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ARTIFICIAL INTELLIGENCE ON STUDENT SATISFACTION IN HIGHER EDUCATION: THE ROLE OF POSITIVE ATTITUDE, CONTINUOUS USE INTENTION, AND PERCEIVED USEFULNESS

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Abstract

Artificial intelligence (AI) has emerged as a key tool in higher education, transforming the way students engage with knowledge. This study aims to analyze how positive attitude, intention of continuous use, and perceived usefulness of AI influence undergraduate student satisfaction. A quantitative, correlational methodology was employed, using a non-experimental cross-sectional design. Data were collected from 201 students through validated questionnaires at a private university in Arequipa, Peru. Partial least squares structural equation modeling (PLS-SEM) was used for data analysis, allowing the identification of relationships among study variables. The findings reveal that a positive attitude toward AI significantly influences the intention of continuous use ($\beta = 0.444$, $p < 0.001$), although no direct effect on satisfaction was observed ($\beta = 0.038$, $p = 0.542$). Conversely, the intention of continuous use is positively associated with satisfaction ($\beta = 0.365$, $p < 0.001$), suggesting that students who are more inclined to use AI experience higher levels of satisfaction. Additionally, the perceived usefulness of AI plays a fundamental role in shaping positive attitudes ($\beta = 0.580$, $p < 0.001$) and fostering the intention of continuous use ($\beta = 0.274$, $p < 0.001$), while also contributing significantly to satisfaction ($\beta = 0.545$, $p < 0.001$). These results highlight the importance of fostering a favorable perception of AI's usefulness to enhance both students' intention of use and their overall satisfaction with this technology.

Keywords **–** Artificial intelligence, Positive attitude, Continuous usage intention, Perceived usefulness, Satisfaction.

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1. Introduction

The growing interest in artificial intelligence (AI) stems from its transformative impact across multiple sectors. AI is revolutionizing processes such as teaching and learning, student interaction with knowledge, business activity optimization, healthcare improvement, industrial process automation, and the creation of more immersive entertainment experiences (Chatterjee & Bhattacharjee, 2020). Numerous studies have explored the factors influencing AI adoption and perception in these contexts, identifying key elements such as usage intention, perceived usefulness, positive and negative attitudes, and satisfaction. These factors encompass continuous use, motivation, perceived benefits, operational efficiency, diagnostic accuracy, and user satisfaction (Granić & Marangunić, 2019).

1.1. Positive Attitudes Toward AI

When individuals interact with AI systems, emotional responses are triggered, which influence their level of satisfaction. AI technologies elicit both positive and negative emotions among users (Pantano & Scarpi, 2022). For instance, while consumers tend to hold favorable opinions of both human-created and AI-generated advertisements, AI-generated ads often evoke less appreciation or positive sentiment (Bakpayev, Baek, van Esch & Yoon, 2022). In the educational domain, university students generally exhibit positive attitudes toward generative AI technologies (GenAI), such as ChatGPT (Baysha & Resnandari, 2024). However, despite these positive attitudes, concerns persist regarding data ethics and legal regulations (Brandhofer & Tengler, 2024). Factors such as access to technology, digital skills, institutional support, motivation, and positive attitudes toward digital tools significantly influence students' preparedness to adopt these technologies (Oyarvide-Estupiñán, Tenorio, Oyarvide, Oyarvide-Ramírez & Racines, 2024).

Two opposing attitudes toward AI have been identified: on one hand, individuals with positive attitudes believe these technologies could help mitigate current societal challenges; on the other hand, those with negative attitudes fear that AI may exacerbate inequalities and contribute to dehumanization. Emotions play a crucial role in predicting intentions toward human-AI interaction, even more so than trust (Yao, Holopainen & Laukkanen, 2024). In this regard, anthropomorphic chatbots have been reported to elicit positive emotions (Tran, Nguyen, Nguyen, Nguyen, Vu, Zhang et al., 2021). While some consumers exhibit negative attitudes toward AI applications in marketing, companies and marketers strive to foster positive sentiments (Stein, Messingschlager, Gnambs, Hutmacher & Appel, 2024).

Finally, AI applications can enrich educational experiences and enhance overall course satisfaction by providing tailored instructional support that meets individual needs, thereby promoting more effective learning. Positive attitudes toward AI are directly linked to higher satisfaction in academic courses (Rodway & Schepman, 2023).

1.2. Perceived Usefulness of AI

Usefulness is a critical concept in predicting user behavior and is defined as the degree to which an individual believes that using a particular system will enhance their job performance (Davis, 1989). The perceived usefulness of AI extends across various sectors, particularly in healthcare and marketing, where it is acknowledged for improving efficiency, decision-making, and innovation (Panagoulias, Virvou & Tsihrintzis, 2023). In the context of visual consumption among online application users, the perceived ease of use of an AI application positively influences perceived usefulness, perceived enjoyment, and the intention to watch movies online (Basuki, Tarigan, Siagian, Limanta, Setiawan & Mochtar, 2022). A survey revealed that the perceived ease of use and usefulness of AI significantly contribute to improving patient outcomes in the healthcare sector by reducing errors and enhancing accessibility (Chaieb, Garrouch & Al-Ali, 2023). Specific cases demonstrate that AI has increased efficiency, reduced service costs, and enhanced customer experience, underscoring its potential benefits (Rane, Choudhary & Rane, 2024). Path analysis has confirmed that trust significantly affects the intention to use AI, mediated by perceived usefulness and participants' attitudes toward AI technologies (Choung, David & Ross, 2023).

Further findings indicate a significant positive relationship between the perception of AI's usefulness and innovation in marketing, suggesting that efforts should focus on overall marketing innovation and the quality of information provided by AI to ensure sustainability (Sadriwala & Sadriwala, 2022). Perceived usefulness has a significant positive impact on AI adoption, particularly among Generation Z consumers (Suresh, Lee Yong, Shwu Chyi & Musa, 2023). Existing literature also supports that perceived usefulness positively influences attitudes and behavioral intentions in the context of new media platform usage (Zhang, Meng, Chen, Yang & Zhao, 2021).

1.3. Continuous Usage Intention

Continuous Usage Intention is evident across various fields, including academic, professional, and institutional settings, with key factors influencing its sustained adoption in different contexts. In the medical field, discussions have centered on how Continuous Usage Intention can impact long-term medical decision-making, particularly after professionals have experienced its benefits (García-Vigil, 2021). In the business sector, factors such as perceived value, facilitating conditions, hedonic motivation, and social influence play a significant role in the decision to persistently use AI for tasks such as image generation (Maican, Sumedrea, Tecau, Nichifor, Chitu, Lixandroiu et al., 2023). Similarly, in medical diagnostics, social influence is a critical factor in Continuous Usage Intention for AI-based systems, highlighting the importance of opinions and social pressures in sustaining their use (Tran et al., 2021).

In the context of design, although perceived ease of use is traditionally a relevant factor, it has not proven to be decisive in designers' Continuous Usage Intention for AI-powered drawing tools over time (Fan & Jiang, 2024). However, other studies reveal that perceived ease of use (PEU) and perceived usefulness positively influence Continuous Usage Intention for AI chatbots, alongside self-directed learning with technology (SDLT), which impacts both the intention to continue using these systems and their long-term adoption (Esiyok, Gokcearslan & Kucukergin, 2024). In healthcare, there is a strong behavioral Continuous Usage Intention for AI-assisted diagnostics across all levels of care, with key constructs such as task-technology fit, perceived privacy, performance expectancy, and social influence being determinants of sustained use (Uymaz, Uymaz & Akgül, 2024). Likewise, across various industries, factors such as perceived usefulness, performance expectations, attitudes, trust, and effort expectancy positively predict Continuous Usage Intention for AI (Kelly, Kaye & Oviedo-Trespalacios, 2023). Additional studies show that trust in AI also has a significant correlation with Continuous Usage Intention (Brandhofer & Tengler, 2024).

Finally, in the field of generative AI design (AIGC), performance expectancy, effort expectancy, social influence, and facilitating conditions increase the willingness for Continuous Usage Intention, while anxiety and perceived risk negatively impact this intention (Li, 2024).

1.4. Satisfaction with AI

Satisfaction with artificial intelligence (SAT) in various fields, such as education, marketing, and commerce, depends on several key factors. In the educational domain, students' satisfaction with AI tools is influenced by content quality, emotional well-being, and the perceived usefulness of these tools (Almufarreh, 2024). Additionally, the integration of digital and AI tools is essential for developing competitive professional skills (Divekar, Gonzalez, Guerra & Boos, 2024). Factors such as accuracy, timeliness, and convenience of information also play a crucial role in satisfaction with tools like ChatGPT (Chung-Jen, Silalahi, I-Tung, Thi-Thanh-Phuong, Javanisa-Eunike & Jargalsaikhan, 2024). Furthermore, generative AI provides personalized content that addresses both students' immediate classroom needs and their long-term goals, such as skill development for the job market (Almufarreh, 2024). However, a study indicates that ChatGPT lacks emotional capabilities and an understanding of human tone, which may result in cold and superficial responses. This limitation can negatively affect user satisfaction, as users often seek more human-like and empathetic interactions (Liu, Geertshuis & Grainger, 2020).

In the marketing field, customer satisfaction with AI services is influenced by service quality, algorithm transparency, and recommendation effectiveness, all of which impact user trust and overall satisfaction (Rahmania, Zahra, Jonas, Erliyani & Aprila, 2023). Similarly, in commerce, consumers value the neutrality and continuous availability of AI-based chatbots, although some remain resistant due to the perception that these tools are not as effective or fluent as human agents (Li, Pan, Xin & Deng, 2020). In the design field, AI has transformed drawing tools into creative and social platforms, enhancing designers' satisfaction by positively influencing their intrinsic motivations and experimental interactions (Fan & Jiang, 2024). Satisfaction and positive experiences reinforce technology acceptance, motivating users to continue using it, particularly in tools like ChatGPT, although there is still room for improvement in the quality of interactions (Marangunić & Granić, 2015).

Based on the Technology Acceptance Model (TAM) proposed by Davis (1989), this study assumes that users' behavioral intentions and actual use of technology depend on perceived utility and perceived ease of use. The model was adapted to the context of Generative Artificial Intelligence (GAI) in higher education, incorporating satisfaction and the intention of continuous use as key elements. Figure 1 illustrates the theoretical framework that guided the formulation of the study hypotheses.

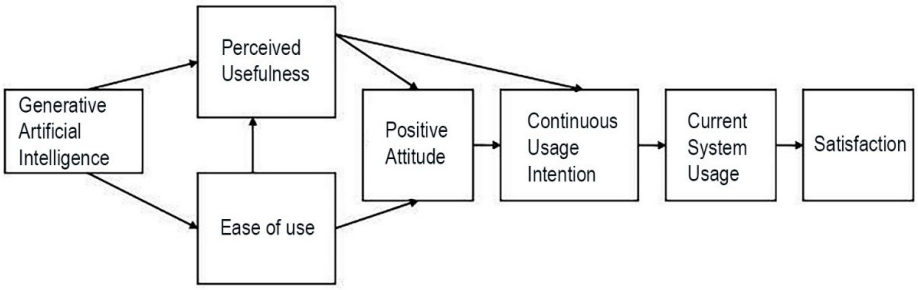

Figure 1. Conceptual model of TAM in the context of generative AI in higher education

The background highlights the multifaceted role of AI in enhancing satisfaction across various fields, emphasizing how different factors influence its acceptance and user perceptions. Based on the above, the following direct hypotheses are proposed:

H1*: A positive attitude has a significant positive effect on Continuous Usage Intention.*

H2: *A positive attitude has a significant positive effect on satisfaction with the use of AI.*

H3: *Continuous Usage Intention has a significant positive effect on satisfaction with the use of AI.*

H4: *The perceived usefulness of AI has a significant positive effect on students' positive attitudes.*

H5*: The perceived usefulness of AI has a significant positive effect on Continuous Usage Intention.*

H6: *The usefulness of artificial intelligence has a significant positive effect on satisfaction with its use.*

The indirect or mediating hypotheses are:

H7: *A positive attitude has a significant indirect positive effect on satisfaction with use through Continuous Usage Intention.*

H8: *The usefulness of artificial intelligence has a significant indirect positive effect on satisfaction with use through positive attitudes and Continuous Usage Intention.*

H9: *The usefulness of artificial intelligence has a significant indirect positive effect on satisfaction with use through Continuous Usage Intention.*

H10: *The usefulness of artificial intelligence has a significant indirect positive effect on Continuous Usage Intention through positive attitudes.*

H11*: The usefulness of artificial intelligence has a non-significant indirect effect on satisfaction with use through positive attitudes.*

Main objective of this study is to analyze how positive attitude, continuous usage intention, and perceived usefulness of artificial intelligence influence student satisfaction in higher education. Specifically, the research seeks to determine both the direct and indirect relationships among these variables through a structural equation modeling approach, thereby contributing to a deeper understanding of the mechanisms that promote students' satisfaction and continuous engagement with AI-based tools in learning contexts.

2. Methodology

2.1. Design: Objectives and Methodological Approach

The research employed a quantitative approach, adopting a non-experimental, cross-sectional design with structural equation modeling. The study examined variables such as positive attitude, intention to use, and perceived usefulness of artificial intelligence (AI) to determine their influence on user satisfaction. A non-probabilistic, purposive sampling method was used, collecting 230 responses, of which 29 were excluded due to lack of variance or incompleteness. The final sample comprised 201 students enrolled in five online distance learning academic programs at a private university in Arequipa, Peru. Participants ranged in age from 18 to over 45 years and were enrolled in the odd semester of the 2024-I academic year.

To measure positive and negative attitudes toward AI, the study utilized the *Initial Validation of the General Attitudes Towards Artificial Intelligence Scale* (Schepman & Rodway, 2020). For variables related to perceived usefulness, continuous usage intention, and satisfaction with AI, the study drew on the following sources: *Exploring the Factors Influencing Continuance Intention to Use AI Drawing Tools: Insights from Designers* (Fan & Jiang, 2024) and *Artificial Intelligence and Continuous Usage Intention: Evidence from a Korean Online Job Information Platform* (Lee, 2020). Based on these sources, a questionnaire was developed with adaptations, consisting of 45 items distributed across the following categories: Positive Attitude (12 items), Intention to Continue Using AI (4 items), Perceived Usefulness of AI (5 items), Ease of Use with AI (4 items), Negative Attitude Toward AI (8 items), and Satisfaction with AI (12 items). Responses were measured using a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

Data collection was conducted over three weeks, with each participant taking approximately 15 to 20 minutes to complete the questionnaire. The survey was administered online via Microsoft Forms, with a link and QR code shared with faculty members of various academic programs, who facilitated student access. The questionnaire included detailed instructions and study objectives to minimize the likelihood of random or rushed responses. Upon completion, the results were exported from Microsoft Forms into a Microsoft Excel template. The dataset was then organized using SPSS 25.0 and imported into PLS-SEM (Partial Least Squares Structural Equation Modeling) for structural equation model analysis. To test the hypotheses, the Bootstrapping technique was implemented with 10,000 resampling iterations, substituting the original sample to estimate the model parameters. The standard error of each estimate was obtained from the standard deviation of the bootstrap-generated values (Henseler, Ringle & Sarstedt, 2015).

The demographic and specialty characteristics of the sample are presented (see Table 1).

The predominance of the conversational AI tool ChatGPT is evident, as 37.8 % of participants reported using it, indicating a strong preference for platforms with conversational interaction due to their accessibility, user-friendly design, and ease of use (see Table 2).

Image-generation tools such as Leonardo AI and Canva also demonstrate significant usage, with adoption rates of 32.8 % and 34.3 %, respectively. This indicates a strong interest in AI-powered visual creation, likely reflecting the growing importance of aesthetics in digital communication and design. Tools like Copilot (9.9 %) and Pixlr (3.5 %) exhibit moderate usage, suggesting that while there is interest in AI-assisted content creation, these tools are less frequently adopted than conversational and generative AI platforms. In contrast, applications such as Gemini (1.5 %), CapCut (1.5 %), Cici (1.0 %),

and Alexa (0.5 %) show very low usage rates. This may indicate that such tools have not yet gained sufficient traction or that participants prefer alternatives more aligned with their academic and personal needs. The diversity of tools highlighted in the table suggests that users are exploring various forms of AI for distinct purposes, ranging from image generation to research and document interaction. This pattern reveals a general curiosity toward AI and a growing willingness to integrate intelligent technologies into academic and daily activities, signaling a positive shift toward the broader adoption of AI in multiple educational domains.

Characteristics	N	%
Sex		
Female	161	80.0
Male	40	20.0
Total	201	100
Age		
Between 18 and 25 years	90	44.8
Between 26 and 35 years	44	21.9
Between 36 and 45 years	39	19.4
Over 45 years	28	13.9
Total	201	100
Academic Programs		
Education	43	21.4
Marketing and Commercial Management	37	18.4
Social Work	61	30.3
Economics and Finance	42	20.9
Accounting	18	9.0
Total	201	100
Geographical Location		
Cusco	16	8.0
Moquegua	38	18.9
Lima	34	16.9
Arequipa	57	28.4
Tacna	14	7.0
Puno	14	7.0
La Libertad	7	3.5
Ancash	8	4.0
Ica	5	2.5
Amazonas	3	1.5
Apurímac	5	2.5
Total	201	100

Table 1. Sample Characteristics

Type of AI	Fr.	%
ChatGPT (OpenAI)	76	37.8
Leonardo AI (for image generation)	66	32.8
Canva (images)	69	34.3
Copilot	20	9.9
Stable Diffusion (images)	13	6.5
Midjourney.com	6	3.0
Pixlr	7	3.5
ChatPDF (for interacting with PDFs)	16	8.0
Perplexity (research)	10	5.0
Gemini	3	1.5
Mónica	4	2.0
Capcut	3	1.5
Cici	2	1.0
Alexa	1	0.5
Google	1	0.5

Table 2. Percentages are calculated based on the total sample size (N = 201)

3. Results

3.1. Measurement Model Evaluation

Before analyzing the Structural Equation Model (SEM) using Partial Least Squares Structural Equation Modeling (PLS-SEM), it is essential to evaluate the quality and reliability of the constructs to ensure that the questionnaire items accurately measure the intended variables (Henseler et al., 2015). For a construct to be considered reliable, both Cronbach's alpha and composite reliability must exceed a threshold of 0.70 (Hair, Howard & Nitzl, 2020).

In this study, the initial model included 45 indicators representing six latent variables. Following confirmatory factor analysis 24 items were removed , and the variables *Easy of Use* and *Negative Attitude* towards AI were excluded. To ensure the construct validity and parsimony of the model, a debugging process was carried out following the recommendations of Hair, Hult, Ringle and Sarstedt (2017). Items with factor loads below 0.70, high cross-loads or redundancy with other indicators were eliminated. As a result, 24 items were eliminated during the confirmatory factor analysis stage. The *Ease of Use* construct presented several items with low factor loads (< 0.60) and theoretical overlap with *Perceived Utility*, while *Negative Attitude* exhibited low reliability (Cronbach's $\alpha < 0.60$) and high collinearity with *Positive Attitude*. These exclusions improved the model's internal consistency and overall fit without compromising content validity.

During the confirmatory factor analysis (CFA), items with low factor loadings (< 0.70), high cross-loadings, or conceptual redundancy were removed to improve the reliability and validity of the measurement model. Two constructs - Ease of Use (EOU) and Negative Attitude toward AI (NA)- were excluded due to poor reliability and lack of discriminant validity. Table 3 summarizes the constructs and the number of items removed, along with the main statistical and theoretical criteria.

After removing these items and constructs, the final model retained four latent variables, *Positive Attitude* (PA), *Continuous Usage Intention* (CUI), *Usefulness of AI* (UAI), and *Satisfaction* (SAT), which were subsequently evaluated for internal consistency and validity. The remaining constructs demonstrated Cronbach's alpha and composite reliability values above 0.70, indicating strong internal consistency (see Table 4). Additionally, an Average Variance Extracted (AVE) greater than 0.50 serves as evidence of good convergent validity (Hair, Sarstedt, Hopkins & Kuppelwieser, 2014). In this study, all constructs achieved an AVE above 0.63, confirming their robustness. Indicator reliability, which assesses the extent to which each item represents the variance of its construct, is evaluated through factor loadings. A factor loading of 0.70 or higher is typically required to ensure adequate reliability (Hair et al., 2017). Discriminant validity

was assessed following established guidelines in the literature. To demonstrate discriminant validity, the Heterotrait-Monotrait Ratio (HTMT) must be below 0.90 (Ringle, Sarstedt, Sinkovics & Sinkovics, 2023). In this study, HTMT values were below 0.83 (see Table 5), confirming sufficient discriminant validity among the constructs in the model.

Construct	Number of Items Removed	Reason for Removal	Statistical / Theoretical Criterion
Ease of Use (EOU)	10	Low factor loadings and conceptual overlap with Perceived Usefulness	Factor loadings < 0.70; redundancy detected in cross-loading analysis
Negative Attitude toward AI (NA)	8	Low internal reliability and high collinearity with Positive Attitude	Cronbach's α < 0.60; VIF > 5; HTMT > 0.90
Perceived Usefulness (UAI)	3	Items not meeting reliability threshold	Factor loadings < 0.70
Positive Attitude (PA)	2	Cross-loadings with Satisfaction construct	Cross-loading > 0.70
Satisfaction (SAT)	1	Redundant content relative to other satisfaction indicators	Conceptual overlap detected
Continuous Usage Intention (CUI)	0	–	–

Table 3. Summary of removed items and exclusion criteria

Construct	Item	Factor Loading	VIF	AVE	Cronbach's Alpha
Continuous Usage Intention	CUI31	0.782	1.424	0.611	0.872
	CUI 32	0.872	2.082		
	CUI 33	0.871	1.989		
Positive Attitude	PA1	0.817	2.210	0.710	0.794
	PA11	0.718	1.610		
	PA2	0.746	1.659		
	PA3	0.845	2.324		
	PA4	0.762	1.830		
	PA5	0.796	2.128		
Satisfaction	SAT34	0.866	3.144	0.693	0.926
	SAT35	0.846	2.915		
	SAT36	0.866	3.058		
	SAT37	0.807	2.404		
	SAT40	0.764	2.082		
	SAT41	0.837	2.662		
	SAT42	0.835	2.535		
Usefulness of AI	UAI21	0.746	1.766	0.691	0.887
	UAI22	0.817	2.189		
	UAI23	0.857	2.804		
	UAI24	0.871	2.679		
	UAI25	0.858	2.576		

Table 4. Factor Loadings and Indicator Reliability

Construct	PA	CUI	SAT	UAI
Heterotrait-Monotrait Ratio (HTMT)				
Positive Attitude (PA)	–			
Continuous Usage Intention (CUI)	0.721	–		
Satisfaction (SAT)	0.639	0.791	–	
Usefulness of AI (UAI)	0.652	0.632	0.834	–
Fornell-Larcker Criterion				
Positive Attitude (PA)	**0.782**			
Continuous Usage Intention (CUI)	0.603	**0.843**		
Satisfaction (SAT)	0.574	0.678	**0.832**	
Usefulness of AI (UAI)	0.580	0.532	0.761	**0.831**

Table 5. Discriminant Validity and Fornell-Larcker Criterion

Additionally, the Fornell-Larcker criterion was applied, which states that the square root of the Average Variance Extracted (AVE) for each construct should exceed the correlations between that construct and the others, thereby confirming discriminant validity (Fornell & Larcker, 1981). In this study, the diagonal values (see Table 5) represent the square root of the AVE and exceed the correlations with other constructs, confirming that all constructs—Positive Attitude, Continuous Usage Intention, Usefulness, and Satisfaction with Use—meet this criterion. This indicates that each construct shares more variance with its own indicators than with those of other constructs, supporting discriminant validity. Another important consideration is the assessment of multicollinearity, which arises when two or more independent variables in a regression model are highly correlated (Hair, Ringle & Sarstedt, 2011). The Variance Inflation Factor (VIF) is commonly used to measure multicollinearity, with values above 10 indicating high multicollinearity and values close to 1 suggesting its absence. In this study, no item exhibited a VIF greater than 3.14 (see Table 4), confirming that multicollinearity is not a concern in this model.

3.2. Structural Model Evaluation

3.2.1. Proposed Model and Hypotheses

The proposed model aims to explore the interrelationships between attitudinal variables, intentions, usefulness, and satisfaction with the use of artificial intelligence among undergraduate students from various programs at a privately managed university in higher education. The model includes four latent constructs, each represented by multiple items or indicators that reflect different dimensions of the studied variables: Positive Attitude (PA), Continuous Usage Intention (CUI), Usefulness of AI (UAI), and Satisfaction with AI (SAT), (see Figure 2).

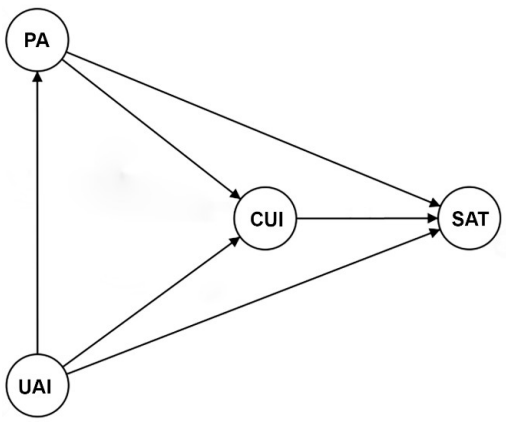

Figure 2. Proposed Model

The proposed model includes six direct relationship hypotheses and five indirect (mediation) hypotheses, as outlined below:

Direct Relationships:

Positive Attitude (PA) → Continuous Usage Intention (CUI).

Positive Attitude (PA) → Satisfaction with AI Use (SAT).

Continuous Usage Intention (CUI) → Satisfaction with AI Use (SAT).

Usefulness of AI (UAI) → Positive Attitude (PA).

Usefulness of AI (UAI) → Continuous Usage Intention (CUI).

Usefulness of AI (UAI) → Satisfaction with AI Use (SAT).

Indirect (Mediated) Relationships:

Positive Attitude (PA) → Continuous Usage Intention (CUI) → Satisfaction with AI Use (SAT).

Usefulness of AI (UAI) → Positive Attitude (PA) → Continuous Usage Intention (CUI) → Satisfaction with AI Use (SAT).

Usefulness of AI (UAI) → Positive Attitude (PA) → Continuous Usage Intention (CUI).

Usefulness of AI (UAI) → Continuous Usage Intention (CUI) → Satisfaction with AI Use (SAT).

Usefulness of AI (UAI) → Positive Attitude (PA) → Satisfaction with AI Use (SAT).

3.2.2. Evaluation of the Structural Model's Explanatory Power

To assess the explanatory power of the structural model, the coefficient of determination (R^2) was employed. The model (see Figure 3) demonstrates strong predictive relevance, with the following interpretations of the R^2 and adjusted R^2 values.

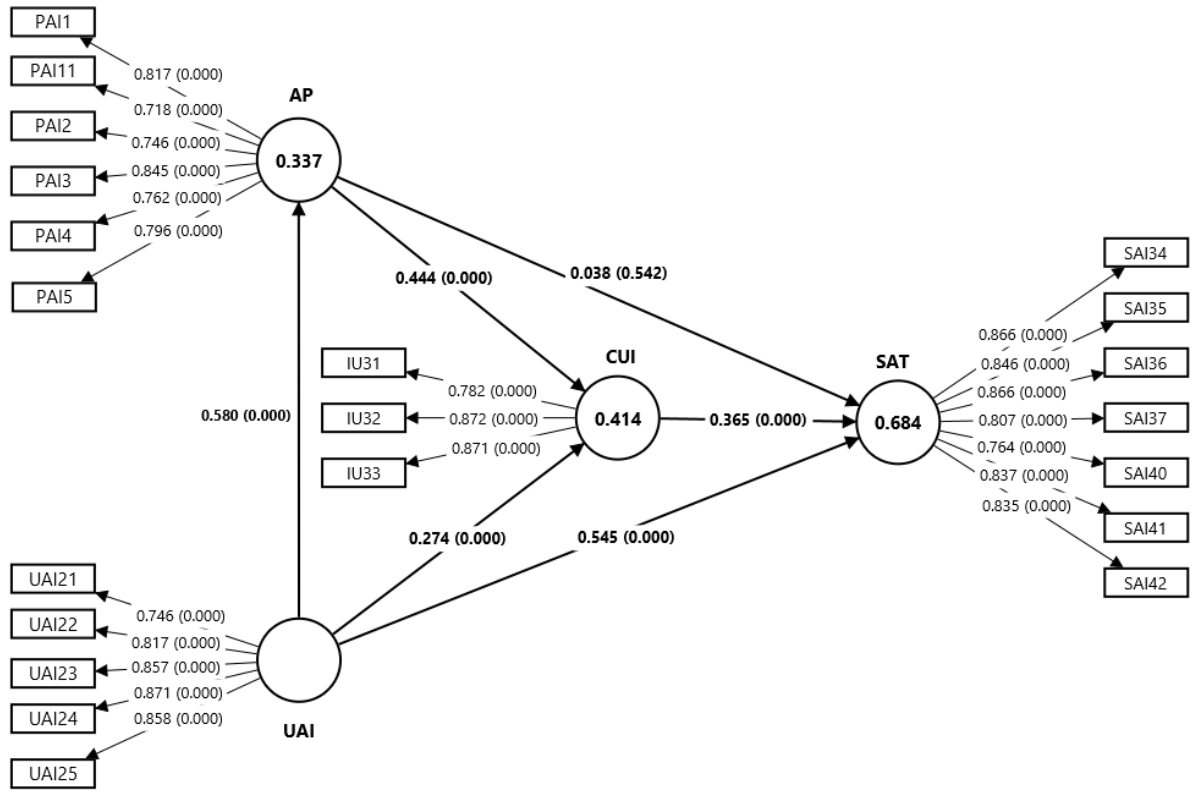

Figure 3. Path coefficients

R^2 values indicate the proportion of variance in the dependent variables (PA, CUI, SAT) explained by the model. PA (Positive Attitude): The model explains 33.7 % of the variance in perceived positive attitudes toward AI use. CUI (Continuous Usage Intention): The model explains 41.4 % of the variance in the intention to use AI continuously. SAT (Satisfaction with AI): The model explains 68.4 % of the variance in user satisfaction with AI. Adjusted R^2 values, which account for the number of predictors in the model, provide a more precise measure:

PA: Adjusted R^2 = 33.3 %.

CUI: Adjusted R^2 = 40.8 %.

SAT: Adjusted R^2 = 67.9 %.

3.2.3. Results of Direct Hypothesis Testing

The results of the direct hypothesis testing in the PLS-SEM analysis reveal significant relationships among the study variables (see Table 6).

Positive Attitude (PA) and Continuous Usage Intention (CUI): A positive and significant relationship was observed ($\beta = 0.444$, $p < 0.001$). This indicates that as positive attitudes toward AI increase, the intention to use AI also increases. These findings underscore the importance of fostering favorable attitudes to encourage AI adoption among students. Positive Attitude (PA) and Satisfaction with AI Use (SAT): The relationship was not significant ($\beta = 0.038$, $p = 0.542$). This suggests that positive attitudes do not directly influence user satisfaction, implying that other mediating factors may play a role in this relationship.

Continuous Usage Intention (CUI) and Satisfaction with AI Use (SAT): A positive and significant relationship was found ($\beta = 0.365$, $p < 0.001$). This indicates that students with stronger intentions to use AI tend to report higher levels of satisfaction, highlighting the importance of promoting usage intention to enhance the overall user experience.

Perceived Usefulness of AI (UAI) and Positive Attitude (PA): A positive and significant relationship was observed ($\beta = 0.580$, $p < 0.001$). This suggests that when students perceive AI as useful, their attitudes toward AI improve. Perceived usefulness thus emerges as a key factor in shaping positive attitudes.

Perceived Usefulness of AI (UAI) and Continuous Usage Intention (CUI): A positive and significant relationship was identified ($\beta = 0.274$, $p < 0.001$). This indicates that students who perceive AI as useful are more likely to intend to use it, reinforcing the critical role of perceived usefulness in driving usage decisions.

Perceived Usefulness of AI (UAI) and Satisfaction with AI Use (SAT): A positive and significant relationship was found ($\beta = 0.545$, $p < 0.001$). This suggests that students who perceive AI as useful tend to experience higher levels of satisfaction, emphasizing the importance of usefulness in enhancing user satisfaction.

Key Implications: The findings highlight the critical role of perceived usefulness in shaping positive attitudes, driving usage intentions, and enhancing user satisfaction. Additionally, the strong relationship between continuous usage intention and satisfaction underscores the importance of fostering students' intentions to use AI to improve their overall experience. However, the non-significant relationship between positive attitude and satisfaction suggests that other mediating factors may influence this dynamic, warranting further investigation.

Hypotheses	Paths	Path Coefficients (β)	Standard Deviation (STDEV)	T Values	P Values	Result
Direct Effects						
H1	PA → CUI	0.444***	0.067	6.625	0.000	Supported
H2	PA → SAT	0.038	0.062	0.610	0.542	Not Supported
H3	CUI → SAT	0.365***	0.079	4.636	0.000	Supported
H4	UAI → PA	0.580***	0.049	11.807	0.000	Supported
H5	UAI → CUI	0.274***	0.079	3.485	0.000	Supported
H6	UAI → SAT	0.545***	0.063	8.601	0.000	Supported
Indirect Effects						
H7	PA → CUI → SAT	0.162***	0.044	3.715	0.000	Supported
H8	UAI → PA → CUI → SAT	0.094***	0.027	3.525	0.000	Supported
H9	UAI → PA → CUI	0.258***	0.047	5.454	0.000	Supported
H10	UAI → CUI → SAT	0.100**	0.036	2.807	0.005	Supported
H11	UAI → PA → SAT	0.022	0.037	0.594	0.552	Not Supported

Note: $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6. Path Coefficients

3.2.4. Results of Indirect Hypothesis Testing

The results of the analysis of indirect or mediation hypotheses reveal significant relationships, as well as some non-significant findings, which are essential for understanding the dynamics between variables in the context of artificial intelligence (AI) and its use among students. Positive Attitude (PA) → Continuous Usage Intention (CUI) → Satisfaction with AI (SAT): The hypothesis proposing that a positive attitude (PA) influences Continuous Usage Intention (CUI), which in turn affects satisfaction with AI (SAT), shows a coefficient of 0.162 ($p < 0.001$). This indicates that a positive attitude not only has a direct impact on usage intention but also contributes indirectly to satisfaction through usage intention, confirming the mediating role of CUI in this relationship.

Perceived Usefulness of AI (UAI) → Positive Attitude (PA) → Continuous Usage Intention (CUI) → Satisfaction with AI (SAT): The hypothesis suggesting that the perceived usefulness of AI (UAI) is indirectly related to satisfaction (SAT) through positive attitude (PA) and Continuous Usage Intention (CUI) is also significant, with a coefficient of 0.094 ($p < 0.001$). This finding suggests that perceived usefulness not only enhances positive attitudes but also increases usage intention, ultimately leading to greater satisfaction with AI use. Perceived Usefulness of AI (UAI) → Positive Attitude (PA) → Continuous Usage Intention (CUI): The analysis demonstrates that perceived usefulness (UAI) indirectly influences positive attitude (PA) and Continuous Usage Intention (CUI), with a coefficient of 0.258 ($p < 0.001$). This reinforces the idea that a positive perception of AI's usefulness significantly contributes to the formation of positive attitudes and usage intentions.

Perceived Usefulness of AI (UAI) → Continuous Usage Intention (CUI) → Satisfaction with AI (SAT): The hypothesis suggesting that perceived usefulness (UAI) indirectly affects satisfaction with AI (SAT) through Continuous Usage Intention (CUI) has a coefficient of 0.100 ($p = 0.005$). This result indicates that students who perceive AI as useful tend to be more satisfied, which can be explained by their increased usage intention. Perceived Usefulness of AI (UAI) → Positive Attitude (PA) → Satisfaction with AI (SAT): The hypothesis proposing that perceived usefulness (UAI) influences positive attitude (PA) and directly affects satisfaction (SAT) is not supported by the data, as it presents a coefficient of 0.022 ($p = 0.552$). This result suggests that perceived usefulness does not have a significant impact on satisfaction when positive attitude is considered, implying that other factors may mediate this relationship.

The effect sizes (f^2) for the relationships were calculated to assess their practical significance:

PA → CUI: $f^2 = 0.223$ (moderate effect). PA → SAT: $f^2 = 0.002$ (very small/non-significant effect). CUI → SAT: $f^2 = 0.247$ (moderate effect). UAI → PA: $f^2 = 0.508$ (large effect). UAI → CUI: $f^2 = 0.085$ (small/non-significant effect). UAI → SAT: $f^2 = 0.576$ (large effect).

The findings highlight the critical mediating role of Continuous Usage Intention (CUI) in linking positive attitudes and perceived usefulness to satisfaction with AI. Additionally, the large effect sizes for UAI → PA and UAI → SAT underscore the importance of perceived usefulness in shaping both attitudes and satisfaction. However, the non-significant effect of PA → SAT suggests that positive attitudes alone may not directly enhance satisfaction, emphasizing the need to consider other mediating factors.

4. Discussion

The results of this study confirm several proposed hypotheses about the use of artificial intelligence (AI) in education and its relationship with key variables such as attitude, satisfaction, perceived usefulness and intention for continuous use. A positive and significant relationship was found between a positive attitude towards AI and the intention of continuous use (CUI) ($\beta = 0.444$, $p < 0.001$). This finding is in line with previous studies that emphasize that positive attitudes are determinants in the adoption and maintenance of technological tools in learning environments (Oyarvide-Estupiñán et al., 2024; Pantano & Scarpi, 2022). In educational settings, developing positive attitudes is essential to encourage students to see AI as a constructive pedagogical partner. However, the link between positive attitude and satisfaction is not significant ($\beta = 0.038$, $p = 0.542$), which indicates that favorable perceptions alone do not guarantee learning experiences that are meaningful. This difference from previous research makes us see that satisfaction may depend on deeper qualitative factors, such as trust, ethical awareness, or perceived fairness of AI systems, beyond procedural acceptance (Rodway & Schepman, 2023). Students may appreciate the usefulness of AI, but they remain critical or uncomfortable with its transparency and handling of data. Therefore, satisfaction may depend on whether the technology is in line with personal values and institutional ethics. The relationship between continuous use and satisfaction ($\beta = 0.365$, $p < 0.001$) reinforces that regular and safe use of AI improves satisfaction, according to previous evidence (Almufarreh, 2024; Divekar et al., 2024). However, continuous use must be supported by a pedagogical design that balances technological effectiveness with human interaction and reflective learning. Without this balance, sustained use could foster dependency rather than empowerment. Perceived usefulness significantly predicted both attitude and satisfaction, confirming its pivotal role in AI adoption. Students who perceive AI as a useful tool tend to develop more positive attitudes and greater satisfaction (Ma, Akram & Chen, 2024; Sadriwala & Sadriwala, 2022). However, "utility" must not be reduced to instrumental effectiveness; it must develop its educational value, its capacity to promote critical thinking and respect for ethical principles. Overall, the findings reveal a multiple relationship between technology and pedagogy. Attitude, usefulness, and intention predict satisfaction, but satisfaction itself is mediated by the quality of the experience, ethical awareness, and institutional culture. As AI tools are increasingly integrated into higher education, educators and policymakers need to foster digital ethics, emotional engagement, and critical awareness to ensure that technology integration truly enriches learning rather than simply optimizing it.

Future studies could include moderating variables such as gender, prior AI experience, or digital competence to identify differentiated behavioral patterns. This would enrich the understanding of technology adoption processes in diverse educational contexts.

4.1. Mediation Analysis

The SEM-based mediation analysis clarifies how interrelated variables influence students' satisfaction with AI use. A positive attitude (PA) indirectly affects satisfaction (SAT) through continuous usage intention (CUI), underscoring CUI as a key mediator in this relationship. Similarly, perceived usefulness (UAI) reinforces both attitude and usage intention, ultimately impacting satisfaction. However, perceived

usefulness does not directly influence satisfaction, suggesting that attitudes and usage intention play a more central role than the direct perception of usefulness. These findings highlight the complexity of AI adoption and suggest that factors like user experience or institutional support may also shape satisfaction. Future research should explore these aspects by incorporating mediators such as digital competencies for a more comprehensive understanding of AI use in education.

These mediation effects highlight not only the behavioral mechanisms, but also the ethical and pedagogical dimensions of AI adoption. Institutions must consider how trust, autonomy and human supervision are able to mediate satisfaction beyond purely functional variables.

4.2. Practical Implications

The findings indicate that a positive attitude towards AI does not guarantee satisfaction, highlighting the need for educational institutions to humanize the AI learning experience. Universities should focus on designing AI tools that are inclusive, transparent, and pedagogically grounded. Beyond technical training, academic programs should foster ethical literacy, allowing students and teachers to question the implications of algorithmic decisions, data privacy, and potential biases. Therefore, promoting continued use should include reflective practices (discussions, workshops, and critical engagement with AI) so that the use of technology becomes an exercise in awareness rather than a passive adoption. Finally, the integration of AI into real-world educational challenges, supported by the development of competencies in the fields of digital pedagogy and the critical use of data, can reinforce both perceived usefulness and satisfaction.

Certain limitations may affect the interpretation and generalization of the results. First, although the sample of 201 students is suitable for PLS-SEM analysis, its limited geographical and cultural diversity may impact the applicability of findings to other educational contexts. Future research could expand the sample to include participants from diverse regions and academic backgrounds. The cross-sectional design prevents establishing causal relationships between variables, making a longitudinal approach more suitable for understanding the evolution of attitudes, motivations, and AI use over time. Additionally, self-reported data may introduce biases related to social desirability or subjective perceptions.

5. Conclusions

This study examined the relationships among positive attitude (PA), perceived usefulness (UAI), continuous usage intention (CUI), and satisfaction (SAT) with artificial intelligence (AI) in higher education, within the framework of the Technology Acceptance Model (TAM).

The findings confirmed most of the proposed hypotheses. (H1) A positive attitude significantly influences the intention of continuous use, indicating that students with favorable perceptions of AI are more likely to continue using it. However, (H2) no direct link between attitude and satisfaction was found, demonstrating that positive perception alone does not guarantee a meaningful learning experience. (H3) The positive connection between CUI and SAT highlights that sustained and thoughtful use of AI promotes satisfaction when supported by sound pedagogical design.

(H4-H6) Perceived usefulness was decisive, because it influenced attitude, continuous intention to use and satisfaction. Students who see AI as genuinely beneficial express greater engagement and greater satisfaction, confirming that utility must extend beyond effectiveness to include ethical, cognitive, and emotional dimensions. (H7-H10) The results of the mediation showed that continuous intention acts as a bridge between attitude, usefulness, and satisfaction, highlighting that the effective adoption of AI depends on an active, conscious, and ethical engagement with the technology. (H11) The non-significant path from attitude to satisfaction through utility suggests the influence of contextual moderating variables, such as previous AI experience or digital competence.

Overall, perceived usefulness and intention for continued use emerged as the strongest predictors of satisfaction, while the study reinforces the need to humanize the use of technology in education.

Satisfaction with AI depends not only on optimal system performance, but also on student confidence and empowerment. From a pedagogical perspective, universities should promote critical literacy in AI, integrating ethical reflection and practical competence into curricula. Thoughtful rather than mechanical adoption of AI tools should also be encouraged, ensuring that their use fosters autonomy, creativity, and inclusive learning environments.

Although the study applies a classic TAM framework, its contextualization in Latin American higher education provides valuable empirical evidence to a little-explored region. Future research should deepen theoretical comparisons and test moderating factors such as gender, digital competence, and prior experience to enrich the understanding of how AI can support equitable, ethical, and transformative education.

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References

Almufarreh, A. (2024). Determinants of Students' Satisfaction with AI Tools in Education: A PLS-SEM-ANN Approach. *Sustainability*, 16(13), 5354. https://doi.org/10.3390/su16135354

Bakpayev, M., Baek, T.H., van Esch, P., & Yoon, S. (2022). Programmatic creative: AI can think but it cannot feel. *Australasian Marketing Journal,* 30(1), 90-95. https://doi.org/10.1016/j.ausmj.2020.04.002

Basuki, R., Tarigan, Z.J.H., Siagian, H., Limanta, L.S., Setiawan, D., & Mochtar, J. (2022). The effects of perceived ease of use, usefulness, enjoyment and intention to use online platforms on behavioral intention in online movie watching during the pandemic era. *International Journal of Data and Network Science,* 6(1), 253-262. https://doi.org/10.5267/J.IJDNS.2021.9.003

Baysha, M.H., & Resnandari, F.P. (2024). Optimization of the Technology Incorporated in the Bantuan GPT AI. *EDUTECH: Jurnal Inovasi Pendidikan Berbantuan Teknologi,* 4(3), 137-149. https://doi.org/10.51878/edutech.v4i3.3143

Brandhofer, G., & Tengler, K. (2024). Acceptance of artificial intelligence in education: opportunities, concerns and need for action. *Advances in Mobile Learning Educational Research,* 4(2), 1105-1113. https://doi.org/10.25082/AMLER.2024.02.005

Chaieb, S., Garrouch, K., & Al-Ali, N.S. (2023). Perceptions of the use and benefits of artificial intelligence applications: survey study. *Journal of Medical Artificial Intelligence,* 6. https://doi.org/10.21037/jmai-23-59

Chatterjee, S., & Bhattacharjee, K.K. (2020). Adoption of artificial intelligence in higher education: a quantitative analysis using structural equation modelling. *Education and Information Technologies,* 25(5), 3443-3463. https://doi.org/10.1007/s10639-020-10159-7

Choung, H., David, P., & Ross, A. (2023). Trust in AI and Its Role in the Acceptance of AI Technologies. *International Journal of Human-Computer Interaction,* 39(9), 1727-1739. https://doi.org/10.1080/10447318.2022.2050543

Chung-Jen, F., Silalahi, D., I-Tung, S., Thi-Thanh-Phuong, D., Javanisa-Eunike, I., & Jargalsaikhan, S. (2024). *Balancing Satisfaction and Clarity: Enhancing User Information Satisfaction with AI-Powered ChatGPT in Higher Education.* PrePrints. https://doi.org/10.20944/preprints202402.0040.v1

Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly,* 13(3), 319-340. https://doi.org/10.2307/249008

Divekar, R.R., Gonzalez, L., Guerra, S., & Boos, N. (2024). *Usage and Knowledge of Online Tools and Generative AI: A Survey of Students.* PrePrint. Research Square. https://doi.org/10.21203/rs.3.rs-4882673/v1

Esiyok, E., Gokcearslan, S., & Kucukergin, K.G. (2024). Acceptance of Educational Use of AI Chatbots in the Context of Self-Directed Learning with Technology and ICT Self-Efficacy of Undergraduate Students. *International Journal of Human-Computer Interaction*, 41(1), 641-650 . https://doi.org/10.1080/10447318.2024.2303557

Fan, P., & Jiang, Q. (2024). Exploring the Factors Influencing Continuance Intention to Use AI Drawing Tools: Insights from Designers. *Systems,* 12(3), 1-27. https://doi.org/10.3390/systems12030068

Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research,* 18(1), 39-50. https://doi.org/10.2307/3151312

García-Vigil, J.L. (2021). Reflections around ethics, human intelligence and artificial intelligence. *Gaceta Médica de México,* 157(3), 311-314. https://doi.org/10.24875/GMM.20000818

Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology,* 50(5), 2572-2593. https://doi.org/10.1111/bjet.12864

Hair, J., Hult, T., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* SAGE Publications Ltd.

Hair, J.F., Howard, M.C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research,* 109(August 2019), 101-110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice,* 19(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J.F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V.G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review,* 26(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science,* 43(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Kelly, S., Kaye, S.A., & Oviedo-Trespalacios, O. (2023). What factors contribute to the acceptance of artificial intelligence? A systematic review. *Telematics and Informatics,* 77, 101925. https://doi.org/10.1016/j.tele.2022.101925

Lee, Y.C. (2020). Artificial Intelligence and Continuous Usage Intention: Evidence from a Korean Online Job Information Platform. *Business Communication Research and Practice,* 3(2), 86-95. https://doi.org/10.22682/bcrp.2020.3.2.86

Li, C., Pan, R., Xin, H., & Deng, Z. (2020). Research on Artificial Intelligence Customer Service on Consumer Attitude and Its Impact during Online Shopping. *Journal of Physics: Conference Series,* 1575(1), 012192. https://doi.org/10.1088/1742-6596/1575/1/012192

Li, W. (2024). A Study on Factors Influencing Designers' Behavioral Intention in Using AI-Generated Content for Assisted Design: Perceived Anxiety, Perceived Risk, and UTAUT. *International Journal of Human–Computer Interaction*, 1-14. https://doi.org/10.1080/10447318.2024.2310354

Liu, Q., Geertshuis, S., & Grainger, R. (2020). Understanding academics' adoption of learning technologies: A systematic review. *Computers and Education,* 151, 103857. https://doi.org/10.1016/j.compedu.2020.103857

Ma, D., Akram, H., & Chen, H. (2024). Artificial Intelligence in Higher Education: A Cross-Cultural Examination of Students' Behavioral Intentions and Attitudes. *The International Review of Research in Open and Distributed Learning,* 25(3), 134-157. https://doi.org/10.19173/irrodl.v25i3.7703

Maican, C.I., Sumedrea, S., Tecau, A., Nichifor, E., Chitu, I.B., Lixandroiu, R. et al. (2023). Factors Influencing the Behavioural Intention to Use AI-Generated Images in Business: A UTAUT2 Perspective With Moderators. *Journal of Organizational and End User Computing,* 35(1), 1-32. https://doi.org/10.4018/JOEUC.330019

Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society,* 14(1), 81-95. https://doi.org/10.1007/s10209-014-0348-1

Oyarvide-Estupiñán, N., Tenorio, E., Oyarvide, R., Oyarvide-Ramírez, H., & Racines, T. (2024). Factores influyentes para el uso de herramientas digitales en estudiantes universitarios. *Revista Científica de Salud y Desarrollo Humano,* 5(2), 346-366. https://doi.org/10.61368/r.s.d.h.v5i2.141

Panagoulias, D.P., Virvou, M., & Tsihrintzis, G.A. (2023). An Empirical Study Concerning the Impact of Perceived Usefulness and Ease of Use on the Adoption of AI-Empowered Medical Applications. In *Proceedings of the 2023 IEEE 23rd International Conference on Bioinformatics and Bioengineering (BIBE*), (338-345). Dayton, OH, USA. https://doi.org/10.1109/BIBE60311.2023.00062

Pantano, E., & Scarpi, D. (2022). I, Robot, You, Consumer: Measuring Artificial Intelligence Types and their Effect on Consumers Emotions in Service. *Journal of Service Research,* 25(4), 583-600. https://doi.org/10.1177/10946705221103538

Rahmania, A., Zahra, A., Jonas, D., Erliyani, I., & Aprila, N. (2023). Assessing Customer Satisfaction in AI-Powered Services: An Empirical Study with SmartPLS. *International Transactions on Artificial Intelligence,* 2(1), 81-89. https://doi.org/10.3305081

Rane, N., Choudhary, S.P., & Rane, J. (2024). Acceptance of artificial intelligence: key factors, challenges, and implementation strategies. *Journal of Applied Artificial Intelligence,* 5(2), 50-70. https://doi.org/10.48185/jaai.v5i2.1017

Ringle, C.M., Sarstedt, M., Sinkovics, N., & Sinkovics, R.R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief,* 48, 109074. https://doi.org/10.1016/j.dib.2023.109074

Rodway, P., & Schepman, A. (2023). The impact of adopting AI educational technologies on projected course satisfaction in university students. *Computers and Education: Artificial Intelligence,* 5, 100150. https://doi.org/10.1016/j.caeai.2023.100150

Sadriwala, M.F., & Sadriwala, K.F. (2022). Perceived Usefulness and Ease of Use of Artificial Intelligence on Marketing Innovation. *International Journal of Innovation in the Digital Economy,* 13(1), 1-10. https://doi.org/10.4018/IJIDE.292010

Schepman, A., & Rodway, P. (2020). Initial validation of the general attitudes towards Artificial Intelligence Scale. *Computers in Human Behavior Reports,* 1, 100014. https://doi.org/10.1016/j.chbr.2020.100014

Stein, J.P., Messingschlager, T., Gnambs, T., Hutmacher, F., & Appel, M. (2024). Attitudes towards AI: measurement and associations with personality. *Scientific Reports,* 14(1), 1-17. https://doi.org/10.1038/s41598-024-53335-2

Suresh, T. P., Lee Yong, P., Shwu Chyi, Y., & Musa, R. (2023). Connecting with Generation Z: Consumer Acceptance of the Use of Artificial Intelligence in Online Shopping. *Journal of Entrepreneurship and Business,* 11(1), 56–68. https://doi.org/10.17687/jeb.v11i1.921

Tran, A., Nguyen, L., Nguyen, H.S.A., Nguyen, C.T., Vu, L.G., Zhang, M. et al. (2021). Determinants of Intention to Use Artificial Intelligence-Based Diagnosis Support System Among Prospective Physicians. *Frontiers in Public Health,* 9,755644. https://doi.org/10.3389/fpubh.2021.755644

Uymaz, P., Uymaz, A.O., & Akgül, Y. (2024). Assessing the Behavioral Intention of Individuals to Use an AI Doctor at the Primary, Secondary, and Tertiary Care Levels. *International Journal of Human-Computer Interaction,* 40(18), 5229-5246. https://doi.org/10.1080/10447318.2023.2233126

Yao, D., Holopainen, J., & Laukkanen, T. (2024). Human-AI Interaction - Is It Trust or Emotions That Mediates Behavioral Intensions? In *Proceedings of the Annual Hawaii International Conference on System Sciences* (1448-1455). Available at: https://scholarspace.manoa.hawaii.edu/items/c1f7f876-5557-4fa6-b1ec-d0b54f859e76

Zhang, S., Meng, Z., Chen, B., Yang, X., & Zhao, X. (2021). Motivation, Social Emotion, and the Acceptance of Artificial Intelligence Virtual Assistants -Trust-Based Mediating Effects. *Frontiers in Psychology*, 12(August), 1-10. https://doi.org/10.3389/fpsyg.2021.728495

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