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Unveiling Perspectives: Exploring Student Perception on Artificial Intelligence in Academics in Rawalpindi, Pakistan

[1]Muhammad Ali Zia, [2]Hina Gul & [3]Irfan Mehmood Janjua
[1]MPhil Scholar, Sociology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.
[2]MPhil Scholar, Sociology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.
[3]Assistant Professor, Department of Sociology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.

ABSTRACT

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Artificial intelligence characterized as computing systems that perform tasks that humans do, such as learning, adapting, and synthesizing, as well as self-correcting and utilizing data for complex processing jobs. Integration of artificial intelligence into education has received much attention because it has the potential to revolutionize current approaches to teaching and learning this study has to explore student's perception toward integration of Artificial intelligence tools in their academic experiences and also to explore the impact on their learning outcomes. For this study quantitative research approach has been used. A sample of 200 students selected from all the departments in the faculty of social sciences of Pir Mehr Ali Shah Arid Agriculture University Rawalpindi. Systematic sampling technique was used for data collection. In order to collect the data questionnaire was used. This research has been extracted from the M.Phil Dissertation. The study revealed that students who use artificial intelligence tools perform better on research work, examinations, assignments, presentations and overall coursework. As a result, artificial intelligence tools assist students in their learning processes and critical thinking. It develops their academic abilities, research work skills, academic grades, and self-efficacy. This study demonstrates that integrating artificial intelligence tools enhances students' academic performance, and self-efficacy. The results indicated that AI tools changed the way students learned and behaved academically.

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1.0 Introduction

The role of AI in education is growing quickly, and the possibility that it will make a huge difference in the way students learn and interact with educational content is becoming a reality. With AI technology advancing day by day, the important aspect to consider is the students' perceptions of such innovations, which will determine their successful implementation and effective utilization in academic settings. This article is a quest to understand the students' views on the role of AI in academics and to investigate their fears, concerns, and lives with AI (Rane et al., 2023).

The study and construction of intelligent machines that can do tasks which have traditionally been traditionally human centric like understanding natural language, discerning patterns, and making decisions based on facts has seen rapid advancement in a field known as artificial intelligence (AI). The artificial intelligence is the machine with the ability to do the tasks that are done by human being but intelligence like planning, problem-solving, responding and adjusting to new circumstances. The area of computer science called artificial intelligence is trying to create computer programs that can imitate intelligent behavior and, in case of success, to enhance humans' capabilities (Rajest et al., 2023).

AI technologies and systems further the possibility of proactive learning activity recommendations, enhancing the teachers' efficiency and their interactions with the learners (Mena-Guacas et al., 2023). AI, implemented in consideration of the learning progress, expertise, and learning difficulties of a particular student, can develop specific learning plans for that student. The data from the tests, assignments, and quizzes can be gathered and using this data, AI can identify learning gaps and give the students feedback. The AI tools can be used not only for the development of learning materials but also for individual coaching and tutoring. (Adiguzel et al., 2023). The field of artificial intelligence involves a robot that can do the thinking of humans and their behaviour. These robots cover a wide range of areas, such as self-driving cars, medical diagnostics, and teaching.

The field of artificial intelligence, which is rapidly growing, is based on the production of intelligent robots that imitate the human cognitive and behavioral abilities. These robots can be used in different sectors such as medical diagnostics, self-driving cars, as well as teaching among others (Warda et al., 2023). These resources can give teachers insightful information about student performance, learning results, and instructional efficacy. To support students, understand their zones of strength and weakness, AI powered valuation systems can, for instance, examine student replies to tasks and offer modified comments (Nazaretsky et al., 2022).

Teachers are becoming more worried that students would use Chat GPT to widespread their written projects because plagiarism recognition software can produce information in a matter of seconds while remaining undetected (Halaweh, 2023). Detecting text created by Artificial intelligence tools using other AI tools is one of the difficulties that are being addressed. Queries have been elevated about the precision which AI tools can distinguish between writing authored by individuals and text created by AI tools, to be more specific. This is so that content produced by such a technology can be distinguished from content created by people, which is currently

impossible (Tovani, 2023).

AI assists in automating grading process, reducing time on behalf of professors and delivering fast feedback to students on their papers. By examining essays, reports, and other types of written work, AI may offer input on syntax, punctuation, and spelling. Teachers can spend more time on important duties like lesson planning and student support by employing automated grading systems, which saves a lot of time. This can lighten the pressure on teachers while also assisting pupils in developing their writing abilities. For instance, Turnitin's AI-powered software employs machine learning and natural language handling to evaluate papers and offer grammatical, spelling and syntax comments. The tool can also identify plagiarism, assisting professors in more accurate and timely assignment grading (Motlagh et al.., 2023).

Modern artificial intelligence software called ChatGPT makes use of the GPT-3.5 architecture created by OpenAI to enable natural language discussions between machines and humans It is a chatbot that can answer questions and provide relevant information on subjects such as current affairs, entertainment, technology, science, and much more. The program uses complex operating procedures that are built on processes of machine learning with the help of algorithms and understand the historical context of a user's question to produce responses that are coherent and close to human-like (Sarkadi, 2023).

Chat GPT works based on an artificial neural network trained using a large amount of data including text from social media posts, encyclopedias, news items, and online forums. Through this training, the Chabot can comprehend the subtleties of language, such as grammar, syntax, and context, and produce accurate but also believable responses. Chat GPT was used concurrently for research writing in order to write the introduction, vague, codes, and conclusions, organize references, and improve writing style, among other things. In fact, Chat GPT's capacity to provide intelligent and excellent content has led to its inclusion as a co-author of academic papers (Baber et al., 2023)

2.0 Literature Review

Doshi et al. (2023) examined that Artificial intelligence applications have various benefits, including speeding up scientific research, granting instantaneous and unrestricted access to information, making it simple to read and summarize literature, creating datasets for use in investigations, and many more. However, these techniques also offer certain risks to the ethics of publishing and research.

Salvagno et al. (2023) explores that artificial intelligence tools should use with caution and many people to ensure its authenticity and correctness should review any information they provide. This is important in cases where sensitive or complex study topics are being dealt with because errors or biases in the data could affect the results negatively. In the final analysis, the positive impacts of AI on scientific research and publications must be carefully weighed before AI can be used ethically and the shortcomings, as well as a commitment to the highest standards of integrity and transparency, must be taken into account.

Norouzi et al. (2023) examined two closed-loop artificial intelligence (AI) performance prediction model subcategories: The discussion of using AI prediction models to forecast students'

learning outcomes is done by applying the educational context and mainly considering the effect and function of these models. As seen through the lens of AI designs, this is mainly concerned with improving the accuracy of AI prediction systems: constructing and testing the AI representations, which dependably forecast the student's learning outcomes. The loop is established through the growth and optimization of the AI designs, academic application, and the research validation which empowers the two points of views to be integrated for efficient intelligent academic performance prediction models.

Jio et al. (2022) stated that optimal prediction approach to student academic progress was investigated by using genetic algorithms as an evolutionary computing technique. Additionally, he provided the prediction criteria needed to classify and transform the learning materials for a web-based engineering course. One of the most important parts of creating AI models is therefore choosing the right AI algorithms. Particular standards must be set to determine the variables for establishing the procedures for learning to increase the prediction accuracy of AI.

Mijwil et al. (2023) examined that Artificial intelligence applications have various benefits, including speeding up scientific research, granting instantaneous and unrestricted access to information, making it simple to read and summarize literature, creating datasets for use in investigations, and many more. However, these techniques also offer certain risks to the ethics of publishing and research.

Selwyn (2023) described artificial intelligence tools on academics in his research. He is a sociologist of education who has written extensively on technology in education. His work often explores the social implications of digital technologies, including artificial intelligence, in educational settings.

Zhou (2023) described that artificial intelligence tools becomes need of educational systems. He is a sociologist of education with a focus on digital technologies in education. His work delves into the social aspects of educational technologies, including the implications of AI tools on students and the educational system in his research.

Thurik et al. (2024) described in his research that offers modern conceptions of economic beliefs in sociology and economics, as well as behavioral accounts, narrative approaches, and integrative views influenced by science and technology studies. The paper makes the case that state-of-the-art expectancies research in both fields has not given enough consideration to the reality that contemporary technology both supports and partially replaces human agents when they create their beliefs. In light of this, this paper offers a collaborative research agenda for the study of economic expectations and explores how display models, algorithms, and the use of AI co-determine and significantly alter theories and experimental understanding of expectation generation.

Hephzipah et al. (2023) stated that companies and individuals in a wide range of industries have embraced AI approaches, allowing them to automate and optimize complicated processes, increase productivity, and make educated decisions. Even in extremely dynamic and uncertain contexts, AI systems can analyze enormous volumes of data, spot patterns, and anomalies, and make precise predictions. They can support experts in a variety of industries, including

engineering, finance, and healthcare, by offering perceptions and suggestions based on data-driven analysis.

Talan et al. (2023) discovered that technology is a need in our daily lives, as well as the past ten years, advancements in Intelligence and the products made possible by this technology have given us reason to believe that Al will soon permeate every aspect of our lives. Science is probably one of the most significant fields impacted by technological advancements. Scientific research results, such as journal articles, change throughout time in response to newly developed technologies. Commonly used in article writing include Endnote, Zotero, and Mendeley. Plagiarism detection tools like Turnitin, Ithenticate, Small SEO Tools, and others have established themselves as essentials for academics

Vallem et al. (2023) explores that numerous authors contend that AI cannot co-author articles; others contend that it will be hard to resist the advantages that technology can offer us; yet others contend that AI is useful but still needs to be improved. On the 30th of November in 2022, Chat GPT was introduced. It is made to produce text that sounds like human speech and is written in a conversational style. It can produce suitable responses to queries and prompts provided by users because it was trained on a vast dataset of human-human dialogues. It is a potent tool for NLP research because it can also produce entire dialogues on its own.

Bahsi (2023) accuracy is the most crucial factor, and employing AI tools like Chat GPT or GPT4 to write an article may cause issues with accuracy. We are unsure of the accuracy of the information that AI serves us because it is based on online data that it has scanned. The Chat GPT application, a product of AI, which is quickly growing globally and is cherished by millions of users, is the most modern technology that will assist academics and scientific applications. The employment of AI as a co-author in academic works has recently become one of the most hotly debated subjects in the academic community.

Hypothesis

H0: There is no significant correlation between student familiarity with AI and their perception of its potential benefits in academics.

H1: There is a significant positive correlation between student familiarity with AI and their perception of its potential benefits in academics.

3.0 Methodology

Quantitative research used to access academic use of artificial intelligence tools among university students. Quantitative research is a systematic empirical inquiry of observable phenomena through numerical data collection, statistical analysis and mathematical models. It attempts to quantify and measure relationships, patterns, and trends in a sample or population to produce repeatable and objective results (Wang et al., 2023).

3.1 Universe

Universe is entire set or population of subjects or elements that are focus on the study (West et al., 2022). Pir Mehar Ali Shah Arid Agriculture University was the universe of this research. The students of this university used artificial intelligence tools for their academic purposes. The used of artificial intelligence tools in this university is remarkable and any of the research that

relates to academic use of artificial intelligence tools were not conducted yet so researcher chosen this universe.

3.2 Target Population

The term "target population" describes a particular group or collection of people, things, or occasions in which a researcher has an interest in researching and to whom they want to apply their conclusions in general (Pandey et al., 2021). The target population of this study was students of Social Sciences in PMAS Arid Agriculture University.

3.3 Sampling

A subgroup of people (a sample) selected from a broader group (a population) is called a sample (Mweshi et al., 2020).

3.4 Sample Size

Sample size indicates to number of individual units selected from a greater number of participants to be included in a study (Casteel et al., 2021). The researcher was collected data from both male and female students. From the above population of Pir Mehar Ali Shah Arid Agriculture University a sample of 200 students was selected from Faculty of Social sciences. Sample size was selected with the help of sample fraction formula.

3.5 Sampling Technique

The method or strategy used to choose a subset of people from a broader group to conduct research is known as a sampling methodology (Baltes et al., 2022). The researcher was adopted the systematic sampling for the purpose of data collection from target population. Systematic sampling is kind of probability sampling system where researcher selects members of the population at regular intervals.

3.6 Data Collection Tool

Data collection tool is an instrument or method used to gather information, facts or observations from a specific source or target population for research (Kumari, 2022). The researcher was collected data by using the survey type method with help of questionnaire which includes closed ended questions.

3.7 Data Coding and Data Entering

Data coding is the process of assigning numerical or alphanumeric codes to raw data based on predefined categories or themes. It helps in transforming categorical data into a format suitable for quantitative analysis (Yang et al., 2021). The researcher coded data before the process of entering the data.

Data entry involves the manual or electronic input of coded or raw data into a computer system or a data file. It converts physical data (e.g., survey responses on paper) into a digital format for analysis using statistical software (Deterding et al., 2021).

4.0 Findings and Results

Univariate analysis used in the research involves the examination and interpretation of a single variable at a time. Knowing a single variable's distribution, principal tendency, and dispersion is the main goal of univariate analysis. Bivariate analysis also used to examine link between two variables by analyzing them simultaneously. The goal of bivariate analysis is to comprehend the

dependence, correlation, or relationship between two variables (Selven et al., 2021). To determine how closely two variables are related researcher performed correlation test.

4.1 Correlation

Table 1: Pearson correlation between frequency of AI tools use and perception of AI's potential in academics

		Frequently use of AI tool for academic purpose	AI tools have potential to revolutionize students approach for their academic work
Frequently use of AI tool for academic purpose	Pearson Correlation	1	.695**
	Sig. (2-tailed)		.000
	N	200	200
AI tools have potential to revolutionize students approach for their academic work	Pearson Correlation	.695**	1
	Sig. (2-tailed)	.000	
	N	200	200

The study found a statistically significant positive link between the notion that AI technologies can revolutionize students' attitudes to academic work and the frequency with which they are used for such reasons. The Pearson correlation coefficient was found to be .695 ($p < .01$, two-tailed) with a sample size of 200 participants. According to this strong positive association, students' perceptions that AI tools can completely transform how they approach their academic work appear to rise in tandem with the frequency at which these technologies are used for academic reasons.

A significant and positive linear link exists between these two variables, as indicated by the correlation value of.695. It seems improbable that the observed link happened by accident, as indicated by the significance level.000 ($p <.01$). Empirical data thus supports the hypothesis that people who regularly use AI tools for learning are more likely to think that AI can fundamentally change how students approach their studies.

Table 2: Pearson Correlation between AI Tools and Academic Performance

		AI helps in improving grades	Impact of AI tools on academic performance
AI helps in improving grades	Pearson Correlation	1	.841**
	Significance (2-tailed)		.000
	N	200	200
Impact of AI tools on academic performance	Pearson Correlation	.841**	1
	Significance (2-tailed)	.000	
	N	200	200

An extremely strong positive association was found in the correlation analysis between the belief that AI improves grades and the effect of AI technologies on academic achievement. With 200 participants in the sample, the Pearson correlation coefficient was found to be 841 (p <.01, two-tailed).

The perception of influence of AI tools on overall academic presentation and idea that AI improves grades has a strong linear relationship, as seen by the large positive correlation of.841. Put differently, people who view AI as a way to improve their scores are likewise likely to think that AI tools improve their academic performance. The correlation found is highly unlikely to have happened by coincidence, as indicated by the significance level of.000 (p <.01). The idea that there is a positive correlation between the perception of AI tools' influence on academic achievement and the conviction that AI may effectively improve grades is thus supported by a substantial body of empirical evidence.

Table 3: Pearson Correlation between Use of AI Tools for Academic Purpose and Improvement in Students' Confidence to Succeed Academically

		Frequently use of AI tool for academic purpose	**AI tools improve confidence of students to succeed academically**
Frequently use of AI tool for academic purpose	Pearson Correlation	1	.910**
	Significance (2-tailed)		.000
	N	200	200
AI tools improve confidence of students to succeed academically	Pearson Correlation	.910**	1
	Significance (2-tailed)	.000	
	N	200	200

The frequency of using AI tools for academic purposes and the perception that using AI tools gives students more confidence to perform academically showed a very strong and statistically significant positive link, according to a correlation analysis. With 200 participants in the sample, the Pearson correlation coefficient was found to be 910 (p <.01, two-tailed). The strong and nearly perfect linear association between the frequency of using AI tools for academic reasons and the belief that these technologies give students more confidence to perform academically is indicated by the exceptionally high positive correlation of.910. Put another way, there is a corresponding and significant increase in the opinion that AI technologies have a favorable effect on students' confidence in their ability to succeed academically as the frequency of their use rises.

The statistical significance of the observed correlation is highlighted by the significance level 000 (p <.01), indicating that the probability of such a connection occurring by chance is exceedingly unlikely. Therefore, the hypothesis that there is a very strong positive correlation between the opinions that using AI technologies for academic reasons regularly helps students feel

more confident about their academic performance is supported by compelling empirical evidence.

Table 4: Pearson Correlation between Improvement in Research Skills with AI Tools and Contribution to Interdisciplinary Research Initiatives among Students

		AI tools improve research skills	AI tools contribute to interdisciplinary research initiatives among students
AI tools improve research skills	Pearson Correlation	1	.858**
	Significance (2-tailed)		.000
	N	200	200
AI tools contribute to interdisciplinary research initiatives among students	Pearson Correlation	.858**	1
	Significance (2-tailed)	.000	
	N	200	200

A highly substantial positive association was found in the correlation study between students' beliefs that AI tools enhance their research skills and their beliefs that AI tools support interdisciplinary research endeavors. With 200 participants in the sample, the Pearson correlation coefficient was found to be 858 ($p < .01$, two-tailed). The view that AI tools improve individual research skills and the belief that these tools support multidisciplinary research endeavors among students are strongly positively correlated (.858), suggesting a considerable and robust linear relationship. Put another way, people who think AI technologies help them become better researchers are also more likely to think that these tools help students collaborate on multidisciplinary research projects.

The statistical significance of the observed correlation is highlighted by the significance level of.000 ($p < .01$), which suggests that it is exceedingly rare for such a correlation to arise by coincidence. Consequently, there is strong empirical evidence to support the hypothesis that students' perceptions of their contribution to multidisciplinary research endeavors and the perceived enhancement of their research skills via AI technologies are significantly positively correlated.

4.2 Regression

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	160.749	3	53.583	169.309	.000[b]
	Residual	62.031	196	.316		
	Total	222.780	199			

The Analysis of Variance (ANOVA) results indicate that the regression model, which explores the relationship between various predictors and the impact of AI tools on academic

performance, is highly significant ($F = 169.309$, $p < .001$). This suggests that the included predictor variables collectively have a significant effect on explaining the variance in students' perceptions of how AI tools affect their academic performance. However, without the coefficients for each predictor variable, the specific impact of each predictor cannot be determined. The predictors considered in the model include perceptions related to AI tools improving research skills, revolutionizing students' approaches to academic work, and aiding in grade improvement. The significant F-value implies that at least one of these predictors significantly contributes to explaining the variation in the dependent variable.

Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.004	.122		-.037	.971
AI tools have potential to revolutionize students approach for their academic work	.027	.072	.020	.375	.708
AI benefits in improving results	.608	.069	.647	8.834	.000
AI tools improve research skills	.224	.072	.216	3.124	.002

Regression's coefficients help uncover the specific relationship between each predictor variable and the student's perception of how AI utilization impacts academic performance. The most essential predictor, that is, "AI improves grades" turns out to be the most influential one, with the highest significant positive coefficient of 0. For instance, it might be that those who view AI as an instrument bringing up their grade mostly report a more favorable effect of AI tools on their academic performance. Furthermore, we observe that the predictor "AI tools help students to improve their research skills" also shows a significant positive impact on students' perceptions as it has a coefficient of 0. This implies that students who assume that AI tools increase research skills are more likely to think about their strong positive influence on their academic performance.

5.0 Discussion and Conclusion

The correlation analyses conducted in the study reveal interesting associations between students' views of AI tools and different dimensions of their academic lives. It seems that the increased use of AI tools for academic purposes is directly proportional to the belief that AI can change how students' study. With AI applications being used more and more, a lot of students are getting familiar with these technologies and see them as tools for the transformation of education. The result of this research, therefore, showcased the growing nature of AI used in education and the ability of AI to change the traditional methods of teaching and learning.

Additionally, the exceptionally strong positive correlation between the view that AI helps get higher scores and the perceived influence of AI tools on academic performance also indicates the significance of students' perceptions in forming their academic outcomes. AI students who believe AI would help them get better grades tend to acknowledge that it is a useful tool for their general academic achievement. This established the role of nurturing a positive attitude towards

AI in students, as these positive attitudes can affect their academic performance and enthusiasm. The frequent use of AI tools for academic-related tasks and the perception that the use of AI tools boosts the confidence levels of students to academically succeed depict the confidence-building potential of AI technologies in academic learning. Self-ability occurs when students get familiar with AI tools when it comes to handling academic responsibilities. This result proves that AI-based tools are not only about improving academic skills but also making students feel more competent and confident which are the components of success at school.

5.1 Conclusion

The findings of this study reveal that the perception students hold towards AI tools significantly determines their learning and performance as students. Positive attitudes towards AI are associated with higher utilization rates, improved performance, improved self-estimation, and enhanced interdisciplinary collaboration. This information highlights that the perception of AI tools should be known to educators and policymakers since the same should be compensated in the processes of education and policies. The positive attitude towards the use of AI and the proper application of its capacities to bring change to education will help teachers improve the learning process, improve learners' performance, and create a culture of innovation and teamwork. Future studies should focus on the views that people have concerning AI tools and how such views can be implemented in practice and in policy formulation in schools. The positive correlation between students' opinions regarding the effectiveness of AI tools improving their research and students' opinions regarding the effectiveness of AI tools encouraging interdisciplinary research among students proves the different benefits of AI technologies in learning. It is only wise that students who recognize the AI tools as improving the quality of their research can trust the opportunities of using such tools to promote collaborative and interdisciplinary research. It is precisely this result that underlines the fact that AI technologies are capable of enhancing the creation of new knowledge and interaction between disciplines.

Muhammad Ali Zia: Problem Identification and Theoretical Framework
Hina Gul: Data Analysis, Supervision and Drafting
Irfan Mehmood Janjua: Data Collection, Idea Refinement

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