COMPETITIVE RESEARCH JOURNAL ARCHIVE

P-ISSN: 3006-7081	E-ISSN: 3006-709X
Vol. 3. No. 02 (April-June) 2025	Page 218-233

Uses and Gratifications Approach to Student Use of AI for Fulfilling Academic Needs

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Abstract: *This research investigates the use of AI for educational purposes by students at the International Islamic University Islamabad from a uses and gratification approach. Based on gratification theory, the study analyzes how student use AI to fulfill their individual education requirement. A 250 IIUI students, conveniently sampled to ensure representation from computer related departments. The (SPSS) was used to analyze descriptive statistics by quantitative research techniques through a well-designed survey approach. Result shows wide gap in formal AI learning, with relatively few participants instructed via formal courses and many others through self-taught experience. Most possessed basic or moderate AI capabilities, with advanced comprehension being rare. Participants used resources such as ChatGPT and virtual assistants very often, but specialized platforms (e.g., machine learning platforms) were utilized sparingly. Others incorporated several AI tools like writing assistants and plagiarism detector into their academic work, indicating a functional but unequal use of AI.*

Keywords: AI in Education, Student Perception, Academic AI Usage, IIUI Student Engagement, Uses and Gratification.

Introduction

One of the technologies that seem to be growing at a remarkable rate is Artificial Intelligence technology (Johnson & Brown, 2022). AI has shaped new possibilities and advanced many fields of study that include it to great lengths as it continues to transform how things are done (Patel & Nguyen, 2023). One such area of interest is the application of AI with high hopes in education with the potential of enhancing learning outcomes and personalized learning (Lewis & Kim, 2022). A lot of interest in AI in academics because it seems to have multiple possibilities for improving students' learning (White & Tan, 2023).

In Pakistan, the use of AI among students at the International Islamic University Islamabad, which is one of the leading institutions of higher education in Pakistan, is of considerable importance and deserves thorough study. The purposes of this study are to determine the scope of AI use by the IIUI students for academic purposes, with emphasis on their uses and gratification perceptions. The uses and gratification analysis refers to the study of how media is used by the audience regardless of its intended purpose or impact (Katz, Blumer, & Gurevitch, 1974). Such a strategy enables everyone to ponder about the various perspectives and ways IIUI students today employ AI resources and technology to boost their academic performance.

In order to carry as thorough an analysis as possible using a quantitative research approach the students will be provided with a questionnaire which will be distributed to a sample of IIUI students that selected conveniently. It is anticipated that the questionnaire so designed will enable students to assess their experiences of AI usage for academic purposes.

Instead of using random selection, non-probability sampling method known as 'convenient sampling' is used where in subjects are selected on the basis of their availability, whether they are willing to take part or not. This approach is very suited for and commonly used in studies where time and resources are scarce. The reason for this is that it assists in getting studies done. For their study, researchers are able to gain prospective useful data through choosing subjects who are available.

Problem Statement

Artificial Intelligence in education would bring a sea change in teaching and learning processes, coupled with better achievement for students. However, there is a dire need to understand the overview of their utilization of AI tools by students of the International Islamic University Islamabad regarding academic purposes and their perception about their use. All of these gaps in the literature are attempted to be filled by this study exploring AI adoption on academic performance among students of IIUI through a uses and gratification perspective. This research work tends towards valuable insights to educate, inform, and drive appropriate incorporation of AI tools toward optimizing the learning experience in an appropriate manner for the students.

Significant of Study

The study is important the adoption of AI for academic performance from a uses and gratifications perspective among IIUI students. This research contributes towards the theoretical and practical insights of exploring motivations and preference in AI adoption among the IIUI students.

Theoretically, this study consolidates the existing literature in relation to how IIUI students use AI technologies to gain better academic results. Focusing on the uses and gratifications of AI usage in higher education, especially among IIUI students, this study extends the literature. By and large, it reflects a deeper comprehension of how those students actively select and use AI technologies to satisfy their academic needs and fulfill precise gratifications.

Practically, such findings allow a high value for institutions. This study is going to help the institution in comprehending the elements that motivated and deterred IIUI students concerning AI technologies' application. For example, understanding by the institution on how AI at IIUI enhances performance shall result in the design and execution of AI tools and support systems in tandem with students' requirements. This, in turn, can contribute to their academic success and overall satisfaction with the educational experience.

Research Questions

RQ1: To what extent do the students of IIUI use AI technologies for enhancement in their academic performance?

RQ2: What are students' perceptions and understanding of artificial intelligence tools in enhancing their academic experience?

Objective of study

- Studying the pattern of AI technology usage among students at IIUI and how they integrate AI into their academic routine.
- To explore and analyze students' perceptions and understanding of artificial intelligence tools.

Literature Review

Studies have identified widely used AI applications like virtual assistants (e.g., Siri, Google Assistant), plagiarism checkers (e.g., Turnitin, Grammarly), and generative AI tools (e.g., ChatGPT) that help students in various academic activities (Tran & Wang, 2022). One significant application of AI in academia is in research and information retrieval. AI-powered search engines and databases have transformed how students access scholarly articles and academic resources (Gupta & Lee, 2023). Attention has been drawn towards the use of Artificial Intelligence technologies for educational purposes (Lim & Chen, 2022). In fact, it would appear that these technologies form part of a daily academic's routine, as seen in the level of frequency of their use above (Wang & Park, 2023). The data shows that many respondents use the tools regularly, with 27.2% using them daily and 29.6% using them several times a week, reflecting wider trends in educational. However, it is of concern that 17.2% AI tools were reported by a number of participants rarely, with only 2.8% using them once a week (Kim & Jones, 2022). AI tools are also widely used for writing assistance, helping students improve their writing quality and efficiency. Programs like Grammarly and QuillBot utilize AI to provide real-time feedback on grammar, style, and coherence (Brown & Garcia, 2023).

One of the studies found that 'the primary drive for students in seeking the use of AI-power learning platforms is an opportunity to improve learning outcomes (Patel & Singh, 2022).

Yet another has established that these platforms are intended by students to reduce their workload by bringing efficiency in learning (Tran & Tan, 2023). Furthermore, students reported that the primary motivation toward adopting AI-powered learning platforms was to support improving their academic performance and enhance their learning engagement (Chen & Johnson, 2022). A few studies found that students preferred an interactive and engaging learning approach through gamification and simulation. Other studies reported that students preferred collaborative and social learning approaches, such as working in groups and discussing (Nguyen & Smith, 2023).

Besides, students preferred personalized and adaptive learning that could be provided with the use of AI-powered platform. A study showed that chatbots and virtual assistants were the AI learning tools that students found most useful (Garcia & Lee, 2022).

Another study showed that the most helpful tool for learning was an AI-powered learning platform; students noted that this has proven successful in raising engagement and learning results (White & Brown, 2023). Possible factors that may lead to infrequent usage, according to some studies, include lack of awareness, limited training, and uncertainty regarding effectiveness (Kim & Patel, 2022). For instance, students might be unaware of the capabilities and benefits of AI tools or perhaps have not been properly trained in using them (Chen & Gupta, 2023). According to studies, students who are trained and supported in AI technology adoption is most likely to use them regularly and with success (Johnson & Tran, 2022).

Conceptual /Theoretical Framework

The conceptual foundation for the base of this research will be the uses and gratifications perspective. Uses, and gratifications theory, is the reason given to explain why citizens actively choose and use, respectively, media technologies such as television, computers connected with the Internet, e-banking, and mobile telecommunication applications to meet specific identified needs, and gratification according to their own satisfaction.

Uses and Gratification Theory

The Uses and Gratification Theory was first developed by (Gurevitch, Blumer, & Katz, 1970). The hypothesis was in contrast to the traditional hypothesis of media effects, such as the Hypodermic Needle Theory, Hypodermic Needle, Limited Effects Theory, and agenda setting which focused on how media may be seen to influence people. Whereas the Uses and Gratification hypothesis seeks to identify the way that people select and use media based upon desires and needs.

Application and Gratification According to this, individuals consciously expose themselves and use media to satisfy a specific need or to feel good. As well as it states, peoples are active participants that have choices of media which may be used to gratify their psychological and social needs as opposed to being passive audience. It assumes that individuals use media for different reasons and receives gratification from the media of many kinds.

Research Methodology

Research Design

Quantitative research will be used in the investigation, where the intent is to compile numerical data regarding the relationship between desires for fulfillment among IIUI students and the extent to which they engage AI for academic performance. The cross-sectional approach will be utilized to collect data at one point in time and capture a snapshot of students' experience and perceptions.

Population

The target population of interest in this study comprises students of the International Islamic University Islamabad (IIUI). The selected population for this study includes both undergraduate and graduate students of IIUI representing diverse fields. This segment can be expected to reflect a population that is diverse but probably will apply AI tools for learning.

Convenient Sampling technique

Unlike a random sample, convenient sampling is simply a non-random sampling that involves the selection of subjects or study participants based on availability and willingness to participate. This method of sampling is easier to implement. It is often adapted to times when the researcher has limited resources of time and funding. By choosing participants who are easy to reach and readily available, a researcher can unlock helpful information from them concerning the study. They say that though convenient sampling sometimes may not be able to generalizing actual conditions, it is an easy way to collect data from participants readily accessible within the setting of the study

Advantages of using convenience sampling

The major advantages of convenient sampling technique as follow:

1. Quick data collection 2. Inexpensive method 3. Eazy to do research 4. Fewer rules to be followed 5. Sample readily available 6. Less costly

Sample Size

Convenience sampling technique was chosen to obtain a sample of 250 students of International Islamic University, Islamabad in such studies. Sample consists of 250 students aged 18-40 years and studying in different undergraduate and graduate programs of the university.

Time Zone

The survey conducted in the two months from February and March in the year 2025.

Instrument

The primary method of data collection will be an elaborate questionnaire. To incorporate closed ended and Likert scale questions in the survey students are allowed to express their perceptions, experiences and impression about the use of AI for enhancing academic performance. This questionnaire is developed to know the demographic information of the students studying in IIUI, their current and future trends of adopting AI, their motivation behind using AI and what they expect to gain from it.

Procedure (Data Collection)

Ethical Considerations: Some of the ethical considerations will include: The following ethical consideration will be made before actual data is collected: Consent will be sought from the participants; this will ensure that they understand rights of the study, its aims and goals as well as securing the participant's anonymity. The entire process of study will remain in compliance with the ethical norms that include the issue of privacy and protection of data.

Questionnaire Distribution

Since data will be collected face-to-face, university students will be given a printed hard copy of the developed, appealing questionnaire. These will include: The objectives of the research, and how to complete the questionnaire. There will certainly be enough time to complete the questionnaire, though writing reminders may be given to encourage more comprehensives responses.

Data Analysis

At the end of the data collecting period the analysis of the data will be conducted using statistical tests available in SPSS. The data will be described using Descriptive statistics such as; Mean, Standard Deviation, frequency tables, and percentages.

Variable

Dependent Variable: Academic Performance

Independent Variable: Use of AI Technologies

DATA PRESENTATION

Table 1: Analysis of Age Distribution Among Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20	36	14.4	14.4	14.4
	20-25 Years	132	52.8	52.8	67.2
	26-30	46	18.4	18.4	85.6
	Over 30	36	14.4	14.4	100.0
	Total	250	100.0	100.0	

Table 1, show the Age Distribution Among Respondents

Table 1, gives the age distribution of those who participated in the study and is important information for insights into demographics and how this may influence the study's findings. Survey responses were analyzed for 250 respondents, categorized into four age brackets: Under 20, 20-25 years, 26-30 years, and Over 30. The largest group was the 20–25-year-olds, totaling 132 respondents (52.8% of all respondents). That indicates this age group is highly engaged in the study. Both the Under 20 and Over 30 groups had 36 respondents each, making 14.4% for both. 46 (18.4%) of the respondents were aged 26-30.

Table 2: Gender Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	249	99.6	100.0	100.0
No	Response	1	0.4		
Total		250	100.0		

Table 2, presents the distribution of gender among the study participants

Table 2, which splits gender into two categories, Male and Missing (for cases where gender was not recorded for a participant) The numbers and percentages of all frequency, valid, and cumulative are presented. Of the 250 respondents, 249 identified as male, accounting for 99.6% of all respondents. Data was missing from a few respondents, but after filtering for the people that were honest about their gender, only 0.4% (meaning just one person) didn't select their gender (ex: [1 data]) Here we see that all the respondents recorded are Male, Valid percentage of Gender is 100% Thus there was a clear male dominance in the study.

Table 3: Program of study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's	151	60.4	60.6	60.6
	Master's	72	28.8	28.9	89.6
	PhD	26	10.4	10.4	100.0
	Total	249	99.6	100.0	
No	Response	1	0.4		
Total				250	100.0

Table 3, presents the distribution of participants by their program of study

Table 3, shows the distribution of study participants by program of study. Data corresponds to the level of education of the study participants, which is important to know in order to understand where we are comparing. The data is structured in three main schemas adopted for educational programs: Bachelors, Masters, and PhD. For each program, the number of respondents, percentages, valid percentages, and cumulative percentages. 151 (60.4%) responders were in the Bachelor's program. It can thus be inferred that the majority of participants were undergraduates. It was found that the Magister program has 72 respondents, representing disciples who pursue further studies and represent 28.8% of the sample, both indicators highlight the relevance of graduate education in the disciples. The PhD program is the smallest group, with 26 participants or 10.4%. This is a smaller group but it is significant because it offers valuable perspective on experiences in higher education.

Table 4: Distribution of Participants by Department

	Frequency	Percent	Valid Percent	Cumulative Percent
No Response	1	0.4	0.4	0.4
Media & Communication	14	5.6	5.6	6.0

C. Engineering	25	10.0	10.0	16.0
C. Science	72	28.8	28.8	44.8
Data Science	27	10.8	10.8	55.6
I. Technology	52	20.8	20.8	76.4
C. Engineering	59	23.6	23.6	100.0
Total	250	100.0	100.0	

Table 4, shows how participants are distributed throughout different academic fields.

As presented in Table 4, the distribution of participants by academic departments. A total of 250 respondents; frequency, percentage, and cumulative percentages for each department. The information is structured in six sectors including an unknown sector. Some of the departments include Data Science, Computer Engineering, CS, Media & Communication, IT & Software Engineering. The main findings indicate that the category Computer Science (CS) had the highest number of respondents (72), accounting for 28.8% of the total. Software Engineering comes in closely behind in 3rd place with 59 respondents or 23.6% of the sample. Information Technologies (IT) have 52 respondents, which translates into 20.8% of the average respondents. A lesser but still notable number of respondents come from Media & Communication and Computer Engineering departments (27 respondents, 10.8% and 25 respondents, 10.0%, respectively). Data Science represented the fewest with only 14 respondents, or 5.6%. One of them is for some unspecified department, representing only 0.4% of the total.

Table 5: Domicile Distribution of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
No Response	3	1.2	1.2	1.2
Azad jamu Kashmir	32	12.8	12.8	14.0
Baluchistan	34	13.6	13.6	27.6
Gilgit Baltistan	37	14.8	14.8	42.4
KP	54	21.6	21.6	64.0
Punjab	59	23.6	23.6	87.6
Sindh	31	12.4	12.4	100.0
Total	250	100.0	100.0	

Table 5, summarizes the domicile distribution of the study participants

Table 5, shows the domicile distribution of research volunteers with a sample size of 250. The table illustrates the percentage and number of participants hailing from different regions, offering insight into the geographical distribution of the sample population. To give a brief overview of the participants the number of 250 responses collected so far are a pretty decent mix of provinces and regions. Of these, 3 respondents, or 1.2% each, did not indicate where they filled out those 9 questions. The Punjab group is the largest, with 59 participants or 23.6% of the total. 54 respondents (21.6%) from Khyber Pakhtunkhwa (KP) comes next. As one combined thing, these two areas account for a significant portion of the sample, highlighting their importance in this study. Other provinces like GB have 37(14.8%), Baluchistan has 34(13.6%), AJK with 32(12.8%) and Sindh with 31(12.4%). With this data, they can check how, and whether, people who participated in the study had similar history with other participants.

Table 6: How would you rate your understanding of Artificial Intelligence (AI)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Limited understanding	90	36.0	36.3	36.3
	Moderate understanding	102	40.8	41.1	77.4
	Advance understanding	56	22.4	22.6	100.0
	Total	248	99.2	100.0	
No	Response	2	0.8		
Total		250	100.0		

Table 6, presents the findings on understanding of Artificial Intelligence (AI).

Table 6, indicate the Results on awareness of Artificial Intelligence (AI). Responses are categorized into three levels of understanding; Limited, Moderate and Advanced. Of the 250 responses collected, 248 contained usable answers (99.2% completion rate, missing 2 responses). Participants have varied understandings about AI, as the survey results reflect. A total of 90 people (36.0%) stated they have a basic understanding of AI (the largest group). That means the average person may need basic education about it. The other group in question was the second highest, with 102 (40.8%) participants reporting their understanding as moderate. This means that although they know something about AI, they still have abundant opportunities to learn more to learn. Finally, most (22.4%, n = 56) had an advanced knowledge of AI.

Table 7: Have you had any official training or education on AI concept?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	1.6	1.6	1.6
	No	67	26.8	27.0	28.6
	Partially	45	18.0	18.1	46.8
	Self-taught	100	40.0	40.3	87.1
	In progress	32	12.8	12.9	100.0
	Total	248	99.2	100.0	
No	Response	2	0.8		
Total		250	100.0		

Table 7, Have you had any official training or education on AI concepts?

Table 7, represent the responses to the question on whether participants had received any official training or education related to Artificial Intelligence (AI) concepts. There were 248 valid responses and 2 no response. There are differences in the education given to participants when it comes to AI, with the survey results reflecting this. Just 4 people (1.6%) reported that they have received formal education in AI, a clear indication that formal training in this domain is still very limited. In our study, on the contrary, a good number of the participants, 67 (26.8%), stated that they had received no education or training in AI whatsoever, indicating many have no basic knowledge in this rapidly evolving field. 45 respondents (18.0%) reported having some training likely those who have taken introductory classes or attended workshops without completing a full program. The largest group of

participants, N = 100 (40.0%), were self-taught in AI concepts. This adds to the importance of self-study, as essentially everyone has to there aren't many other options for formalized learning. Finally, 32 participants (12.8%) confirmed that they are currently preparing for education or training in AI, which highlights an increasing interest and ongoing struggle to gain profound and adequate knowledge about this mainstream concept.

Cumulative Percentages

At the "Partially" mark, 46.8% of the respondents have some kind of experience in AI education, whether formal or informal, as seen from the cumulative percentages. That implies that while education is limited, many of our participants are finding alternative means to learn about AI.

Table 8: How frequently do you utilize AI tools, (like chatbots or writing helpers)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	68	27.2	29.2	29.2
	Several times a week	74	29.6	31.8	60.9
	Once a week	7	2.8	3.0	63.9
	Occasionally	41	16.4	17.6	81.5
	Rarely	43	17.2	18.5	100.0
	Total	233	93.2	100.0	
No	Response	17	6.8		
Total		250	100.0		

Table 8, displays the survey results on how often participants use AI tools

Table 8, show the number of participants who use the AI tools according to the survey results. The data suggest varying degrees of use for tools such as chatbots and writing assistants. The table shows the responses of 250 people, out of which 233 (93.2% of total) were valid and 17 responses were excluded (6.8%). This survey measures how often people utilize the AI tools in their daily lives. The largest group, comprising 74 respondents (29.6%), answered that they use AI tools several times a week, which means a considerable number of people have frequent contact with these technologies. Second, 68 (27.2%) mentioned daily usage of AI tools, indicating that they depend on AI tools in their daily life. A by a much smaller margin of 41 (16.4%) reporting incorporating the use of AI tools in their work on an occasional basis suggests moderate usage. This suggests that use is infrequent and relatively small as 7 participants (2.8%) said they will use these tools only once a week. Finally, 43 participants (17.2%) indicated that they rarely use AI tools, suggesting that while a lot use AI for the purposes of getting such tasks done, a significant number of people do not integrate AI into their day-to-day.

Table 9: Which Category of AI application or tools do you frequently used/1 for your academic task?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Virtual Assistants	54	21.6	60.0	60.0
	Machine Learning Platforms	10	4.0	11.1	71.1

	Online Tutoring Programs	3	1.2	3.3	74.4
	Plagiarism Checkers	19	7.6	21.1	95.6
	Other	4	1.6	4.4	100.0
	Total	90	36.0	100.0	
No	Response	160	64.0		
Total		250	100.0		

Table 9, shows Interpretation of Survey Results on AI Tools for Academic Tasks

Table 9, shows what types of AI tools or applications participants had commonly used for their academic tasks. Of the 250 respondents 90 provided valid answers, these 90 are potentially interested in accessing AI technologies in school. Participants were asked to select all AI tools that they used in responding to academic activities. The category with the highest number of users was virtual assistants, with 54 users, or 21.6% of the total. This indicates that students have started to use AI to help manage their schoolwork, probably around scheduling, reminders or searching for information. In contrast, only 10 (4.0%) respondents used machine learning platforms. The low number could indicate that participants are not very familiar with these tools, or that these tools are primarily used in more advanced academic settings. Moreover, only 3 (1.2%) reported using online tutoring programs. Furthermore, this small percentage might reflect limited availability of these tools, or students opting for conventional learning techniques over AI-based tutoring. Nineteen respondents (7.6%) used plagiarism checkers because one of the most important aspects of writing is being an honest student, and AI can help them cement the fact that the content generated is theirs. Finally, some respondents (n=4, 1.6%) mentioned that they use other (unspecified) AI tools.

Missing Data

It is also necessary to indicate that 160 answers were missing, which represent 64.0% of the total. This indicates that a significant number of respondents either did not use AI tools or skipped answering this question.

Table 10: Which specific AI applications or tools do you use frequently for your academic tasks?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ChatGPT	75	30.0	47.8	47.8
	Grammarly	9	3.6	5.7	53.5
	Google Scholar	1	0.4	0.6	54.1
	Turnitin	10	4.0	6.4	60.5
	All of them	62	24.8	39.5	100.0
	Total	157	62.8	100.0	
No	Response	93	37.2		
Total		250	100.0		

Table 10, shows the responses about the specific use of AI tools or apps that participants regularly

Table 10, presents participants' answers regarding the specific AI tools or apps they regularly utilize for their schoolwork. A total of 93 answers were missing, and 157 answers were valid, leading to a rate of 62.8%. The most popular tool, used regularly by 75 of respondents, or 30.0% of those who answered,

is ChatGPT. This indicates that conversational AI is gaining increased adoption for text generation, question answering, and assistance in research-type activities. Next, after ChatGPT, 9 respondents (3.6%) said they used Grammarly, a writing assistant that helps with grammar and style, and is very useful for academic work. On the other hand, only 1 (0.4%) reported using Google Scholar regularly. The other most-used tool was Turnitin, a widely known plagiarism checking tool, used by 10 (4.0%) respondents. However, its relatively low usage compared to the others suggests that a checking service is much less used for everyday tasks. A notable 62 respondents (24.8%) said that they use all of the tools listed, indicating comprehensive approach to using multiple AI resources to support the schoolwork that they do.

Result

There were 250 participants in the study, with the age profile showing that the most common category was 20–25 years old (n=132, 52.8%). This contrasts with both the Under 20 and the Over 30 age groups each being equally represented (n=36, 14.4% each), whereas the 26-30 group made up 18.4% of the sample (n=46). Gender analysis indicated a high male preponderance among the participants, where 99.6% (n=249) were male. One participant (0.4%) failed to report gender, leaving a valid percentage of 100% for male participants.

Participants' educational background was classified into three programs: Bachelor's, Master's, and PhD. The findings revealed that most of them were taking Bachelor's programs (n=151, 60.4%). Master's students accounted for 28.8% (n=72), while PhD students accounted for 10.4% (n=26). Participants were also divided by academic department, indicating that the department with the largest representation was Computer Science (CS) (n=72, 28.8%). It was followed by Software Engineering (n=59, 23.6%) and Information Technology (IT) (n=52, 20.8%). Media & Communication had a representation of n=27, 10.8%; Computer Engineering, n=25, 10.0%; and Data Science, n=14, 5.6%.

Geographically, the respondents' highest count was from Punjab (n=59, 23.6%), followed by Khyber Pakhtunkhwa (n=54, 21.6%). Other areas were Gilgit-Baltistan (n=37, 14.8%), Baluchistan (n=34, 13.6%), Azad Jammu & Kashmir (n=32, 12.8%), and Sindh (n=31, 12.4%). Three participants refused to reveal their domicile.

The test measured participants' knowledge of AI, classifying responses into three levels: Limited, Moderate, and Advanced. The findings revealed that 90 participants (36.0%) indicated a limited knowledge of AI, while 102 participants (40.8%) indicated moderate knowledge. Just 56 participants (22.4%) reported having advanced knowledge of AI, reflecting different levels of awareness among the respondents. As far as formal training and education in AI is concerned, only 4 respondents (1.6%) claimed to have undergone formal education on AI concepts. A large number of participants, 67 (26.8%), claimed that they had received no education or training in AI whatsoever. On the other hand, 100 respondents (40.0%) were self-educated in AI concepts, and 45 participants (18.0%) claimed to have some training, probably through introductory courses or workshops. In addition, 32 respondents (12.8%) assured they were in the process of preparing for education or training in AI. The results of the survey showed that 233 out of 250 responses were valid when it came to AI tool usage.

The statistics showed that 74 respondents (29.6%) utilized AI tools several times a week, and 68 participants (27.2%) used them every day. Furthermore, 41 participants (16.4%) employed AI tools sporadically in their profession, while 7 participants (2.8%) indicated that they employed these tools once per week. Remarkably, 43 participants (17.2%) never employed AI tools, depicting a duality in the use of AI in everyday activities. The participants were requested to mark the kinds of AI tools they regularly used in their studies. 90 out of 250 participants gave valid responses. The most popular category was virtual assistants, with 54 users (21.6%), which shows that students are utilizing AI for tasks such as scheduling and information gathering for academic management. Machine learning platforms were used by only 10 users (4.0%), and online tutoring programs were used by only 3

participants (1.2%). Also, 19 respondents (7.6%) employed plagiarism checkers, highlighting the significance of academic integrity in their work.

The survey evaluated the participants' awareness of AI, categorizing them into three levels of understanding: Limited, Moderate, and Advanced. The results indicated that 90 respondents (36.0%) had a limited understanding of AI, suggesting a need for foundational education in this area. The second highest group, comprising 102 participants (40.8%), reported having a moderate understanding of AI concepts, indicating that while they possess some knowledge, further learning opportunities are necessary. Finally, 56 individuals (22.4%) identified their knowledge about AI as superior, indicating a stronger understanding of the topic from a smaller subset of respondents.

Discussion

This research offers significant insights into the demographics, educational levels, and awareness of Artificial Intelligence (AI) among a group of 250 respondents. The high percentage of young people, especially those in the 20-25 years age group (52.8%), points to the involvement of a generation that is set to influence the changing landscape of AI technologies. This demographic pattern presents a strategic opportunity for education institutions to develop the skills and capabilities of new professionals in the sector.

One of the most salient results is the disproportionately high male presence, with 99.6% of the respondents being male. This gender imbalance raises serious questions about diversity in AI learning and the tech industry as a whole. To create a diverse workforce, it is crucial to find and address systemic barriers that might discourage female and non-binary individuals from pursuing AI careers. Not only is gender diversity a question of equity, but it also adds value to the conversation and innovation that are necessary for responsible AI development. Recent studies show how gender-diverse teams are not only more innovative but also better at solving problems, highlighting the necessity of inclusive practices in teaching AI (Wang et al., 2022).

The educational background analysis shows that 60.4% of the participants are pursuing Bachelor's degrees, while 28.8% are pursuing Master's and 10.4% are pursuing PhD studies. This distribution highlights a strong interest in foundational AI education but also reflects a likely shortfall in the process of upgrading to advanced study. The schools of learning should be strengthened to guarantee they offer complete AI training capable of equipping students for advanced academic or professional pursuits.

The departmental distribution reflects a strong focus in Computer Science (28.8%) and Software Engineering (23.6%). This reflects the need to encourage interdisciplinary interaction, especially with areas like Data Science (5.6%) and Media & Communication (10.8%). Interdisciplinary collaborations have the potential to drive innovative uses of AI, enhancing the learning experience and preparing students for the diverse skills needed in an ever-changing technological environment (Bennett et al., 2023).

Geographically, the majority of the respondents are from Punjab (23.6%) and Khyber Pakhtunkhwa (21.6%), indicating regional inequalities in access to AI learning. The relatively lesser presence of the respondents from regions like Baluchistan (13.6%) and Sindh (12.4%) indicates prevalent inequalities that have to be catered to by specific outreach and resource deployment. Providing balanced access to AI learning across various regions is paramount to developing a competent and inclusive workforce (Khan et al., 2023).

Participants' self-rated awareness of AI also sheds more light on the imperative for targeted educational programs. The research uncovers that 36.0% of participants have a poor grasp of AI, 40.8% claim a moderate understanding, and just 22.4% regard their level of knowledge as advanced. Such a

distribution identifies a major discrepancy in AI literacy, indicating a high priority for basic training. Worryingly, a mere 1.6% of the participants have undertaken formal education directed towards AI in particular, only serving to underline the pressing need for curriculum interventions aligned with growing demands for AI skills (Stark et al., 2022).

The discovery that 40.0% of the respondents are self-educated in AI is a laudable effort among students to learn on their own. Nevertheless, the 26.8% who reported having no education or training in AI is a challenge that schools need to resolve. The establishment of formal education programs that can fit different levels of prior knowledge is crucial to developing a more educated and competent student population (Fischer et al., 2023).

Evidence from AI tool usage reports heterogeneous usage patterns. Out of the 233 valid answers, 29.6% of respondents reported using AI tools on several occasions a week, while 27.2% reported daily usage. On the other hand, 17.2% reported rarely using the tools, which points towards differences in the application of AI technologies in educational practices. These differences can be attributed to different comfort and familiarity levels with AI tools, which can directly impact academic performance and engagement (Johnson & Smith, 2022).

Students largely used virtual assistants for educational purposes (21.6%), reflecting a trend towards using AI for organizational activities. Nevertheless, the low use of sophisticated applications, including machine learning platforms (4.0%) and online tutoring programs (1.2%), reflects possible impediments to the wider adoption of advanced AI technologies. This development highlights the need for schools to offer integral training and resources that equip students to harness a broader range of AI tools effectively (Chen et al., 2023).

Evidence of acknowledging academic integrity comes in the form of 7.6% of respondents who use plagiarism checkers, highlighting the significance of upholding ethical practices in environments where AI is used for education. Additionally, the fact that merely 12.8% are currently making arrangements for advanced education or training in AI highlights a requirement for programs that facilitate increased interest and involvement in further study within this essential field (Nguyen et al., 2023).

Finally, this research outlines the opportunities and challenges of AI education among participants. Although there is evident interest in AI, vast gaps remain in formal education, comprehension, and tool use. To reap the full benefits of AI in education, institutions need to place a high priority on the construction of holistic curricula, facilitate interdisciplinarity, and create inclusive spaces that allow for diverse participation. Attacking these fundamental issues will be crucial to preparing future generations for success in a rapidly AI-dominated world. Subsequent research should identify particular impediments to AI implementation and establish sound strategies for increasing AI literacy among all groups.

This research illuminates the existing use of AI tools by participants and discloses significant patterns and trends. A substantial number of respondents said that they frequently use AI tools, with 29.6% using these technologies several times weekly and 27.2% using them every day. This shows that there is an increasing familiarity and ease of use with AI technologies in educational contexts. But it also reflects that a considerable 17.2% of participants use these tools seldom, indicating that there are still disincentives to wider use.

The statistics indicate that most participants use AI tools mainly for scholarly purposes, especially virtual assistants (21.6%). However, we observe limited use of more sophisticated AI tools, like machine learning platforms (4.0%) and online tutoring platforms (1.2%). The limited use is an indication of a need for improved training and resources that will enable students to comprehend and effectively utilize a wider variety of AI technologies.

Moreover, the finding that only 1.6% of participants have received formal education focused on AI

emphasizes the necessity for structured learning opportunities in this area. To fully harness the benefits of AI tools, educational institutions must prioritize integrating AI-related content into their curricula, ensuring students are equipped with the skills needed to thrive in a technology-driven environment.

Conclusion

This analysis brings into relief the current use of AI tools among participants, and it uncovers significant patterns and trends. Many respondents indicated that they used AI tools frequently, with 29.6% using them several times a week and 27.2% using them on a daily basis. This reflects an increased confidence and familiarity with AI use within academic environments. But it also points out that a significant 17.2% of participants rarely use these tools, which indicates there are still barriers that restrict broader adoption. The data shows that a large number of participants mainly rely on AI tools for educational purposes, especially virtual assistants (21.6%). However, we observe that there is less use of more sophisticated AI applications, like machine learning platforms (4.0%) and online tutorial programs (1.2%). This minimal use indicates a requirement for improved training and resources that can enable the students to comprehend and utilize a wider variety of AI technologies properly. Additionally, the discovery that a mere 1.6% of respondents have undergone formal education on AI highlights the need for organized learning programs in this field. In order to maximize the potential of AI tools, schools and institutions of higher learning need to make it a priority to incorporate AI-related materials into their curricula so that students are adequately prepared with the skills necessary to excel in a technology-driven world.

In summary, although there is a definite interest in AI tools among participants, there are still wide gaps in their use and comprehension. By filling these gaps with focused educational programs and materials, institutions can enable students to better utilize AI, improving their learning experience and equipping them for future challenges in an increasingly AI-driven world.

Limitation of the Study

Due to limited resources, the study was limited to one university. It will be better if the researchers collect data from other universities. It is also important to conduct a qualitative study on the same issue to address the problem the usage of AI increase among student in this digital world.

Recommendations

The research conclusions could be very informative, an eye-opener into areas that need further exploration and investigation in academia. These could also provide a greater understanding about the usage of AI for their academic needs and gratification among student.

Acknowledgements

None

Funding Source

Author did not receive any funding to accomplished this study.

Conflict of Interest

Authors have no conflict of interest.

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