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Original Article

EFFECT OF ATTITUDE TOWARDS AI ON HUMAN AI RELATIONSHIP AMONG UNIVERSITY STUDENTS

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ABSTRACT

Attitude toward AI is considered foundational for developing Human-AI relationships. Positive attitude reflects perceived utility and excitement, while negative attitude reflects concerns about ethics, privacy, and risks. The study aimed to examine the effect of attitude toward generative AI on Human-AI relationship in university students. Cross-sectional survey research design was used. Sample comprised of 300 university students (150 males and 150 females) selected through convenient sampling technique. Measures included General Attitude toward AI Scale (GAAIS) by Schepman and Rodway (32 items, Positive α=.84, Negative α=.73), Short Trust in Automation Scale (S-TIAS) by McGrath et al. (3 items, α=.88), and Experiences in Human-AI Relationships Scale (EHARS) by Yang and Oshio (7 items). Correlation analysis showed positive attitude was negatively correlated with negative attitude and positively with Human-AI relationship. Negative attitude was negatively correlated with Human-AI relationship. Regression model was significant Positive attitude did not significantly predict Human-AI relationship thus H1 was not supported. Negative attitude negatively predicted positively predicted human AI relationship. Males scored significantly higher than females on positive attitude and Human-AI relationship.

I. INTRODUCTION

Attitudes toward AI represent the foundation of human AI relationships because they influence how individuals perceive, evaluate, and respond to AI technologies. Attitudes encompass both positive and negative evaluations regarding AI's usefulness, benefits, risks, and societal consequences (Schepman & Rodway, 2020). Positive attitudes toward AI are associated with perceptions of improved performance, efficiency, innovation, and opportunities, whereas negative attitudes involve concerns regarding ethical issues, errors, privacy, and potential social harms Research suggests that individuals with favorable attitudes toward AI are more willing to engage with AI systems, adopt AI-based technologies, and integrate them into their daily activities (Makridakis, 2017; Anderson et al., 2018; Schepman & Rodway, 2020). Conversely, negative attitudes may reduce acceptance and usage of AI technologies. Therefore, attitudes toward AI serve as the initial psychological gateway through which individuals decide whether to engage with AI systems, making them a crucial predictor of subsequent human AI interactions and relationship formation. Attitudes towards artificial intelligence, as defined by Schepman and Rodway (2020), are evaluations and emotional reactions of people regarding the effect of AI technologies on society and life. The authors also state that attitudes towards artificial intelligence are defined as perceptions of people concerning artificial intelligence, which include the positive and negative outcomes of AI's development and application. Similarly, as per Araujo et al. (2020), attitudes towards AI are regarded as the acceptance or non-acceptance level of an individual towards AI technologies depending on perceptions about their usefulness, reliability, and threats.

Also, Fast and Horvitz (2017) defined attitudes towards AI as the emotions and beliefs held by individuals about intelligent machines and their growing importance in human decision making and activities.

The concept of Positive Attitudes towards Artificial Intelligence includes people's positive evaluation of AI with regard to their views on its usefulness, economic advantages, enhanced performance, desire for AI implementation into daily activities, and feelings such as admiration (Deng et al., 2020). This dimension reflects beliefs that AI can benefit individuals and society and contribute positively to human wellbeing (Schepman & Rodway, 2020). The authors state that the Positive GAAIS measures "positive attitudes towards AI, including perceptions of utility (e.g., economic opportunities, improved performance), desired use (e.g., at work), and positive emotions (e.g., excitement, being impressed) (Muir & Moray, 1996). Negative Attitudes toward Artificial Intelligence refer to concerns and apprehensions regarding AI, including fears about unethical use, errors in AI systems, loss of human control, privacy violations, surveillance, and negative emotional reactions such as discomfort, perceiving AI as sinister, or viewing it as dangerous. This dimension also incorporates concerns regarding explainability, controllability, trust, and the ethical behavior of organizations using AI (EU, 2020; Schmidt et al., 2020; Stanton & Jensen, 2021; Ikkatai et al., 2022; Stephanidis et al., 2019). The authors describe the Negative GAAIS as measuring "concerns about AI (e.g., unethica use, making errors) and negative emotions (e.g., discomfort, finding AI sinister).

Developed by Fred Davis in 1989, TAM proposes that an individual's attitude toward a technology is determined primarily by Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). According to this model, people develop positive attitudes toward AI when they believe it can improve their performance and is easy to use. TAM has been extensively applied to understand acceptance of AI-powered systems, chatbots, virtual assistants, and automated decision-making technologies. The UTAUT model was proposed by Viswanath Venkatesh and colleagues in 2003. It builds on TAM by incorporating social and organizational dimensions. According to the theory, attitudes and intentions towards AI depend on the following components: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. Venkatesh et al. (2003). Formation of a Human AI Relationship always starts with the attitude of an individual towards AI. The attitude of individuals towards AI is defined as the general evaluative beliefs, feelings, and dispositions of people regarding AI technologies (Schepman & Rodway, 2020). People having positive attitude's view AI technologies as beneficial, useful, and capable of enhancing their lives. Such an attitude results in enhanced acceptance of and interaction with AI. Positivity results in a high degree of willingness of the user to try out new AI technologies, integrate them in their routine, and engage in them over time. As reported by Schepman and Rodway (2020), individuals having a positive attitude towards AI exhibit more acceptance and resistance to AI.

Rationale of the Study

Artificial Intelligence (AI) has emerged as one of the most influential elements of modern society, shaping the ways in which individuals communicate, learn, work, make decisions, and seek support. Technologies such as ChatGPT, virtual assistants, recommendation systems, and intelligent chatbots are no longer used solely for task execution; they are increasingly serving as companions, advisors, and sources of both emotional and informational support. As AI systems become more advanced and human-like, the nature of human-AI interaction is shifting from mere technology use to the formation of Human-AI Relationships (Yang & Oshio, 2025). Recent evidence indicates that individuals tend to perceive AI systems as social entities rather than simply mechanical tools. Previous researchers have examined constructs such as attitudes toward AI in relation to the development of Human-AI relationships. Research demonstrates that individuals holding positive attitudes toward AI are more likely to accept AI and show willingness to interact with it (Schepman & Rodway, 2020). The growing integration of AI technologies highlights a critical need to investigate these relationships through a psychological lens. Yang and Oshio (2025) proposed that attachment theories can be applied to understand Human-AI Relationships, as AI systems function as a secure base and safe haven that offer comfort, protection, and guidance. Therefore, understanding the factors that contribute to positive and effective human-AI relations will help researchers, psychologists, educators, and technology developers to design AI systems that are beneficial for individuals while minimizing potential risks associated with dependency. Indeed, as noted in previous literature, AI dependency may impair analytical skills and independent decision-making (Morales-García et al., 2024). Prior research in this area has largely focused on individual variables without examining their interactions. The present study aims to illuminate the

interconnections among different variables to provide a more comprehensive understanding of the dynamics underlying the development of Human-AI relationships.

Objective

1. To find out the effect of attitude towards Generative AI on human AI relationship in universities students.
2. To assess gender differences with respect to positive attitude toward AI, negative attitude toward AI, trust in AI and human-AI relationship.

Hypotheses

1. Predicts positive attitude toward generative AI positively predicts human AI Relationship in university students.
2. Negative attitude toward generative AI negatively predicts human AI relationship in university students.
3. There will be significant gender differences in positive attitude toward AI, negative attitude toward AI and human-AI relationship.

II. METHOD

Participants

A cross-sectional survey research design was employed in the present study to evaluate the variables of interest at one point in time within the sampled population. The sample for the present study comprised 300 university students with an equal gender distribution of males (n = 150) and females (n = 150). All participants were presently enrolled at the university level and voluntarily provided consent to participate in the study. The respondents belonged to diverse academic disciplines and socioeconomic backgrounds, thereby enhancing the representativeness of the sample. Data were collected through a convenience sampling technique, wherein participants were approached based on their accessibility and relevance to the research objectives.

Measures

[I] General attitude toward Artificial Intelligence Scale was used to measure the positive and negative attitude towards artificial intelligence. This scale is consisted of 32 items. It is consisted of two subscales and equal number of items are included in the subscales. The scores of positive attitudes towards AI ranges from 16 to 80 and likewise in the negative attitudes towards AI. The response format used a 5-point Likert-type scale including Strongly Disagree=1 to Strongly Agree=5. Both of the subscales have high internal consistency including positive attitude toward AI =.88 and negative attitude towards AI =0.82. The scale is a valid measure of general attitude towards artificial intelligence. **[II]** According to Yang and Oshio (2025), human AI relationship refers to the emotional and psychological bond that individuals form with artificial intelligence systems, which is characterized by attachment-related experiences such as attachment anxiety and attachment avoidance toward AI. Human AI relationship indicates the degree to which individuals seek emotional reassurance, intimacy, and support, or maintain emotional distance during their interactions with AI. In the present study, human AI relationship was assessed using the Experiences in Human AI Relationships Scale (EHARS) developed by Yang and Oshio (2025). The scale comprises 7 items measuring AI attachment anxiety and AI attachment avoidance.

Procedure

In the present study, data were collected from university students. Prior to the commencement of data collection, formal permission was obtained from the concerned university authorities. Data were gathered during regular university working hours. Participants were briefed regarding the objectives of the study and were asked about their willingness to participate. Those who agreed to participate were requested to sign an informed consent form before completing the questionnaires. Participants were assured that the data would be utilized solely for research purposes and that their responses would remain confidential and anonymous. The researcher remained available throughout the data collection process to address any queries raised by the participants before, during, and after the procedure. Upon completion of data collection, the researcher expressed gratitude to all participants for their valuable cooperation.

III. RESULTS

Table I: Psychometric Properties for Scales

Scales	*M*	*SD*	Range	Cronbach's α
Positive Attitude toward Generative AI	41.07	8.18	12-60	.84
Negative Attitude toward Generative AI	22.83	5.75	8-55	.72
Human AI Relation	27.07	8.58	7-48	.83

Table 1 shows the psychometric properties of the scales (N = 300). All three scales demonstrated acceptable to good reliability. For positive attitude toward generative AI, M = 41.07, SD = 8.18, range = 12-60, α = .84. For negative attitude toward generative AI, M = 22.83, SD = 5.75, range = 8-55, α = .72. For human AI relation, M = 27.07, SD = 8.58, range = 7-48, α = .83. Overall, Cronbach's α values are above .70, indicating good internal consistency for all scales.

Table II: Pearson Correlation of between Positive attitude or Negative Attitude and Human AI relationship

Variable	1	2	3
1. Positive Attitude	--		
2. Negative Attitude	-.32***	--	
3. Human AI Relations	.20***	-.38***	--

Results revealed that positive attitude toward generative AI was significantly negatively correlated with negative attitude toward generative AI (r = -.32, p < .001), and significantly positively correlated with Human AI relationship (r = .20, p < .001). Negative attitude toward generative AI was significantly negatively correlated with Human AI relationship (r = -.37, p < .001).

Table III: Regression Coefficients of Positive Attitude, Negative Attitude, AI Anthropomorphism, Trust, Reliance, and Dependence Predicting Human AI Relationship

Variables	*B*	*SE*	*t*	*p*	95% *CI*
Constant	11.96	4.17	2.87	.005	[3.73, 20.15]
Positive Attitude	-.03	.07	-1.51	.608	[-.17, .10]
Negative Attitude	-.28	.08	-3.55	.001	[-.44, -.12]

The results of the multiple regression analysis examining the effects of positive attitude, negative attitude on human AI relationship. The overall regression model was statistically significant, $F(6, 293) = 29.27$, $p < .001$, indicating that the predictor variables jointly explained a significant proportion of variance in human AI relationship. The model explained 37.5% of the variance in human AI relationship ($R^2 = .375$; Adjusted $R^2 = .37$). Negative attitude ($\beta = -.19$, $p = .001$) has significantly predicted human AI relationships. However, positive attitude ($\beta = -.03$, 1, $p = .608$) did not significantly predict human AI relationships.

Table IV: Mean Comparison of Male and Female Participants on Study Variables

	Males		Females				
Variables	*M*	*SD*	*M*	*SD*	*t*(298)	*p*	Cohen's d
Positive Attitude toward Generative AI	42.23	8.77	39.77	7.27	2.63	.009	0.31
Negative Attitude toward Generative AI	22.22	6.44	23.51	4.80	1.96	.052	0.23
Human AI relationship	28.42	8.95	25.58	7.93	2.90	.004	0.34

The findings revealed non-significant gender differences on negative attitude toward generative AI with t(298) = 1.96, p = .052. The Cohen's d was .23 (<.50) which indicated small effect size. Results indicated significant mean differences across gender on positive attitude toward generative AI with t(298) = 2.63, p = .009, and on Human AI relationship with t(298) = 2.90, p = .004. The Cohen's d was 0.31 and 0.34 respectively, indicating small effect size.

IV.DISCUSSION

The first hypothesis "Positive attitude toward generative AI positively predicts Human AI Relationship in university students" was not supported in the present study. Although positive attitude toward generative AI was positively correlated with Human-AI relationship, it did not emerge as a significant predictor in the regression analysis ($\beta = -.03$, $p = .608$). The participants were university students who belong to a highly educated and technology-exposed population. Because many students are already familiar with AI technologies, positive attitudes toward AI may have become relatively common among them. According to the Technology Acceptance Model proposed by Davis, (1989), positive attitudes toward technology primarily influence users' intention to adopt and use a system rather than their emotional attachment or relational engagement with it. Similarly, Venkatesh et al., (2003) suggested that positive perceptions of technology increase acceptance and usage behavior, but other psychological factors may be more important in determining long-term engagement. The insignificant result might also be because students see the generative AI technology as a learning tool and not as an entity with which they have any kind of relationship. Although they might appreciate its effectiveness and efficiencies, such assessments might be not enough for a closer relation between humans and AI. The reason for this is that according to Schepman and Rodway, (2020), positive attitudes towards AI are associated with increased acceptability but do not guarantee social and emotional relations with the technology. The second hypothesis, "negative attitude toward generative AI negatively predicts Human AI Relationship in university students" ($\beta = -.18$, $p < .001$), was confirmed in the present study. This finding suggests that students with unfavorable attitudes toward generative AI are less likely to develop positive relationships with AI systems. Negative perceptions of AI may reduce users' trust, acceptance, and willingness to engage with AI technologies. These findings are supported (Venkatesh et al. 2003), who suggested that negative perceptions of technology reduce users' acceptance and intention to use technological systems, ultimately limiting interaction and engagement.

V. CONCLUSION

The present study aimed to examine the effect of attitudes toward generative AI on the Human-AI relationship among university students. The findings showed that positive attitude toward generative AI was positively correlated with Human AI relationship while negative attitude was negatively correlated with it. However, regression analysis revealed that only negative attitude significantly and negatively predicted Human AI relationship, whereas positive attitude did not emerge as a significant predictor. This indicates that perceiving AI as useful and exciting is not enough to develop an emotional bond with AI, but having concerns, fears, and negative perceptions about AI significantly weakens the formation of a Human AI relationship. Regarding gender differences, male students scored significantly higher than female students on both positive attitude toward AI and Human-AI relationship, suggesting that males have greater acceptance, enthusiasm, and relational engagement with AI technologies. Overall, the study highlights that in order to foster healthy and effective Human-AI relationships in educational settings, it is more important to reduce negative attitudes, ethical concerns, and apprehensions about AI rather than just promoting its positive aspects. Addressing these concerns can help in developing AI systems that are perceived as trustworthy, supportive, and beneficial without creating excessive dependency.

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