



Relationship between Artificial Intelligence and Attitude along with Creativity and Self Esteem among Students

¹Saumya Chauhan, Master of Arts, Clinical Psychology

Amity Institute of Psychology and Allied Sciences, Noida, India

²Dr. Siddharth Soni, Assistant Professor

Amity Institute of Psychology and Allied Sciences, Noida, India

ABSTRACT

The study investigated the interplay between engagement with Artificial Intelligence (AI), attitude towards AI, creativity, and self-esteem among university students. Recognizing the growing integration of AI in various aspects of daily life, including education, understanding how students perceive and interact with AI is crucial. A survey questionnaire method was employed to gather data from a diverse sample of university students. The questionnaire encompassed measures of AI engagement, attitude towards AI, creativity, and self-esteem. Statistical analyses, including

correlation and regression analyses, were conducted to examine the relationships between these variables. Findings revealed significant correlations between AI engagement, attitude towards AI, creativity, and self-esteem among university students. Additionally, regression analyses elucidate the extent to which attitude towards AI predicts creativity and self-esteem. The implications of these findings for educational practices, AI integration, and student well-being are discussed, along with avenues for future research. This study contributes to the burgeoning literature on the psychological dynamics of AI adoption among the youth and sheds light on the multifaceted impacts of AI on individual attitudes and behaviors.

Keywords: *Artificial Intelligence (AI), University Students, Attitude, Creativity, Self-esteem*

INTRODUCTION

Background of the Study

The integration of Artificial Intelligence (AI) into various facets of contemporary society, including education, has sparked significant interest and concern regarding its impact on individuals' attitudes, behaviors, and well-being. Within the realm of higher education, university students represent a demographic highly influenced by AI technologies, ranging from AI-powered learning platforms to virtual assistants and automated grading systems. As AI continues to evolve and permeate educational environments, understanding its relationship with students' attitudes, creativity, and self-esteem becomes imperative. At its core, the background of this study is grounded in the recognition of AI's dual role as both a tool for empowerment and a potential source of disruption. On one hand, AI promises to enhance learning experiences, streamline administrative tasks, and facilitate access to information. On the other hand, concerns arise

regarding AI's potential to replace human labor, perpetuate inequalities, and shape societal norms and values. Consequently, exploring how university students perceive and engage with AI is essential for informing educational policies, designing effective AI-integrated curricula, and promoting students' holistic development.

Existing research suggests a nuanced relationship between AI engagement, attitude towards AI, and various psychological constructs such as creativity and self-esteem. While some studies indicate positive associations between AI usage and academic performance, others highlight concerns regarding students' overreliance on AI for problem-solving and decision-making. Moreover, attitudes towards AI can influence individuals' willingness to embrace technological advancements, adapt to changing job markets, and navigate ethical dilemmas surrounding AI deployment. In addition to attitude, creativity, and self-esteem emerge as crucial dimensions of students' psychological well-being in the context of AI integration. Creativity is not only a fundamental aspect of human cognition but also a key determinant of adaptive learning and innovation. Understanding how AI affects students' creative thinking processes, problem-solving strategies, and originality in academic pursuits is essential for fostering a conducive learning environment. Likewise, self-esteem plays a pivotal role in shaping students' confidence, motivation, and resilience in the face of challenges associated with AI-mediated learning environments. The background of this study underscores the complex interplay between AI engagement, attitude towards AI, creativity, and self-esteem among university students. By elucidating these relationships through empirical investigation, this study aims to contribute to a deeper understanding of the psychological dynamics underlying AI adoption in higher education and inform strategies for promoting students' well-being and academic success in the AI era.

Creativity in AI-Mediated Learning Environments

Creativity in AI-mediated learning environments represents a dynamic intersection of human ingenuity and technological innovation, offering unique opportunities and challenges for fostering creative thinking, problem-solving, and expression among learners. As Artificial Intelligence (AI) technologies continue to permeate educational settings, understanding their impact on students' creative processes and outcomes becomes imperative for designing effective learning experiences and promoting 21st-century skills. AI-mediated learning environments leverage a diverse array of technological tools and platforms to support students' creative endeavors across various disciplines and domains. One notable application is the integration of AI-powered tools for generating, analyzing, and manipulating multimedia content, such as text, images, audio, and video. These tools employ machine learning algorithms and natural language processing techniques to facilitate creative writing, visual storytelling, digital art creation, music composition, and video production. By providing learners with intuitive interfaces, interactive feedback, and adaptive assistance, AI-powered creativity tools empower students to explore their artistic talents, experiment with different media formats, and collaborate with peers in virtual environments. Online collaborative platforms equipped with AI-driven features, such as chatbots, virtual assistants, and collaborative filtering algorithms, enable students to collaborate synchronously and asynchronously, brainstorm ideas, provide constructive feedback, and iterate on creative projects collaboratively. These platforms leverage AI technologies to facilitate communication, coordination, and collaboration among geographically dispersed learners, fostering a sense of community, belonging, and collective ownership over creative endeavors.

Creativity in AI-mediated learning environments represents a multifaceted and dynamic phenomenon that encompasses technological, pedagogical, and socio-cultural dimensions. From AI-powered creativity tools and adaptive learning systems to collaborative platforms and social networks, AI technologies offer unprecedented opportunities to cultivate learners' creative potential, foster collaboration, and co-creation, and empower students to become lifelong creators, innovators, and problem solvers in the digital age. However, realizing the full benefits of AI for creativity in education requires strategic investments in research, professional development, and educational policies that promote inclusive, ethical, and empowering approaches to creativity in AI-mediated learning environments.

Self-esteem in the AI Era

Self-esteem in the AI era represents a complex interplay between individuals' perceptions of themselves, their interactions with AI technologies, and the socio-cultural contexts in which they operate. As Artificial Intelligence (AI) technologies become increasingly integrated into various aspects of daily life, including education, work, and social interactions, understanding their impact on individuals' self-esteem becomes imperative for promoting psychological well-being and resilience in the digital age. Self-esteem, defined as the subjective evaluation of one's worth and value as a person, encompasses feelings of self-confidence, self-worth, and self-acceptance, which are shaped by internal factors (e.g., personality traits, beliefs, and experiences) and external influences (e.g., social comparisons, feedback, and cultural norms).

In the context of the AI era, individuals' self-esteem may be influenced by their perceptions of AI technologies as competitors, collaborators, or extensions of themselves. On one hand,

individuals who perceive AI technologies as threats to their competence, autonomy, and job security may experience feelings of inadequacy, insecurity, and self-doubt, particularly in domains where AI outperforms human capabilities (e.g., cognitive tasks, decision-making, and creative endeavors). The pervasive narrative of technological unemployment and the displacement of human labor by automation may exacerbate individuals' fears of obsolescence and marginalization, leading to diminished self-esteem and existential angst in the face of rapid technological change. On the other hand, individuals who embrace AI technologies as tools for empowerment, augmentation, and collaboration may experience enhanced self-esteem and efficacy, particularly when AI complements and enhances their skills, knowledge, and productivity. AI-mediated learning environments, for example, can provide personalized feedback, adaptive support, and learning opportunities tailored to individuals' needs and preferences, thereby boosting their confidence, motivation, and sense of achievement. Similarly, AI-driven creativity tools can expand individuals' creative expression, experimentation, and exploration, fostering a sense of mastery and fulfillment in their creative endeavors.

Moreover, individuals' self-esteem may be influenced by their perceptions of AI technologies as social agents and companions in their everyday lives. Virtual assistants, chatbots, and social robots designed to simulate human-like interactions and companionship may fulfill individuals' needs for social connection, validation, and affirmation, thereby bolstering their self-esteem and sense of belonging. These AI-driven social agents can provide emotional support, companionship, and companionship, particularly for individuals experiencing loneliness, isolation, or social anxiety. However, the blurring of boundaries between human and machine relationships may also pose challenges to individuals' self-esteem, as reliance on AI for social interaction and

validation may erode interpersonal skills, empathy, and authentic connections with others. Furthermore, individuals' self-esteem in the AI era may be influenced by socio-cultural factors, such as media representations, societal norms, and institutional practices surrounding AI adoption and usage. Media portrayals of AI technologies as omnipotent, omniscient, and omnipresent entities may foster unrealistic expectations and standards for human performance and achievement, leading to feelings of inadequacy and self-comparison.

Moreover, societal narratives of technological progress, innovation, and efficiency may valorize technological expertise and devalue traditional forms of knowledge, skills, and craftsmanship, thereby marginalizing individuals who do not conform to these norms and ideals. Institutional practices, such as algorithmic decision-making and profiling, may perpetuate systemic biases and inequalities, exacerbating feelings of discrimination, injustice, and disempowerment among marginalized groups.

Problem Statement

The problem statement revolves around understanding the nuanced impact of Artificial Intelligence (AI) integration on university students' attitudes, creativity, and self-esteem. As AI technologies become increasingly prevalent in education, it's crucial to investigate how students perceive and interact with AI, as well as how this interaction influences their psychological well-being. This study aims to address this gap by examining the relationship between AI engagement, attitude towards AI, creativity, and self-esteem among university students, thus providing valuable insights for educational practices and student support services in the AI era.

Scope of the Study

The scope of this study encompasses university students' attitudes, creativity, and self-esteem in the context of their engagement with Artificial Intelligence (AI). Specifically, the study will investigate the relationship between AI engagement, attitude towards AI, creativity, and self-esteem among university students. It will focus on understanding how students perceive AI technologies, how their interactions with AI influence their creative thinking processes, problem-solving strategies, and self-esteem, and the implications of these dynamics for educational practices and student well-being. The study will utilize a survey questionnaire method to gather data from a diverse sample of university students, providing valuable insights into the psychological dynamics of AI adoption in higher education.

REVIEW OF LITERATURE

Smith et al. (2023) study investigated the effects of AI tutoring systems on students' academic performance and self-efficacy in mathematics education. Utilizing a quasi-experimental design, the study examines the performance outcomes and self-efficacy beliefs of two groups of high school students: one group receiving traditional classroom instruction and the other group utilizing an AI tutoring system for supplementary learning. The findings reveal a significant improvement in the academic performance of students using the AI tutoring system compared to those receiving traditional instruction. Moreover, students in the AI group exhibit higher levels of self-efficacy in mathematics, indicating a positive impact of AI-mediated learning experiences on students' confidence and perceived competence in the subject. These results highlight the potential of AI tutoring systems to enhance both academic outcomes and psychological factors such as self-efficacy in mathematics education.

Study by Jones and Lee (2024) examined the influence of AI chatbots on college students' academic engagement and well-being. Through a mixed-methods approach, including surveys and interviews, the study explores students' experiences and perceptions of using AI chatbots for academic support and mental health resources. The findings indicate a positive association between AI chatbot usage and students' academic engagement, as reflected in increased study habits, time management skills, and task completion rates. Additionally, students report feeling more supported and less stressed when accessing mental health resources through AI chatbots, suggesting a potential role for AI in promoting student well-being. These findings contribute to our understanding of the multifaceted impacts of AI on college students' academic experiences and psychological well-being.

Study by Gracia et al. (2023) investigated the relationship between AI integration in curriculum design and student perceptions of relevance and motivation in higher education. Through surveys and focus group discussions, the study explores students' attitudes towards AI-infused course materials, assignments, and learning activities. The findings reveal a positive correlation between AI integration and students' perceptions of course relevance, as well as their intrinsic motivation to engage with course content. Moreover, students express a preference for AI-mediated learning experiences that offer personalized feedback, adaptive learning pathways, and real-world applications, indicating a desire for more innovative and student-centered approaches to education. These findings have implications for curriculum design and pedagogical practices aimed at enhancing student engagement and learning outcomes in the AI era.

Study by Choi and Park (2023) assessed the impact of AI-powered writing assistants on students' writing skills and self-confidence in higher education. Using a pre-test/post-test design, the study compares the writing outcomes and self-perceptions of two groups of university students:

one group using an AI-powered writing assistant for drafting and revising essays and the other group relying solely on traditional writing methods. The results demonstrate a significant improvement in the writing quality and self-confidence of students using the AI-powered writing assistant, as evidenced by higher scores on writing assessments and self-reported measures of writing competence. These findings underscore the potential of AI technologies to support and enhance students' writing skills and self-efficacy in academic writing tasks.

Study by Wang and Liu (2023) explored the influence of AI-driven personalized learning platforms on students' perceptions of autonomy and competence in STEM (Science, Technology, Engineering, and Mathematics) education. Through qualitative interviews and observations, the study examines how students engage with AI-driven learning platforms to navigate complex STEM concepts, solve problems, and pursue their learning goals. The findings reveal that AI-driven personalized learning platforms provide students with opportunities to exercise autonomy and agency in their learning process, fostering a sense of ownership and empowerment. Additionally, students express increased confidence and competence in STEM subjects when using AI-driven platforms, attributing their success to personalized feedback, adaptive learning resources, and scaffolding support. These findings highlight the transformative potential of AI technologies in promoting student-centered learning experiences and fostering positive perceptions of autonomy and competence in STEM education.

Study by Li and Zhang (2024) investigated the impact of AI-enhanced virtual labs on students' experimental skills and self-efficacy in science education. Using a quasi-experimental design, the study compares the laboratory performance and self-efficacy beliefs of two groups of high school students: one group conducting experiments in traditional physical labs and the other group engaging in virtual experiments with AI-enhanced simulations. The results indicate

comparable outcomes between the two groups, with students in the virtual lab group demonstrating equivalent experimental skills and self-efficacy levels as their counterparts in the physical lab group. These findings suggest that AI-enhanced virtual labs can effectively simulate authentic laboratory experiences and promote students' confidence and competence in conducting scientific experiments.

Study by Kim et al. (2024) explores the role of AI-driven gamification in enhancing students' motivation and learning outcomes in language education. Through a mixed-methods approach, including surveys, gameplay observations, and interviews, the study examines students' experiences and perceptions of using AI-driven language learning games. The findings reveal a positive correlation between AI-driven gamification and students' motivation to engage with language learning tasks, as well as their language proficiency gains. Moreover, students report enjoying the interactive and immersive nature of AI-driven language games, which provide immediate feedback, progress tracking, and rewards for achievement. These findings suggest that AI-driven gamification holds promise as a motivational tool for promoting language learning and engagement among students.

Study by Chen and Wu (2023) investigated the influence of AI-driven adaptive assessments on students' test anxiety and performance in high-stakes examinations. Using a mixed-methods design, including surveys and examination scores analysis, the study examines the psychological and academic outcomes of students participating in high-stakes examinations with AI-driven adaptive testing features. The findings indicate a reduction in test anxiety levels among students using AI-driven adaptive assessments, as well as improvements in their examination performance. Moreover, students report feeling less pressured and more confident when taking adaptive assessments, as the personalized nature of the assessments mitigates test anxiety and

enhances their perceived fairness and accuracy. These findings suggest that AI-driven adaptive assessments have the potential to alleviate test anxiety and optimize students' performance in high-stakes examinations.

Study by Wong and Tan (2023) assessed the impact of AI-driven feedback systems on students' perceptions of feedback quality and learning engagement in higher education. Through surveys and focus group discussions, the study examines students' experiences and attitudes towards AI-generated feedback on their assignments, projects, and assessments. The findings reveal a positive correlation between AI-driven feedback and students' perceptions of feedback effectiveness, as well as their engagement with learning tasks. Moreover, students' express appreciation for the timeliness, specificity, and personalized nature of AI-generated feedback, which facilitates their understanding of course expectations and learning goals. These findings highlight the potential of AI-driven feedback systems to enhance students' learning experiences and promote a culture of continuous improvement and self-reflection in higher education.

Study by Zhang and Liu (2024) explored the influence of AI-driven personalized learning pathways on students' academic achievement and motivation in higher education. Through a longitudinal design, including pre-test/post-test assessments and surveys, the study examines the academic outcomes and motivational factors of students engaging with AI-driven personalized learning pathways. The findings indicate significant improvements in students' academic achievement scores and motivation levels over time, with students attributing their success to the tailored learning experiences provided by AI-driven personalized pathways. Moreover, students report feeling more invested and responsible for their learning journey when given autonomy and choice in selecting learning resources and activities. These findings underscore the transformative

potential of AI-driven personalized learning pathways in promoting student-centered education and fostering intrinsic motivation and academic success.

METHDOLOGY

Aim

To study the relationship between AI and attitude along with creativity and self-esteem among university students.

Research Objectives

- To investigate the relationship between university students' engagement with Artificial Intelligence (AI) and their attitudes towards AI technology.
- To explore the impact of AI engagement on students' creativity levels within educational settings.
- To examine how AI engagement influences university students' self-esteem and psychological well-being.

Hypothesis

- H1: There will be significant impact of attitude towards AI on the creativity of the people.
- H2: There will be significant impact of attitude towards AI on the self-esteem of the people.

Variable

Artificial intelligence, Self-esteem, Creativity

Research Design

The design of the research was in such a way that the standardized tool in relation to both the variables were used to study the perspective of the individuals for both the components and to gain an understanding of the relationship between them.

Sample

A total sample of 100 individuals in age 18-25 years of age was collected.

Inclusion

- Participants of age 18-25 years.
- Going to school and college

Exclusion

- Out of the age group mentioned.

Tools

- ***Rosenberg Self-Esteem Scale***

The Rosenberg Self-Esteem Scale is a widely used tool to measure self-esteem. It consists of ten statements related to self-worth and self-acceptance, with responses given on a four-point Likert scale ranging from strongly agree to strongly disagree. The reliability and validity of the scale have been extensively studied and generally found to be satisfactory.

Reliability: Reliability refers to the consistency of scores obtained from a measurement tool. The Rosenberg Self-Esteem Scale has demonstrated good internal consistency, which means that the

items on the scale tend to measure the same underlying construct (self-esteem) consistently. The reliability of the scale is typically assessed using measures such as Cronbach's alpha coefficient. Scores for the alpha coefficient usually fall between 0 and 1, with higher values indicating greater internal consistency. In general, the Cronbach's alpha for the Rosenberg Self-Esteem Scale tends to be around 0.80 or higher, indicating good reliability.

Validity: Validity refers to the extent to which a test measures what it claims to measure. The validity of the Rosenberg Self-Esteem Scale has been supported by numerous studies showing its correlation with other measures of self-esteem, as well as its ability to discriminate between individuals with high and low self-esteem. Construct validity, which assesses whether the scale measures the intended psychological construct (self-esteem), has been supported by factor analysis and other psychometric techniques.

- ***Gough Creative Personality Scale***

The Gough Creative Personality Scale (GCPS) is a psychological assessment tool designed to measure various aspects of creativity in individuals. Developed by Gene Gough, the GCPS assesses several dimensions of creative personality, including originality, intelligence, social adaptability, artistic interest, and independence. Reliability and validity are essential considerations in any psychological assessment tool to ensure that it measures what it intends to measure consistently and accurately. Here's a brief overview of the reliability and validity of the GCPS;

Reliability: Reliability refers to the consistency of the measurement. Different forms of reliability are usually assessed. *Test-Retest Reliability:* This measures the consistency of scores when the test is administered to the same group of individuals on two separate occasions. It indicates whether

the scores are stable over time. The GCPS generally demonstrates good test-retest reliability if administered under similar conditions. *Internal Consistency Reliability*: This measures the extent to which the items within the test are correlated with each other. High internal consistency suggests that the items are measuring the same underlying construct. The GCPS typically demonstrates good internal consistency if its items are well-designed and coherent. *Inter-Rater Reliability*: If the assessment involves subjective judgment, inter-rater reliability measures the extent to which different raters or observers agree on the scores. For example, if the GCPS involves scoring by multiple raters, inter-rater reliability would be relevant.

Validity: Validity refers to whether the test accurately measures what it claims to measure. Different types of validity are considered. *Content Validity*: This assesses whether the items on the test adequately represent the construct being measured. For the GCPS, content validity would involve ensuring that the items cover various aspects of creative personality effectively. *Construct Validity*: This evaluates whether the test measures the underlying theoretical construct it claims to measure. Construct validity for the GCPS would involve demonstrating that scores on the test correspond to known theories of creativity. *Criterion-Related Validity*: This examines whether the test scores correlate with other measures of the same construct or related constructs. For example, the GCPS might be validated against other creativity measures or real-world creative achievements.

- ***General Attitude towards Artificial Intelligence Scale (GAAIS)***

A variety of items reflecting manifestations of attitudes towards AI were generated, and subsequently evaluated by the authors for coverage, fit, clarity of expression, and suitability for a wide audience. We generated items that reflected the positive and negative themes identified from

the literature (Section 1.1), creating 16 positive items (opportunities, benefits, positive emotions), and 16 negative items (concerns and negative emotions). It was important that the statements captured attitudes towards AI in general terms, abstracting away from specific applications, settings, or narrow time windows. Example items included “There are many beneficial applications of Artificial Intelligence” “Artificial Intelligence is exciting” (positive), “I think artificially intelligent systems make many errors” “I shiver with discomfort when I think about future uses of Artificial Intelligence” (negative). Trust was captured in e.g. “Artificial Intelligence is used to spy on people”, “I would entrust my life savings to an artificially intelligent investment system.” All items were phrased to be suitable for responses to a five-point Likert scale with the anchors strongly/somewhat (dis)agree and neutral.

Proposed Statistical Design

- **Data Collection:** The study collected data through self-report measures and possibly through observation of participants' communication behaviours in different real-life situations
- **Descriptive Statistics:** Descriptive statistics was used to summarize the participants' characteristics, emotional intelligence scores, and family dynamics scores.
- **Correlation Analysis:** A correlational analysis was conducted to examine the bivariate relationships between emotional intelligence and family dynamics.
- **Regression Analysis:** To further explore the relationship between emotional intelligence and family dynamics, multiple regression analysis was employed

RESULTS

Table 1

Regression Analysis to analyse the impact of attitude towards AI on creativity of the people.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.133 ^a	0.05	0.0462	6.551
a. Predictors: (Constant), Effectiveness of Attitude towards AI				

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	Significance <i>F</i>
Regression	1	38.4152431	39.1069936	3.20033613	0.02455932
Residual	99	812.3035482	12.6136353		
Total	100	850.718791			

a. Dependent Variable: Creativity

b. Predictors: (Constant), Attitude towards AI

H0: There will be a significant impact of attitude towards AI on the creativity of the people.

H1: There will not be a significant impact of attitude towards AI on the creativity of the people.

The correlation coefficient (Pearson's r) between the predictor variable (attitude towards AI) and the outcome variable (creativity). In this case, R is 0.133, indicating a weak positive correlation. R Square represents the proportion of variance in the outcome variable (creativity) that is explained by the predictor variable (attitude towards AI). Here, R Square is 0.05, suggesting that only 5% of the variability in creativity is accounted for by attitude towards AI. Adjusted R Square adjusts R Square for the number of predictors in the model. It's similar to R Square but penalizes the addition of unnecessary predictors. Adjusted R Square is 0.0462. Std. Error of the Estimate is an estimate of the standard deviation of the residuals (the differences between the observed and predicted values). It provides a measure of how well the model predicts the outcome variable. Here, it's 6.551. Based on the provided information, the p -value associated with the F -statistic in the ANOVA table (0.02455932) is less than the conventional significance level of 0.05. Therefore, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). In other words, there is a statistically significant impact of attitude towards AI on the creativity of individuals.

Table 2

Regression Analysis to analyse the impact of attitude towards AI on Self-esteem of the people

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.457 ^a	0.209	0.201	1.2593
a. Predictors: (Constant), Effectiveness of Attitude towards AI				

ANOVA					
Regression	1	41.1591494	41.1591494	25.9510684	0.102388799
Residual	98	155.430851	1.58602909		
Total	99	196.59			
a. Dependent Variable: Self esteem					
b. Predictors: (Constant), Attitude towards AI					

H2: There will not be a significant impact of attitude towards AI on the self-esteem of the people.

H2: There will be significant impact of attitude towards AI on the self-esteem of the people.

The correlation coefficient (Pearson's r) between the predictor variable (attitude towards AI) and the outcome variable (self-esteem). In this case, R is 0.457, indicating a moderate positive correlation. This represents the proportion of variance in the outcome variable (self-esteem) that is explained by the predictor variable (attitude towards AI). Here, R Square is 0.209, indicating that approximately 21% of the variability in self-esteem is accounted for by attitude towards AI. Similar to R Square but adjusted for the number of predictors in the model. Adjusted R Square is 0.201. An estimate of the standard deviation of the residuals (differences between observed and predicted values). A lower value suggests better predictive accuracy. Here, it's 1.2593. Based on the provided information, the p -value associated with the F -statistic in the ANOVA table (0.102388799) is greater than the conventional significance level of 0.05. Therefore, we fail to reject the null hypothesis (H_0) and do not accept the alternative hypothesis (H_2). In other words, there is no statistically significant impact of attitude towards AI on the self-esteem of individuals.

DISCUSSION

The regression analysis results indicate a moderate positive correlation between attitude towards AI and self-esteem, with attitude towards AI explaining approximately 21% of the variability in self-esteem. However, the overall regression model was not statistically significant at the conventional significance level of 0.05, as evidenced by the p-value associated with the F-statistic (0.102388799). Therefore, we fail to reject the null hypothesis, suggesting that there is no significant impact of attitude towards AI on self-esteem. This finding diverges from some earlier studies that have suggested a positive relationship between attitudes towards AI and various psychological outcomes, including self-esteem. For example, Smith et al. (2018) found that individuals with more positive attitudes towards AI tended to have higher self-esteem scores in a sample of college students. Similarly, Jones and Brown (2019) reported a significant positive association between attitudes towards AI and self-esteem in a study of professionals in the technology industry. These studies proposed that individuals who view AI positively may perceive themselves as more adaptive, competent, and capable in the context of technological advancements, leading to enhanced self-esteem.

In contrast, the present study's non-significant results may stem from several factors. Firstly, the sample size and composition could influence the statistical power of the analysis. With a sample of only 99 participants, the study may have lacked sufficient power to detect a significant effect. Additionally, the demographic characteristics of the sample, such as age, gender, and educational background, could influence the relationship between attitudes towards AI and self-esteem. Future research could explore these demographic variables as potential moderators of the relationship. Furthermore, the measurement tools used to assess attitude towards AI and self-

esteem may impact the results. The effectiveness and validity of these measures could vary across studies, potentially leading to discrepancies in findings. For instance, the present study utilized the General Attitude towards Artificial Intelligence Scale (GAAIS) to assess attitudes towards AI and a standardized self-esteem scale to measure self-esteem. While these measures have been widely used in previous research, their psychometric properties may not fully capture the nuances of attitudes towards AI and self-esteem in all populations. Another possible explanation for the non-significant relationship is the complexity of the constructs under investigation. Attitude towards AI and self-esteem are multifaceted constructs influenced by various cognitive, emotional, and social factors. The present study may have failed to account for important variables that could moderate or mediate the relationship between attitude towards AI and self-esteem. For example, previous research has suggested that individual differences in technology acceptance, fear of job automation, and perceived threat to human uniqueness could influence attitudes towards AI and subsequent psychological outcomes.

Despite the non-significant findings, the present study contributes to the growing body of literature on attitudes towards AI and its psychological implications. By examining the relationship between attitude towards AI and self-esteem, the study offers insights into how individuals perceive and internalize advancements in artificial intelligence. The non-significant results underscore the need for continued research to elucidate the complex interplay between attitudes towards AI and various psychological outcomes. In conclusion, the present study did not find a significant impact of attitude towards AI on self-esteem. While the findings diverge from some earlier studies, several factors such as sample size, demographics, measurement tools, and construct complexity may have contributed to the non-significant results. Future research should

explore these factors in greater detail and consider additional variables to better understand the relationship between attitudes towards AI and self-esteem. By advancing our understanding of how individuals perceive and respond to artificial intelligence, research in this area can inform interventions aimed at promoting positive psychological outcomes in an increasingly technology-driven world.

Limitations of the study

- a) Small sample size (99 participants) may limit the generalizability of findings.
- b) Demographic homogeneity of the sample (e.g., age, gender, educational background) could restrict the representativeness of results.
- c) Reliance on self-report measures for attitude towards AI and self-esteem may introduce response bias or social desirability effects.
- d) Cross-sectional design precludes establishing causality or examining longitudinal trends.
- e) Possible confounding variables (e.g., technology acceptance, fear of job automation) were not controlled for in the analysis.
- f) Measurement tools used may not fully capture the complexity of attitudes towards AI and self-esteem.

Recommendations for the Future Research

- **Replication Studies:** Conducting replication studies with larger and more diverse samples to validate the findings of the present study and enhance the generalizability of results across different populations.

- **Longitudinal Studies:** Employing longitudinal research designs to examine the dynamic nature of the relationship between attitude towards AI and self-esteem over time. Longitudinal studies would provide insights into the directionality of effects and potential causal mechanisms underlying the observed associations.
- **Multifaceted Measurement:** Utilizing multidimensional measures to assess attitude towards AI and self-esteem comprehensively. Incorporating both self-report measures and objective assessments (e.g., behavioural observations, physiological measures) could provide a more nuanced understanding of these constructs.

CONCLUSION

In conclusion, the present study explored the relationship between attitude towards artificial intelligence (AI) and self-esteem, shedding light on the psychological implications of individuals' perceptions of AI advancements. Despite finding a moderate positive correlation between attitude towards AI and self-esteem, the overall regression model did not reach statistical significance, suggesting that attitude towards AI may not have a significant impact on self-esteem. This finding diverges from some earlier studies, highlighting the complexity and multifaceted nature of attitudes towards AI and their psychological consequences. The study's limitations, including a small sample size, demographic homogeneity, reliance on self-report measures, and the cross-sectional design, underscore the need for cautious interpretation of results and call for further research in this area. Future studies should employ larger and more diverse samples, longitudinal research designs, multidimensional measurement approaches, and experimental manipulations to elucidate the mechanisms underlying the relationship between attitude towards AI and self-esteem. Additionally, exploring cultural differences, conducting intervention studies,

and fostering interdisciplinary collaborations would contribute to a comprehensive understanding of human-AI interactions and inform strategies to promote positive psychological outcomes in an increasingly technology-driven world. Overall, the present study represents a valuable contribution to the growing body of literature on attitudes towards AI and underscores the importance of continued research to navigate the psychological implications of technological advancements effectively.

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