171), Jasper.ai (Mean = 0.24, SD = 0.431), and Perplexity AI (Mean = 0.41, SD = 0.500) being the only other tools known to some respondents. Although supervisors

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

expressed a moderate understanding of AI tool capabilities (Mean = 2.06, SD = 0.886), their ability to stay updated on emerging AI technologies is inconsistent (Mean = 2.36, SD = 0.994). Notably, the hindrance of supervisors' limited familiarity with AI tools emerges from supervisors' very low participation in AI-related training or workshops remains limited (Mean = 1.47, SD = 0.507) which continues to hinder their abilities to adapt to the rapid evolution of AI. (Mean = 2.06, SD = 0.814) of supervisors perceive that postgraduate students frequently use AI tools for research.

Table 2: Postgraduate Supervisors' Abilities to Detect AI-generated Research Content

	Mean	Std. Deviation
Respondent's ability to identify AI writing style in postgraduate students' research	1.41	.500
Respondents' opinion on if the employ specific methods to identify AI-generated content	1.44	.504
Manually review	.62	.493
GPTZero	.18	.387
Turnitin	.74	.448
Originality AI	.03	.171
Crossplag AI	.00	.000
Winston AI	.00	.000
Content at scale	.00	.000
Copyleaks	.03	.171
Detect GPT	.03	.171
Passed AI	.00	.000
AI Detector	.00	.000
Respondents' frequency in encountering AI-generated content in student submissions	1.88	.769
Technical terminology	1.21	.410
Consistent tone and style throughout the document	1.41	.500
Unnatural or overly formal language	1.50	.508
Repetition of phrases or ideas	1.44	.504
Absence of critical analysis or original thought	1.44	.504
Respondent's thought on if AI-generated content is harder to detect compared to human content	2.70	1.075
Respondent's opinion on the effectiveness of AI tools in detecting AI-generated content	2.35	.981
Inadequate knowledge of reliable tools	1.50	.508
Inadequate training	1.47	.507
Limited time	1.50	.508
Unreliable Internet	1.62	.493
Usage of low-grade devices	1.68	.475

The descriptive findings evaluating postgraduate supervisors' abilities to detect AI-generated research content reveal that postgraduate supervisors face significant challenges in identifying AI-generated content in student research, with only 41% (Mean = 1.41, SD = 0.500) pointing out a general lack of confidence or capability in identifying AI writing styles. While 62% of respondents rely on manual review as their primary detection method, the use of AI detection tools remains inconsistent, with Turnitin being the most commonly used (74%), followed by GPTZero (18%), while other tools such as Originality AI, Copyleaks, and Detect GPT are rarely utilized (Mean = 0.03, SD = 0.171). The frequency of encountering AI-generated content was rated higher, with a mean score of 1.88 (SD = 0.769), reflecting that supervisors are increasingly aware of AI's presence in submissions yet struggle to effectively detect it. Additionally, the respondents expressed concerns about the effectiveness of AI detection tools, with a mean score of 2.35 (SD = 0.981), highlighting a perception that these tools may not adequately differentiate between AI-generated and human-written content. This is compounded by challenges such as lack of proper training (Mean = 1.47, SD = 0.507), inadequate knowledge of reliable tools (mean = 1.50, SD = 0.508), limited time (Mean = 1.50, SD = 0.508), unreliable internet connectivity (Mean = 1.62, SD = 0.493), and the use of low-grade devices (Mean = 1.68, SD = 0.475), which hindered supervisors' ability to effectively detect AI-generated content. Supervisors with capabilities to detect AI content in student research work usually recognize signs such as unnatural language (Mean = 1.50, SD = 0.508), repetition of ideas (Mean = 1.44, SD = 0.504), and a lack of critical analysis (Mean = 1.44, SD = 0.504). However, they generally agree that AI-generated content is harder to detect than human writing (Mean = 2.70, SD = 1.075).

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

Table 3: Assessing Effectiveness of Existing Institutional Policies on AI Tool Usage in Postgraduate Research

	Mean	Std. Deviation
Respondent's awareness of institutional policies regarding AI tool usage in research	1.65	.485
Respondents' satisfaction with institution's policies on AI tool usage in research	2.94	1.153
Respondent's opinion on the clarity of existing policies about AI use consequences	2.12	1.066
Frequency of finding institutional policies address AI-related issues	2.62	1.129
Respondent's opinion on if there are gaps in existing policies regarding AI-generated research	3.47	.825
Absence of AI-Specific Guidelines	.32	.475
Insufficient Training and Awareness	.59	.500
Inconsistency in enforcement	.41	.500
Inadequate Detection Mechanisms	.50	.508
Focus on Students Only	.32	.475
Insufficient Guidance for Supervisors	.47	.507
Lack of Adaptability	.56	.504
How best can AI content usage be detected and regulated	2.03	.904

The findings regarding the effectiveness of existing policies and technologies for detecting AI-generated content in postgraduate research offered a meaningful look into the current academic landscape. Supervisors were moderately aware of institutional AI policies (Mean = 1.65, SD = 0.485) but expressed low satisfaction (Mean = 2.94, SD = 1.153) and clarity (Mean = 2.12, SD = 1.066), citing vagueness in guidelines. Whereas policies addressing AI issues were available (Mean = 2.62, SD = 1.129), significant gaps remain, including a lack of AI-specific guidelines (32%), insufficient training (59%), inconsistent enforcement (41%), inadequate detection tools (50%), and limited supervisor guidance (47%). Furthermore, 56% of respondents noted policy inflexibility, and 32% criticized the overemphasis on regulating students rather than creating comprehensive frameworks. Supervisors advocate for an extensive approach to detecting and regulating AI-generated content (Mean = 2.03, SD = 0.904).

Table 4: Preferences and Recommendations for AI Guidelines in Postgraduate Research

	Mean	Std. Deviation
Format preferred for guidelines on AI-related issues in research	2.29	.760
What strategies would you recommend for improving research authenticity	2.44	1.160
Whether it's important to integrate AI ethics into postgraduate research guidelines	1.91	1.138
How frequently should guidelines on AI in research be reviewed and updated	2.79	1.293
Collaboration between institutions is essential for developing comprehensive AI-related research guidelines	2.56	1.260
Would you support the mandatory disclosure of AI tools used by students in their research work	3.65	.646

Postgraduate supervisors expressed diverse preferences for AI-related research guidelines, with a moderate preference for structured formats (Mean = 2.29, SD = 0.760). Respondents emphasized the need for multiple strategies to enhance research authenticity (Mean = 2.44, SD = 1.160) and emphasized the importance of integrating AI ethics into guidelines (Mean = 1.91, SD = 1.138). Regular updates to AI guidelines were deemed indispensable to keep pace with technological advancements (Mean = 2.79, SD = 1.293). Collaboration between institutions was also seen as critical for developing comprehensive AI policies (Mean = 2.56, SD = 1.260). Notably, there was strong support for mandatory disclosure of AI tool usage in research (Mean = 3.65, SD = 0.646), reflecting a widespread desire for transparency in academic practices.

Table 5: The Relationships Between Supervisors' Knowledge of AI Tools, their Abilities to Detect AI-generated Research Content, and the Effectiveness of Existing Policies

		Knowledge of AI Tools	Abilities to Detect AI-Generated Research Content	Effectiveness of Institutional Policies
Knowledge of AI Tools	Pearson Correlation	1	.140	.026
	Sig. (2-tailed)		.446	.886
	N	33	32	33

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

Abilities to Detect AI-Generated Research Content	Pearson Correlation	.140	1	-.109
	Sig. (2-tailed)	.446		.545
	N	32	33	33
Effectiveness of Existing Policies and Technologies	Pearson Correlation	.026	-.109	1
	Sig. (2-tailed)	.886	.545	
	N	33	33	34

The correlation analysis from the study as presented in Table 5 provides an important understanding of the relationships between supervisors' knowledge of AI tools, their abilities to detect AI-generated research content, and the effectiveness of existing policies and technologies. Knowledge of AI tools showed a low correlation with detection ability ($r = .140$, $p = .446$), suggesting familiarity alone does not improve detection. Similarly, policy effectiveness had a near-zero correlation with AI knowledge ($r = .026$, $p = .886$) and a weak negative correlation with detection ability ($r = -.109$, $p = .545$), indicating current frameworks inadequately address AI-generated content.

Table 6: Correlation Analysis Between AI-Generated Content and Clarity of Institutional Policies

		AI-generated content in student submissions	Clarity of Institutional policies
AI-generated content in student submissions	Pearson Correlation	1	-.056
	Sig. (1-tailed)		.375
	N	34	34
Clarity of Institutional policies	Pearson Correlation	-.056	1
	Sig. (1-tailed)	.375	
	N	34	34

The correlational analysis concerning respondents' frequency of encountering AI-generated content in student submissions and their perceptions of the clarity of existing policies regarding AI use consequences reveals noteworthy insights. The Pearson correlation coefficient between these two variables is -0.056 , with a significance level of 0.375 , indicating a very weak negative relationship that is not statistically significant. This finding suggests that the frequency with which supervisors encounter AI-generated content does not necessarily correlate with the perceived clarity or lack thereof in existing institutional policies regarding the consequences of AI use. The p-value exceeding 0.05 further indicates that this relationship is not statistically significant.

5.0 DISCUSSION OF FINDINGS

This study's findings reveal both the advantages and drawbacks of incorporating Artificial Intelligence (AI) tools in postgraduate research supervision. Although supervisors generally recognize AI tools (mean = 1.35 , SD = 0.485), their knowledge is primarily limited to well-known platforms such as ChatGPT (mean = 1.00 , SD = 0.000). They demonstrate less familiarity with other tools like Jasper.ai (mean = 0.24 , SD = 0.431), Copy.ai (Mean = 0.03 , SD = 0.171), and Perplexity AI (mean = 0.41 , SD = 0.500), indicating a substantial knowledge gap that could impede effective supervision. This pattern aligns with research from South Africa, which noted that while AI tools can boost research productivity, many supervisors find it challenging to evaluate the authenticity of student work due to their restricted understanding of the broader AI landscape (Daniel, 2024). This lack of awareness is further compounded by insufficient training in this area (mean = 1.47 , SD = 0.507) and variable ability to keep up with emerging technologies (mean = 2.36 , SD = 0.994), thus making supervisors rather unprepared for effectively identifying AI-generated content. Detection of AI-generated content continues to be one significant concern. With 41% of the supervisors showing confidence in detecting, mean = 1.41 , standard deviation 0.500 , this agrees with the finding in studies in Nigeria that show large variations in the awareness and usage of AI tools among postgraduate students, depending on their program types (Terkuma et al., 2024). It is telling that 62% of the respondents asserted their reliance on outdated methods in detecting AI-generated content, such as manual reviews, to be the most frequently used approach; it underlines the current failure in detection systems. This is even more blatantly obvious when compared with recent studies advocating for more organized approaches based on clear guidelines and ethical frameworks for the research use of AI (Wright, 2024). It also pins specific challenges that hinder

Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

the effectiveness of supervisors, such as a lack of training, time limitations, and unstable internet connectivity (mean = 1.62, SD = 0.493), which sheds light on challenges in more detail. Moreover, the correlation analysis pointed out a gap between supervisors' familiarity with AI tools and their ability to identify AI-generated content ($r = .140$, $p = .446$). The absence of high correlation can thus mean that awareness alone might not increase or improve detection capability, a finding supported by other studies that refer to the necessity for comprehensive training and institutional support for AI utilization in academics. The study findings further revealed that 3.47 (SD = 0.825) respondents indicated a perceived policy gap regarding institutional AI usage. The finding aligns with a study by Dai et al. (2023) which highlighted overall concerns regarding the uniformity of AI policies and compliance, as evidenced by numerous international studies requesting clearer regulations and ethical frameworks. Addressing such challenges necessitates universities to collaborate in developing comprehensive AI research policies. Lastly, despite growing awareness of AI tool application in postgraduate supervisory research, much is still lacking concerning filling knowledge gaps, detection ability, and policy control.

6.0 CONCLUSION

This study investigated the challenges faced by postgraduate supervisors in detecting AI-generated texts specifically examining supervisors' knowledge, detection capabilities, and institutional preparedness. Despite AI increasingly becoming a significant influence in the academic research arena, the study concluded that supervisors are not prepared to handle its implications. This was indicated by the far too low obtained means portraying knowledge gaps, and ineffective policies. The study findings established an imperative need for universities to re-evaluate their strategy in handling the challenges posed by AI to postgraduate research. The finding further unearths the gap between knowledge, detection ability, and inadequate policies that threaten academic integrity. Explicit and adaptable guidelines on AI tool applications are absent in institutions currently.

7.0 IMPLICATIONS FOR HIGHER EDUCATION INSTITUTIONS

First and foremost, universities must acknowledge the inevitability of AI in research and take proactive steps to integrate it ethically. Building capacity will also mean priority in the enhancement of supervisors' AI literacy skills for better assessment of research outputs. Lastly, academic institutions must urgently develop comprehensive policies that will regulate AI-generated content in postgraduate research to ensure that huge strides in technology do not undermine academic rigor.

8.0 RECOMMENDATIONS

The study brings forth several recommendations that, if embraced by HEIs, would go a long way in empowering postgraduate supervisors to handle the challenges thrown up by AI in research and also in preserving the integrity of academic work in the age of artificial intelligence. The proposed recommendations are as follows:

1. Institutions should provide supervisors with training programs that will help them understand how AI works, its applications in research, and the way to critically review AI-produced materials.
2. Higher Institutions should fund the procurement and implementation of high-quality AI-detection tools that supervisors can use to differentiate between AI-assisted work and human-created work.
3. Academia should formulate policy frameworks governing ethics on AI implementation in all Research-related undertakings
4. Collaborative efforts among higher institutions should be directed toward the development of standardized policies for the use of AI in academic research.
5. Higher institutions should institute mechanisms of periodical reviewing and updating their directives related to AI applications thereby keeping these directives updated concerning new emerging circumstances related to its applications.

Future Research

These findings have opened up several future research opportunities, which could investigate further the details of AI integration both in academic research and supervision. For example, one may also investigate further the feasibility of automated assessment tools powered by AI in appraising research outputs. Equally, research may go into how students' use of AI tools in their work impinges on the quality, originality, and levels of critical thinking in postgraduate research.

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Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

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Artificial Intelligence Adaptation in Higher Education: Supervisors Efficacy in Detecting AI-Generated Research in Postgraduate Research

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