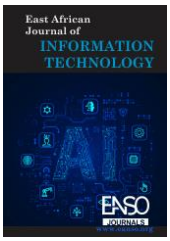

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Original Article

Determinants of AI Utilization among Tanzania Higher Learning Students: Examining Trends, Predictors, and Academic Applications

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ABSTRACT

This study examines the extent, frequency, and determinants of AI tool utilization among undergraduate students at the Tanzania Institute of Accountancy (TIA), Mbeya Campus. Employing a cross-sectional survey design, data were collected from 238 third-year students across four academic programs using a structured questionnaire. Descriptive and inferential statistical analyses were conducted to assess AI adoption trends and key influencing factors, including chi-square tests, ANOVA, and logistic regression. Findings reveal that ChatGPT (85.7%) is the most widely used AI tool, followed by QuillBot (41.1%) and Grammarly (11.8%), while citation generators have the lowest adoption (2.9%). AI is primarily used for writing assignments (47.5%) and idea generation (38.2%), with limited proofreading, research, and citation application. The study identifies familiarity, accessibility, academic engagement, and peer influence as significant predictors of AI adoption, while formal AI training shows no significant impact. Additionally, AI usage varies significantly across academic programs, highlighting the need for tailored institutional policies. The study concludes that while AI enhances academic productivity, the absence of regulatory frameworks poses challenges related to academic integrity and responsible AI usage. It recommends the development of AI literacy programs, faculty training, and ethical guidelines to ensure AI is integrated effectively into higher education while maintaining academic integrity.

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INTRODUCTION

The integration of Artificial Intelligence (AI) tools in higher education is revolutionizing academic activities, offering numerous benefits to students. Generative AI tools such as ChatGPT, Grammarly, and Microsoft Copilot enhance academic performance by improving writing quality, fostering critical thinking, and facilitating personalized learning experiences (Cao et al., 2023; Nouraldeen, 2022; Rabbianty et al., 2023). These tools also support idea development and information synthesis, thereby improving the quality of research papers and academic writing (Aldosari, 2020; Molina et al., 2024; Nazari et al., 2021).

AI adoption in higher education has risen exponentially, with AI systems reaching 100 million active users within a month of their introduction (UNESCO, 2023). However, by July 2023, only China had established regulations for generative AI, leaving most higher education institutions (HEIs) without structured frameworks to guide its ethical and practical use (Miao et al., 2023; UNESCO, 2023). Despite the absence of such policies, AI tools continue to facilitate personalized learning tailored to individual student needs, promote critical thinking, and equip students with competencies necessary for an AI-driven world (Nazari et al., 2021; Saavedra et al., 2024). Collaborative efforts between HEIs and the private sector in AI research and development further drive innovation and enhance expertise, emphasizing AI's transformative potential in academia (Miao et al., 2023; Molina et al., 2024; Selim, 2024).

Despite these advantages, many higher learning institutions lack structured AI literacy courses and institutional policies to guide students in the ethical use of AI tools (Miao et al., 2023; UNESCO, 2023). In Tanzania, for example, AI guidelines remain absent in most HEIs, yet students continue to use AI for academic purposes without formal guidance (Miao et al., 2023; UNESCO, 2022, 2023). Similar trends are evident in other African countries, where AI adoption among students is significant but largely unregulated. In Ghana, 69.9% of students report a positive attitude toward AI in education, though concerns persist regarding privacy and the impact of AI on traditional educational dynamics (Ofosu-Ampong et al., 2023). Likewise, in Kenya, AI adoption among students is reported at 63% (Wang'ang'a, 2024). The absence of institutional policies presents several challenges, including academic integrity issues such as plagiarism, the generation of biased or inaccurate content, and excessive student reliance on AI, which could hinder critical academic skill development (Ofosu-Ampong et al., 2023; Saavedra et al., 2024).

The rapid adoption of AI tools in education has introduced transformative opportunities for academic activities (Cao et al., 2023; Rabbianty et al., 2023; Salas-Pilco & Yang, 2022; Sasikumar & Sunil, 2023; Yusuf et al., 2024). The absence of structured guidance has raised concerns about the ethical and effective use of AI in academic settings (Almassaad et al., 2024; Ofosu-Ampong, K Acheampong et al., 2023; Wang'ang'a, 2024). However, as in many other HEIs, the Tanzania Institute of Accountancy (TIA) lacks formal policies or guidelines to regulate AI usage among students. Despite increasing reliance on AI for academic purposes such as completing assignments, research writing, and enhancing learning experiences (Ofosu-Ampong et al., 2023; Wang'ang'a, 2024), various reports lack findings on the extent and frequency of AI tool usage among undergraduate students at higher learning institutions. This gap in understanding poses challenges in ensuring that AI is integrated in a way that promotes academic integrity and skill development while mitigating potential misuse. To address these challenges, it is essential to investigate the patterns and frequency of AI tool

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utilization among undergraduate students. This study investigated AI Utilization among Tanzania Higher Learning Students by examining trends, predictors, and academic applications.

METHODOLOGY

This study employs a cross-sectional survey design to examine the extent, frequency, and determinants of AI tool utilization among undergraduate students at the Tanzania Institute of Accountancy (TIA), Mbeya Campus. A cross-sectional approach is appropriate as it allows for a comprehensive analysis of AI usage at a specific point in time. This design helps in identifying trends, behaviours, and influencing factors regarding AI adoption without requiring long-term observation. The study sample size consists of 238 out of 603 respondents who are third-year undergraduate students from various programs, including Accounting (BA), Procurement and Logistics Management (BPLM), Public Sector Accounting and Finance (BPSAF), and Marketing and Public Relations (BMPR). These students were selected because they are in their final year of study and actively engaged in academic writing and research, making them an ideal group for assessing AI adoption in higher education. A stratified random sampling technique was employed to ensure fair representation from each program. The sample size was determined using Cochran's formula, ensuring statistical accuracy with a 95% confidence level and a 5% margin of error. A structured questionnaire was used as the primary data collection instrument. The questionnaire contained sections on demographic details (age, gender, and academic program), types of AI tools used (ChatGPT, Grammarly, QuillBot, citation generators, etc.), and the frequency and purpose of AI usage in academic activities such as writing assignments, idea generation, proofreading, research, and citation. Additionally, the questionnaire assessed students' perceptions of AI tools, including their usefulness, ease of use, and the factors influencing their adoption, such as familiarity, accessibility, academic engagement, peer influence, and training.

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize AI usage trends and student perceptions. Inferential statistics were applied to test relationships and differences in AI utilization. A chi-square test was conducted to examine associations between categorical variables, such as program of study and AI usage patterns. To identify significant differences in AI tool usage across academic programs, an Analysis of Variance (ANOVA) was performed. Furthermore, a logistic regression analysis assessed key determinants of AI adoption, including familiarity, accessibility, academic engagement, and peer influence.

Before conducting statistical analyses, tests for normality and homogeneity were performed to validate the assumptions. The Kolmogorov–Smirnov test confirmed that the frequency of AI tool usage followed a normal distribution ($p = 0.213$), allowing for the use of parametric statistical tests. Additionally, Levene's test for homogeneity of variance indicated significant variance differences among groups ($p = 0.000$), which was accounted for in the statistical analysis.

Ethical considerations were strictly observed throughout the study. Ethical approval was obtained before data collection to ensure compliance with research standards. Participation in the study was entirely voluntary, and all respondents provided informed consent before completing the questionnaire. To protect participants' rights, confidentiality and anonymity were maintained, and no personally identifiable information was collected.

FINDINGS AND DISCUSSION

Respondent Profile

Table 1 shows the results from the current study reported 139 (58.4%) male students and 99 (41.6%) female students. A Distribution of students among different programs indicates Procurement and Logistics program has the largest representation of 118 (49.6%) students,

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then Accountancy at 56 (23.5%) students, followed by Marketing and Public Relations at 45 (18.9%) students, then Public Sector Accounting at 19 (8.0%) students.

Table I: Respondents Data: Demographics Information

Frequencies	Percentage	
Sex		
Male	139	58.4
Female	99	41.6
Program of study		
Accountancy	56	23.5
Public Sector Accounting	19	8.0
Procurement and Logistics	118	49.6
Marketing and Public Relations	45	18.9

Extent of AI Tool Utilization by Students

The findings indicate that AI tools have become integral to academic practices among university students, with ChatGPT emerging as the most widely used tool (85.7%). This significant adoption aligns with recent studies that emphasize how AI chatbots support students in content generation, problem-solving, and academic writing (Rosa et al., 2024). The high utilization of ChatGPT may be attributed to its accessibility and versatility in assisting with research, summarization, and comprehension of complex topics (Almeqdadi & Shadifat, 2024). The trend also mirrors findings from a study by (Vrana, 2024), which highlights that ease of access and familiarity significantly predict AI tool adoption.

In contrast, Grammarly is used by only 11.8% of students, suggesting that while grammar-checking tools are beneficial, they may not be perceived as essential compared to AI-powered chatbots. Prior research suggests that students often rely on AI for more comprehensive academic support rather than isolated grammar corrections (Aslanyan-rad, 2024). The usage of QuillBot (41.1%) suggests that paraphrasing tools are moderately popular, likely due to their role in aiding students in rewriting and improving clarity in academic writing (Ovilia et al., 2022). However, its usage remains lower than ChatGPT, possibly because AI chatbots now incorporate paraphrasing features.

Citation generators appear to be the least used AI tool, with only 2.9% of students relying on them. This low adoption aligns with previous literature, which suggests that students often prefer manually formatting citations or using built-in reference management features in academic software (Nilashi et al., 2016; Severin & Low, 2019). A lack of awareness or perceived difficulty in using citation generators also contributes to this trend (Severin & Low, 2019).

Table II: AI Tools Available for Academic

AI tool	Frequency (n)	Percentage (%)
Grammarly		
Yes	28	11.8
No	210	88.2
ChatGPT		
Yes	204	85.7
No	34	14.3
Quill Bot		
Yes	12	41.1
No	226	58.9
Citation Generator		
Yes	7	2.9
No	231	97.1

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Purpose of AI Usage by Students

The findings from the table suggest that AI tools are primarily utilized by students for writing assignments (47.5%) and idea generation (38.2%), indicating the crucial role of AI in content development. However, a smaller percentage of students use AI for proofreading (13.9%), research and information gathering (23.1%), or citation and referencing (13.4%). These findings align with current research on AI use in academic writing. Despite the widespread use of AI in writing, students demonstrate lower reliance on AI for proofreading and citation. This trend is consistent with research indicating that students remain cautious about AI-generated content due to concerns over accuracy, ethical considerations, and dependency on automation Wu et al., (2024). Alharbi (2023) reviewed AI-powered writing tools and found that while students benefit from automated writing evaluation and feedback, educators emphasize the need for human oversight to maintain academic integrity. Additionally, a study by Hsu (2023) emphasized the importance of balancing AI assistance with critical thinking and rigorous scholarly standards.

The limited use of AI for research and citation can be attributed to concerns about reliability and the accuracy of AI-generated references. Research by Saqib and Zia (2024) on AI-generated academic content found that AI citation tools often struggle with verification and originality, leading to potential misinformation. AI tools are widely adopted for writing and idea generation, but their use in proofreading, research, and citation remains limited due to concerns about accuracy and academic integrity. The findings emphasize the need for a balanced approach, integrating AI into education while promoting critical thinking and ethical considerations.

Table III: Nature Activities AI Usage by Students

Nature of Activities AI use	Frequency (n)	Percentage (%)
Writing Assignment		
Yes	113	47.5
No	125	52.5
Generating Ideas		
Yes	91	38.2
No	147	61.8
Proofreading and editing		
Yes	33	13.9
No	205	86.1
Research and Information Gathering		
Yes	55	23.1
No	183	76.9
Reference and Citation		
Yes	32	13.4
No	206	86.6

Frequency of AI Usage for Academic Purposes

The findings from Table IV highlight key trends in AI tool usage among students, particularly in terms of time spent, assignment completion, perceived usefulness, and ease of use. These results align with the current literature on AI adoption in education.

The majority of participants reported using AI tools for less than an hour (88.2%), while only a small percentage (8.0%) used them for 1-3 hours, and even fewer (2.5%) engaged for 4-6 hours. This limited usage suggests that students primarily rely on AI tools for quick assistance rather than prolonged engagement. A study by (Yang, 2024) found that while AI tools, such as ChatGPT, are widely used by students, only about half of the students utilize them regularly, often for short bursts to support academic tasks rather than for deep, sustained work.

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Most students use AI tools for some assignments (54.2%), with smaller groups relying on them for assignments (15.5%) and most assignments (14.3%). This aligns with findings by (Krecar et al., 2024), which revealed that students often turn to AI tools selectively, particularly for writing assignments, grammar checks, and idea generation, rather than using them comprehensively across all coursework. Additionally, Angga et al. (2024) found that AI-based paraphrasing tools help students efficiently complete assignments while maintaining content quality.

A significant portion of students find AI tools either useful (49.2%) or very useful (30.3%), while a smaller percentage are neutral (15.5%) or consider them not useful (5.0%). Klarin et al. (2024) reported similar findings, noting that students facing challenges in cognitive tasks perceive AI as highly beneficial in supporting assignment completion. However, concerns remain about AI-generated inaccuracies, as Yang (2024) found that 71.4% of students had encountered errors in AI outputs.

Most participants find AI tools easy (46.6%) or very easy (26.1%), indicating user-friendly interfaces and accessibility. However, some students remain neutral (19.7%), and a small percentage (7.6%) find them difficult to use. Buyakova et al. (2024) reported that students who have prior experience with AI tools are more likely to find them user-friendly and beneficial. Meanwhile, Khoso et al. (2023) emphasized that excessive AI tool use could negatively impact student engagement and academic performance (Khoso et al., 2023). AI tools are widely perceived as useful and easy to use, students engage with them selectively and for short durations. The literature underscores both the benefits and challenges of AI in education, emphasizing the need for responsible use, clear guidelines, and balanced integration into academic practices.

Table IV: Frequency of AI Usage for Academic Purpose

Variable	Frequency (n)	Percentage (%)
Time Spending	3	1.3
Less than 1 hour	210	88.2
1-3 hours	19	8.0
4- 6 hours	6	2.5
None		
Number of Assignment		
Assignment	37	15.5
Most Assignment	34	14.3
Some Assignment	129	54.2
Rarely	25	10.5
None	13	5.5
Usefulness		
Very useful	72	30.3
Useful	117	49.2
Neutral	37	15.5
Not useful	12	5.0
Easiness		
Very Easy	62	26.1
Easy	111	46.6
Neutral	47	19.7
Difficult	18	7.6

Factors Influencing AI Utilization by Undergraduate Students

The logistic regression analysis reveals several key factors influencing AI utilization, including familiarity, accessibility, academic engagement, and peer influence, with training showing no significant association. These findings align with recent research on AI adoption in higher

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education. The study found that individuals familiar with AI had significantly higher odds of using it (aOR = 1.75, p = 0.005). This is consistent with findings from Sova et al. (2024), who reported that AI familiarity and awareness positively influenced students' perceived usefulness and increased adoption rates. Similarly, Nazri et al. (2023) identified learning outcomes and accessibility as primary factors driving AI adoption in education, emphasizing that students with higher AI awareness are more likely to integrate it into their academic activities. The logistic regression showed that accessibility was a major enabler, with students who found AI tools easily accessible being 1.98 times more likely to use them (p = 0.001). Huang et al. (2024) also reported that accessibility plays a critical role in AI adoption, as students with greater access to AI tools and university-provided resources were more inclined to utilize AI for academic purposes (Huang et al., 2024). Additionally, (Gjermeni, 2024) found that technological proficiency and access to AI training significantly enhance adoption likelihood, reinforcing the importance of providing students with easy access to AI tools.

Engagement in academic tasks was another significant predictor (aOR = 1.60, p = 0.008). This finding aligns with research by Rodzi et al. (2023), which indicated that students primarily use AI for coursework, assignments, and research tasks. AI integration in education has been shown to enhance academic productivity, with AI-powered tools assisting in summarization, paraphrasing, and research efficiency (Angga et al., 2024).

Peer influence emerged as the most significant factor, with students influenced by their peers being 2.30 times more likely to adopt AI (p < 0.001). (Soodan et al., 2024) Similarly, social networks and peer recommendations play a vital role in AI adoption, particularly in academic settings. Peer-led learning environments and collaborative AI use have also been identified as enablers in higher education settings (Khlaif et al., 2024).

Unlike other factors, training was not significantly associated with AI utilization (aOR = 1.02, p = 0.96). This suggests that while AI familiarity and accessibility drive adoption, formal training programs may not directly impact AI usage patterns. These results contrast with findings from Gjermeni (2024), who noted that AI training sessions positively influenced faculty adoption of AI tools. However, this discrepancy may stem from differences in target populations, as faculty members might require structured training, whereas students rely more on peer learning and self-exploration.

Table V: Factors Influencing AI Utilization by Undergraduate Students

Variable	Bivariate analysis			Multivariable Analysis		
	COR	**Std.Error**	**P-value**	aOR	Std.Error	**P-value**
Program (Ref=Accounting)						
Public Sector Accounting	0.99(0.41-2.41)	0.45	0.98	1.01(0.38-2.71)	0.50	0.97
Procurement and Logistics	0.50(0.16-1.54)	0.57	0.23	0.31(0.093-1.035)	0.61	0.057
Marketing and Public relation	2.16(0.94-4.98)	0.43	0.07	1.61(0.64-4.07)	0.47	0.31
Familiarity (Ref=No)						
Yes	1.89(1.35-2.65)	0.15	0.002	1.75(1.22-2.51)	0.18	0.005
Ease of Access (Ref=No)						
Yes	2.14(1.50-3.05)	0.12	<0.001	1.98(1.40-2.85)	0.14	0.001
Academic Tasks (Ref=No)						
Yes	1.72(1.18-2.50)	0.17	0.004	1.60(1.10-2.38)	0.19	0.008
Peer Influence (Ref=No)						

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Variable	Bivariate analysis			Multivariable Analysis		
	COR	**Std.Error**	**P-value**	aOR	Std.Error	**P-value**
Yes	2.45(1.73-3.50)	0.13	<0.001	2.30(1.58-3.35)	0.15	<0.001
Training (Ref=No)						
Yes	0.60(0.32-1.13)	0.32	0.11	1.02(0.48-2.16)	0.38	0.96

**Statistically significant at the 0.05 level*

Test for Normality and Homogeneity of the Data

The normality and homogeneity of variance tests are crucial assumptions for conducting an ANOVA test. In this study, normality was assessed using the Kolmogorov–Smirnov test, which indicated that the frequency of AI tool usage followed a normal distribution ($p = 0.213$). Additionally, Levene's test for homogeneity of variance was performed, showing a significant result ($p = 0.000$), suggesting variance was not equal across groups. The Kolmogorov–Smirnov test confirmed the normality of the data, indicating that AI tool usage follows a normal distribution, which is a key requirement for parametric statistical tests. Similar findings have been reported in recent literature. For example, Setyaedhi (2020) validated the normality of statistical data in an education setting, ensuring appropriate parametric tests were applied. Additionally, Nasrum (2020) highlighted that normality testing remains a fundamental prerequisite for determining the reliability of statistical results.

Table VI: Test of Normality

Variable	Statistic	df	p-value
Frequency usage	0.542	238	0.213
Levene's test for homogeneity of variance			
Levene statistic	df1	df2	P-value
9.42	3	234	0.000

Significant Differences in AI Tool Usage Frequency Across the Different Academic Programs.

The ANOVA results show a significant difference between the groups. The sum of squares between groups is 34.071, with 3 degrees of freedom and a mean square of 11.357, yielding an F-value of 2.914 and a P-value of 0.035. Since the P-value is less than 0.05, we reject the null hypothesis, indicating significant differences in the group means. The within-group sum of squares is 911.866 with 234 degrees of freedom and a mean square of 3.897, while the total sum of squares is 945.937 with 237 degrees of freedom. Studies have consistently shown that students from different academic programs exhibit distinct attitudes and usage patterns toward AI tools. A study by Fošner (2024) found that AI adoption varied significantly by academic discipline, with students in STEM-related fields reporting higher engagement compared to those in social sciences and humanities. This variation is attributed to the technical nature of STEM courses, which often incorporate AI-driven data analysis, programming, and machine learning applications. Similarly, Köhler and Hartig (2024) found significant differences in AI tool usage between academic fields, with law and economics students reporting the highest levels of engagement. Their study revealed that students in these disciplines frequently use AI for document analysis, legal research, and financial modelling, whereas students in humanities and education programs demonstrated more cautious adoption.

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Table VII: AI Tool Usage Frequency Across the Different Academic Programs

Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	34.071	3	11.357	2.914	0.035*
Within groups	911.866	234	3.897		
Total	945.937	237			

**Statistically significant at the 0.05 level*

Post Hoc Comparison of Study Program on Usage of AI

Multiple Comparison tests were conducted after the rejection of the null hypothesis by applying the F-test in ANOVA. Tukey's HSD was utilized to determine multiple comparisons test. The results, as shown in Table VIII reveal that the post hoc Tukey HSD test determined two significant differences. First, the mean difference between Accounting (A) and Public Accounting & Finance (F) is -1.421 and it is significant ($P < 0.05$). Second, there was a significant difference between Public Accounting & Finance (F) and Procurement and Logistics (P), with a mean difference of 1.396 ($P < 0.05$). These findings indicate significant variability in the means of these pairs with no significant differences between the other pairs. These results indicate that students from different academic disciplines exhibit varying degrees of AI engagement, aligning with existing research on discipline-specific AI adoption. Academic disciplines significantly shape students' attitudes and behaviours toward AI adoption. Fošner (2024); Khoso et al. (2023) found that students' perspectives on AI integration in education varied across fields of study, with business-related disciplines showing a higher acceptance of AI tools for data analysis and financial modelling. This aligns with the present findings, where Accounting and finance students showed significantly different AI usage patterns compared to their counterparts in Accounting, Procurement & Logistics. Tukey's HSD test is widely regarded as a robust multiple comparison method that controls for Type I errors when conducting post hoc tests after ANOVA. Research by Nanda et al. (2021) emphasized that Tukey's test effectively minimizes false positives in multiple comparisons, making it a reliable tool for assessing significant differences in educational research. This reinforces the credibility of the observed significant mean differences between certain academic programs in AI tool usage.

Table VIII: Post Hoc Comparison of the Study Program on the Usage of AI

Pairs (I, J)	Mean Difference	95% Confidence interval for Mean	
		Lower Bound	Upper Bound
A, F	-1.421*	-2.78	-0.06
A, P	-0.025	-0.85	0.80
A, M	-0.244	-1.27	0.78
F, P	1.396*	0.13	2.66
F, M	1.177	-0.22	2.57
P, M	-0.219	-1.11	0.68

**The mean difference is significant at the 0.05 level A=Accounting, F=Public Accounting & Finance, P=Procurement and Logistic, and M=Marketing & Public relations.*

CONCLUSION AND RECOMMENDATION

The findings of this study underscore the increasing integration of AI tools in academic practices among undergraduate students at the Tanzania Institute of Accountancy (TIA), particularly in areas such as research writing, assignment completion, and idea generation. ChatGPT emerged as the most widely adopted AI tool due to its accessibility and versatile functionality, while tools like Grammarly and citation generators exhibited relatively lower adoption rates. The study identified key determinants influencing AI tool utilization, including familiarity, accessibility, academic engagement, and peer influence, with training showing no significant effect on adoption.

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Additionally, the study revealed that AI adoption patterns varied across academic programs, with students in Accounting & Finance demonstrating significantly different usage behaviours than their peers in other disciplines. While AI tools enhance academic efficiency and knowledge acquisition, the absence of institutional policies and structured guidelines raises concerns about academic integrity, potential misuse, and over-reliance on automated assistance. These findings highlight the urgent need for higher learning institutions to establish clear policies, promote AI literacy, and encourage responsible AI usage to balance technological benefits with critical academic skills development.

Recommendations

Institutional Policy Development: Higher learning institutions, including TIA, should formulate clear policies and ethical guidelines governing AI usage in academic activities. These policies should outline acceptable practices, address academic integrity concerns, and guide responsible AI-assisted writing.

Integration of AI Literacy Programs: Universities should integrate AI literacy into their curriculum to equip students with the necessary skills to utilize AI tools effectively and ethically. This could be achieved through dedicated AI training workshops, inclusion in research methodology courses, or standalone AI ethics modules.

Enhanced Faculty Engagement: Faculty members should be trained on AI applications in academia to provide informed guidance to students. Encouraging faculty-student discussions on AI's strengths, limitations, and ethical concerns can promote critical thinking and responsible AI adoption.

Encouraging Responsible AI Usage: Institutions should emphasize a balanced approach to AI utilization, encouraging students to use AI as a complementary tool rather than a substitute for academic rigour. This could involve fostering a culture of critical engagement where AI outputs are scrutinized and validated before academic submission.

Provision of Institutional AI Resources: Universities should invest in licensed AI tools that are aligned with academic integrity standards. Providing institutional access to AI-driven research tools can enhance academic productivity while ensuring compliance with ethical guidelines.

Further Research on AI in Higher Education: Future studies should explore the long-term implications of AI adoption on students' academic performance, critical thinking skills, and overall learning outcomes. Additionally, comparative studies across multiple institutions can provide broader insights into AI's role in higher education.

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