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Higher Education Students' Use and Continuous Intention to Use Generative AI: A Systematic Literature Review

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Abstract

This systematic literature review aims to examine existing studies on higher education students' use and continuous intention to use generative AI to support their studies. Using PICOTQ to build the research question, as well as establish inclusion and exclusion criteria. PRISMA framework was used for the selection process. From 33 records, it was found that most studies were conducted in 2024. China was the country with most studies about generative AI. Most study populations were university students. The generative AI tool most frequently examined was ChatGPT. Most papers employed the UTAUT framework, and the most used factor in the studies was perceived usefulness. Future research should explore relevant moderators, and consider diverse student populations and generative AI tools beyond ChatGPT.

Keywords:
Systematic Literature Review; PRISMA; generative AI; higher education students; use; continuous intention to use.

INTRODUCTION

Russell and Norvig (1995) defined artificial intelligence (AI) as the machine's ability to do tasks that usually need human intelligence, such as decision making and language understanding. A new type of AI known as generative AI is a more advanced technology capable of producing human-like text, documents, images, and videos (Cooper, 2023). In recent years, generative AI has developed rapidly, as demonstrated by numerous generative AI applications. The emergence of generative artificial intelligence (generative AI) as led to its adoption across various domains of society and everyday life (Chen et al., 2023). Among its many uses, generative AI is increasingly applied in educational contexts to support teaching and learning processes. As a result, several prior studies have conducted systematic literature reviews to provide a deeper understanding of the use of generative AI in educational settings.

One systematic literature review explored the role of generative AI in entrepreneurship education (G. Yu et al., 2025). The findings highlight four main domains of GAI-enabled entrepreneurship education: personalized and adaptive instruction, simulation-based entrepreneurial training, ethical and psychological concerns, and ecosystem integration through intelligent systems. The review also proposed a conceptual framework integrating instructional applications, competency development, and ecosystem readiness, alongside research propositions to guide future empirical testing. The review recommended that future studies focus on empirically testing theoretical mechanisms and validating structural models through longitudinal and cross-cultural designs.

A systematic literature review titled Factors Influencing Language Teachers' Judgements and Decision-Making About The Use of Generative AI Tools: A Systematic Review (Eedelouei, 2026) focused on understanding the role of teacher in integrating generative AI to their teaching methods. The review addressed the gap in the literature by

noting that there is not a lot of research discussing factors influencing teachers' generative AI use in teaching and assessment. The reviewed studies were published from 2017 to 2025, which resulted in 14 empirical studies included in the review. The findings reveal a range of factors shaping teachers' judgments and decisions about adopting Generative AI tools, and they further highlight the importance of professional development programs in strengthening teachers' competence and agency. The review also outlines implications for research, practice, and policymaking to support more informed and empowered teacher decision-making in GenAI-integrated learning environments.

Lastly, a systematic literature review by Matos et al (2025) examined studies published from 2011 to 2024. The review focused on investigating various AI technologies used in educational settings, such as Large Language Models, adaptive learning systems, and virtual reality tools. It analyzed the effectiveness, challenges, and broader implications of AI integration in education. Importantly, this review did not limit its analysis to students' perspectives but also teachers' perspectives, providing a more comprehensive understanding of AI integration in education. Based on the findings, the authors suggested that to make the most of AI in educational contexts, should prioritize proper teacher training, thoughtful integration of AI tools into pedagogical practices, and robust review processes for AI-generated content.

It can be observed that existing literature reviews have primarily focused on specific areas such as entrepreneurship education, teacher perspectives, as well as the effectiveness and challenges of AI integration in educational contexts. Therefore, this systematic literature review offers novelty by examining the broader themes of use and continuous intention to use Generative AI. Moreover, unlike previous reviews, the population in this study is broadly defined, focusing specifically on higher education students. To formulate a clear and focused research question, the Population-Intervention-Comparison-Outcome-Time-Quality (PICOTQ) framework was employed as a guiding tool (Chuan et al., 2025). This systematic literature review will focus on these criteria:

1. Population (P): higher education students who use generative AI to support their studies.
2. Intervention (I): the use and continuous intention to use generative AI tools (e.g., ChatGPT) for academic tasks.
3. Comparison (C): not applicable in this systematic literature review.
4. Outcome (O): factors influencing use and continuous intention to use generative AI.
5. Time (T): Studies published from 2021 to 2025
6. Quality (Q): quantitative research in peer-reviewed journals.

Based on the PICOTQ, the research questions in this systematic literature review are presented in Table 1.

Table 1. Research Question

ID	Research Question
RQ1	What are the research trends on the higher education students' use and continuous intention to use generative AI from 2021 to 2025?
RQ2	Which outcomes measures and theoretical models that have been most frequently studied in research on higher education students' use and continuous intention to use generative AI?

ID	Research Question
RQ3	Which factors and moderating factors determine higher education students' use and continuous intention to use Generative AI tools to support their studies?

Source: Prepared by the authors based on the Population–Intervention–Comparison–Outcome–Time–Quality (PICOTQ) framework used to formulate the research questions in this systematic literature review.

The purpose of this study is to systematically analyze the development of research on higher education students' use and continuous intention to use generative artificial intelligence (Generative AI) to support academic activities. This study aims to identify research trends that have emerged during the period 2021–2025, particularly those related to the use of Generative AI in higher education contexts. In addition, the study seeks to examine the theoretical models and outcome measures most frequently applied in research investigating students' use and continuous intention to use Generative AI. Furthermore, the study aims to identify the key factors that influence students' use and their intention to continuously use Generative AI technologies in learning activities. The research also explores the role of moderating variables that may strengthen or weaken the relationships between variables influencing the use of this technology. Through a systematic literature review approach, this study is expected to provide a comprehensive overview of the development of research in this area and offer a conceptual foundation for future studies related to the utilization of Generative AI in higher education.

METHOD

This systematic literature review (SLR) was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Joseph et al., 2025). On September 8, 2025, we searched several popular computer science databases, namely Google Scholar, Semantic Scholar, and CrossRef using *Publish or Perish 8* software. CrossRef was mainly used because CrossRef published a lot of papers that discussed students' continuous intention to use generative AI. The search process involves using titles, abstracts, keywords, and advanced features to get better search results. These are the keywords that were used:

1. Higher Education

"Higher education" OR "university student*" OR "college student*" OR "undergraduate*" OR "postgraduate*" OR "tertiary education" OR "university*" OR "college" OR "education" (P. Wang et al., 2025)

2. Generative AI

"Generative AI" OR "artificial intelligence" OR "AI tool*" OR "large language model*" OR "LLM" OR "ChatGPT" OR "GPT-4" OR "Google Bard" OR "Gemini" OR "Microsoft Copilot" OR "AI chatbot*" OR "AI-powered learning tool*" (Ma, 2025)

3. Continuous Intention to Use

"Continuous intention to use" or "continuance intention" or "continuous use" or "continuous usage" or "acceptance" or "sustained use" or "technology adaption" or "user adoption" or "usage behaviour" (Veronika et al., 2025)

To obtain records that met the inclusion factors, custom query was used for each database since they have their own search strings as presented in Table 2.

Table 2. Search Strings

Database	Search String
Google Scholar	("Generative AI" OR "artificial intelligence" OR "AI") AND ("higher education" OR "university") AND ("continuous intention" OR "continuance intention" OR "continued use" OR "continuous intention to use")
Semantic Scholar and CrossRef	("Generative AI" OR "artificial intelligence" OR "AI" OR "ChatGPT") + ("higher education" OR "university") + ("continuous intention" OR "continuance intention" OR "continued use" OR "continuous intention to use")

Source: Prepared by the authors based on the literature search strategy conducted in Google Scholar, Semantic Scholar, and CrossRef databases using Publish or Perish 8 software

Inclusion and exclusion criteria were set to filter the records. The inclusion criteria were:
1. Higher education students who are using Generative AI to support their studies;
2. Use of Generative AI tools (e.g., ChatGPT, Bard) specifically for academic tasks;
3. Studies measuring factors influencing actual use and continuous intention to use;
4. Studies with quantitative measurements;
5. Published from 2021 to 2025;
6. Empirical studies;
7. English-language publications;
8. Journal articles or conference proceedings;

While the exclusion criteria were:
1. Non-higher education populations (e.g., K–12 students, professionals, general public);
2. Higher education students who do not use Generative AI to support their studies;
3. Use of non-generative AI technologies (e.g., traditional LMS without AI integration);
4. Studies focusing on non-academic uses of Generative AI (e.g., entertainment, personal use);
5. Studies not evaluating actual use or continuous intention to use Studies only focusing on technical/system performance (e.g., model accuracy);
6. Studies published before 2021 or with no clear publication date;
7. Studies with no quantitative measurements;
8. Non-English publications;
9. Reviews, theoretical papers, opinion/commentary pieces;

From the initial search using *Publish or Perish*, 1560 records were obtained from Google Scholar (n=500), Semantic Scholar (n=60), and CrossRef (n=956) and then imported to *Zotero* software. Among those records, some are removed due to duplication (n=85), being book records (n = 112), being literature reviews or systematic literature reviews records (n = 26), missing author information (n = 48), being survey records (n = 7), being meta-analyses records (n = 6), a bibliography record (n = 1), a book review record (n = 1), non-English language (n = 18), and retraction (n = 1). After the removal, 450 records are deemed valid to continue to the screening phase. During the screening phase, an expert in the relevant topic

with experience in publishing similar work was involved in conducting the title and abstract screening, as well as in the full-text evaluation phase. In the screening phase, 1008 records were removed because they did not meet the inclusion criteria, leaving 203 records for the retrieval phase. In the retrieval phase, 98 records could not be retrieved, therefore only 106 records were assessed for eligibility. After a full-text review of all records, 62 records were removed because they did not address actual use or continuous use, 7 records were removed because they did not focus on higher education students, 3 records were removed because they discussed learning technologies that integrated AI, and 1 record was removed because it did not provide quantitative measurement. At the end of the selection process, 33 records were included for the review. Figure 1 shows the study selection process in a PRISMA flow diagram.

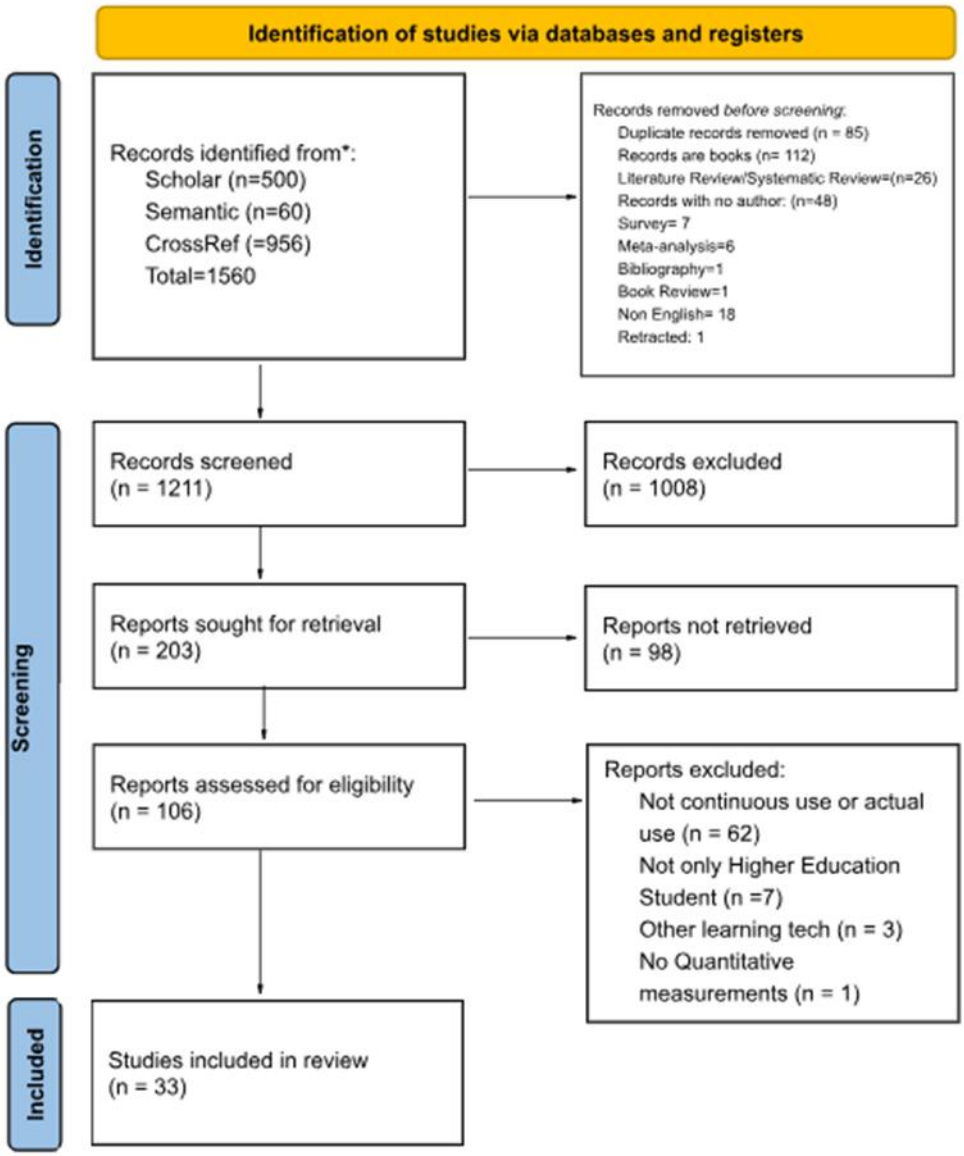

Figure 1. PRISM Flow Diagram

Source: Prepared by the authors based on the article selection process using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework from Google Scholar, Semantic Scholar, and CrossRef databases

Those 33 records were used for the extraction phase. A standardized data extraction form was developed using Microsoft Excel to record the extracted data. Data were extracted on:

1. Study characteristics: first author, title, publication year, country, and study design
2. Population: demographics
3. Intervention/exposure type
4. Predictor variables
5. Outcome variables
6. Framework used (if reported)
7. Moderating factors (if reported)

RESULTS AND DISCUSSION

The 33 records that were extracted can be seen in Table 3.

Table 3. Search Strings

No	Title	Year	Country	Reference
1.	Exploring Attitudes Toward ChatGPT Among College Students: An Empirical Analysis of Cognitive, Affective, and Behavioral Components Using Path Analysis	2024	Northern Peru	(Acosta-Enriquez et al., 2024)
2.	Exploring Public University Undergraduate Students' Experiencing Intention to Use ChatGPT in Academic Purpose: Application of TAM Theory	2024	Bangladesh	(Alam, 2024)
3.	A Study of the Key Drivers Behind University Students' Intention to Use and Usage of Generative AI in Academia: Evidence from ChatGPT Use in Saudi Arabia	2025	Kingdom of Saudi Arabia	(Alarifi, 2025)
4.	Can Multimodal Large Language Models Enhance Performance Benefits Among Higher Education Students? An Investigation Based on the Task–Technology Fit Theory and the Artificial Intelligence Device Use Acceptance Model	2024	Saudi Arabia	(Al-Dokhny et al., 2024)
5.	Artificial Intelligence in Higher Education: Modelling Students' Motivation for Continuous Use of ChatGPT Based on A Modified Self-Determination Theory	2025	Malaysia	(Annamalai et al., 2025)
6.	Chinese Students' Continued Intention to Use Liulishuo App to Learn English Speaking Skills in Non-mandatory Environment: A Case in a Chinese University	2024	China	(Du, 2024)
7.	Modeling The Determinants of HEI Students' Continuance Intention to Use ChatGPT For Learning: A Stimulus–Organism–Response Approach	2024	Hanoi	(Duong, 2024)
8.	Acceptance of Educational Use of AI Chatbots in the Context of Self-Directed Learning with Technology and ICT Self-Efficacy of Undergraduate Students	2025	World	(Esiyok et al., 2025)
9.	English Speaking with Artificial Intelligence (AI): The Roles Of Enjoyment, Willingness to Communicate With AI, and Innovativeness	2024	China	(Huang & Zou, 2024)
10.	Understanding Continuance Intention of Generative AI in Education: An ECM-Based Study for Sustainable Learning Engagement	2025	South Korea	(Jung & Jo, 2025)

No	Title	Year	Country	Reference
11.	Behavioral Intention to Use Artificial Intelligence (AI) Among Accounting Students: Evaluating the Effect of Job Relevance	2025	Malaysia	(Krishnanraw & Kamisah, 2025)
12.	Determinants of College Students' Actual Use of AI-Based Systems: An Extension of the Technology Acceptance Model	2023	China	(Li, 2023)
13.	AI-Based Chatbots Adoption Model for Higher-Education Institutions: A Hybrid PLS-SEM-Neural Network Modelling Approach	2022	Malaysia	(Mohd Rahim et al., 2022)
14.	A Cross-Country Analysis of Self-Determination and Continuance Use Intention of AI Tools In Business Education: Does Instructor Support Matter?	2025	UK and Nigeria	(Ode et al., 2025)
15.	A Longitudinal Study on Artificial Intelligence Adoption Understanding the Drivers of ChatGPT Usage Behavior Change in Higher Education	2024	Netherlands	(Polyportis, 2024)
16.	Understanding Students' Adoption of The ChatGPT Chatbot in Higher Education: The Role of Anthropomorphism, Trust, Design Novelty, and Institutional Policy	2025	Netherlands	(Polyportis & Pahos, 2025)
17.	Habit Predicting Higher Education EFL Students' Intention and Use of AI: A Nexus of UTAUT-2 Model and Metacognition Theory	2025	Pakistan	(Rashid, 2025)
18.	The Influence of Personal Innovativeness on ChatGPT Continuance Usage Intention among Students	2025	Indonesia	(Sadewo et al., 2025)
19.	Examining Students' Motivation to Continue Using AI-Chatbot for Academic Assignment	2024	Indonesia	(Sari et al., 2024)
20.	A Structural Model of Student Continuance Intentions in ChatGPT Adoption	2023	North India	(Saxena & Doleck, 2023)
21.	Investigating Students' Behavioral Intention to Use ChatGPT for Educational Purposes	2025	Bangladesh	(Sun et al., 2025)
22.	Discovering Students' Continuous Intentions to Use ChatGPT In Higher Education: A Tale of Two Theories	2024	Malaysia	(Tan et al., 2024)
23.	Exploring The Usage Behavior of Generative Artificial Intelligence: A Case Study of ChatGPT with Insights Into The Moderating Effects of Habit and Personal Innovativeness	2025	China	(Wu, Tian, et al., 2025)
24.	Unlocking Educational Potential: Exploring Students' Satisfaction and Sustainable Engagement with ChatGPT Using The ECM Model	2024	Vietnam	(Thuy An Ngo et al., 2024)
25.	What Drives Students Toward ChatGPT? An investigation of The Factors Influencing Adoption and Usage of ChatGPT	2023	Oman	(Tiwari et al., 2023)
26.	The Impact of AI Usage on University Students' Willingness for Autonomous Learning	2024	China	(L. Wang & Li, 2024)
27.	A Study on Students' Behavioural Intention and Use Behaviour of Artificial Intelligence-Generated Content in Physical Education: Employing an Extended The Unified Theory of Acceptance and Use of Technology Model	2025	China	(Wu, Li, et al., 2025)
28.	Design Strategies for Artificial Intelligence Based Future Learning Centers In Medical Universities	2025	China	(Yang et al., 2025)
29.	ChatGPT in Higher Education: Factors Influencing ChatGPT User Satisfaction and Continued Use Intention	2024	United States	(C. Yu et al., 2024)

No	Title	Year	Country	Reference
30.	Modeling the Continuous Intention to Use Generative AI as an Educational Tool for EFL Learners among Vocational College Students in Guangzhou, China	2024	China	(Zeng & Li, 2024)
31.	A Study of Undergraduates' Behavioral Intention to Use Generative AI Tools—Ernie Bot as An Example	2024	China	(Zhang, 2024)
32.	Understanding User Stickiness in GAI-IDLE Platforms: Insights from Self-Determination Theory	2025	China	(G. Zhou & Ma, 2025)
33.	Factors Influencing University Students' Continuance Intentions towards Self-Directed Learning Using Artificial Intelligence Tools: Insights from Structural Equation Modeling and Fuzzy-Set Qualitative Comparative Analysis	2024	China	(J. Zhou & Zhang, 2024)

Source: Authors' compilation based on 33 research articles that met the inclusion and exclusion criteria through the PRISMA-based systematic literature review process

RQ1: What are the research trends on the higher education students' use and continuous intention to use generative AI from 2021 to 2025?

All analyzed records are quantitative studies. Publication years ranged from 2022 to 2025 as illustrated in Figure 2. Although this study initially included records from 2021, no records were published in 2021 because generative AI had not yet gained popularity and research on this topic had not emerged at that time. Publication trend shows an increase in 2023, which likely linked to the release of ChatGPT in late 2022(Liu et al., 2023). The high number of records in 2024 shows that there was a growing interest in studying generative AI, likely driven by the emergence of other generative AI tools, such as Gemini (Imran & Almusharraf, 2024). Meanwhile, the lower number of records in 2025 is likely a result of the early timing of data collection.

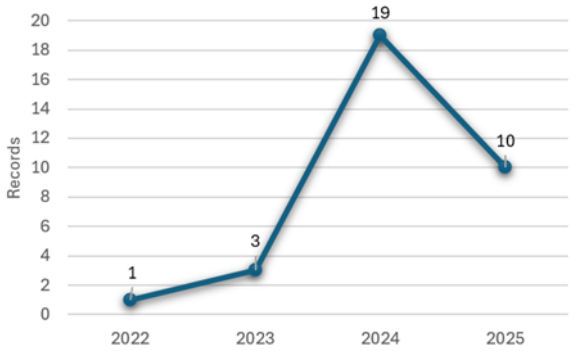

Figure 2. Records Trends from 2021 to 2025

Source: Authors' analysis based on the publication year distribution of the 33 research articles included in the systematic literature review

Regarding the geographic distribution, most studies were conducted in China (n=11), followed by Malaysia (n=4). Netherlands, Bangladesh, Vietnam, and Saudi Arabi each contributed two studies (n=2) The remaining studies were conducted in United States of America, Peru, Turkey, South Korea, India, Pakistan, and Oman (n=1). In addition, one study was conducted across two countries, United Kingdom and in Nigeria. The results are illustrated

in Figure 3. This distribution shows that studies on generative AI in higher education students are concentrated in a few countries, particularly China. This suggests that China has higher generative AI use and continuous use compared to other countries. Other countries contributed fewer studies, suggesting that research on generative AI in higher education is not yet globally widespread.

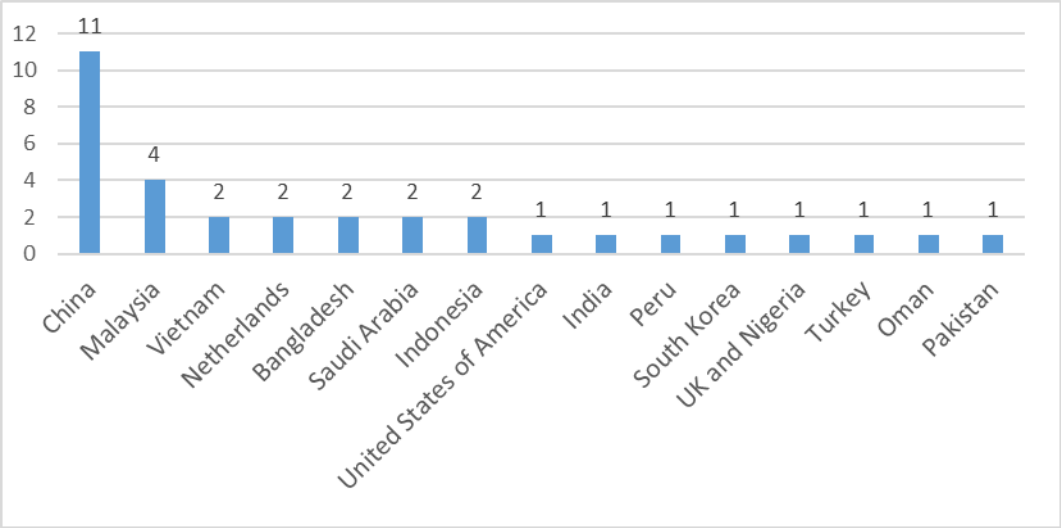

Figure 3. Frequency of Studies Across Countries
Source: Authors' data processing based on the country distribution of the 33 studies included in the systematic literature review

Each study in this review focuses on different populations within higher education institutions, which can be seen in Figure 4. The populations varied widely, but most studies used university students as their study population (n=14). Three studies did not specifically mention the institution and only reported their population as higher education students. Three studies focused on college students in general. Several studies specifically mentioned the institution, such as undergraduate students, public and private university students, and public university students (each n=2). Other studies focused on populations such as Generation Z (Gen Z) university students, public university undergraduate, masters, and doctorate students, undergraduate and postgraduate students, public university undergraduate students, public and private university postgraduate students, and postgraduate students (each n=1). One study discussed university and sport college students. This indicates that most research doesn't specify the study populations. While university students are the most researched group, several studies specifically focused on more specific population, such as postgraduates. In addition, some studies used a specific population across two types of institutions, such as public and private university students, university and sport college students, and undergraduate and postgraduate students to provide deeper understanding of factors influencing generative AI use and continuous use intention.

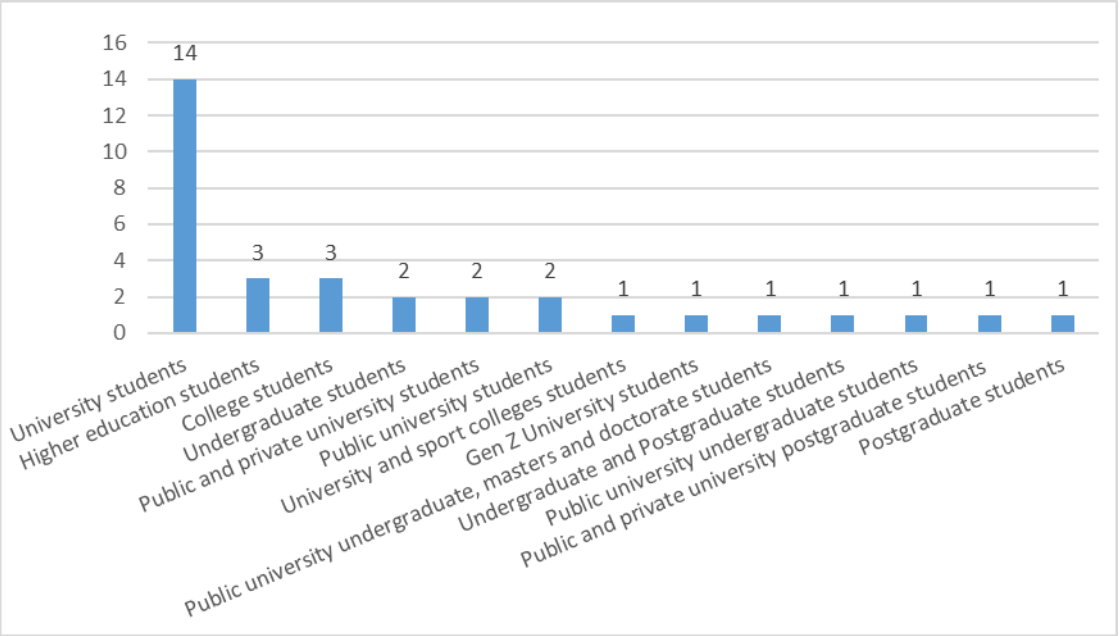

Figure 4. Frequency of Study Populations

Source: Authors' data extraction regarding the population characteristics of the 33 articles analyzed in the systematic literature review

As seen in Figure 5, most studies focused on ChatGPT (n=15), followed by other Generative AI tools (n=7) and AI in general (n=5). The other studies focused on more specific AI tools, such as BING Chatbot, Liulishuo app, AI-based system such as Youdao speak and Polaris AI Tutor, Multimodal Large Language Models in general, Ernie bot and EAP Talk (each n=1). This shows that ChatGPT is the most widely studied generative AI. This focus on ChatGPT indicates that researchers are primarily interested in understanding its impact on students' learning experiences, use behavior, and continuous use intention. Even though a lot of new generative AI tools are emerging, most studies still focus on ChatGPT, with relatively few studies examining other platforms. This indicates that other generative AI applications in higher education need further study.

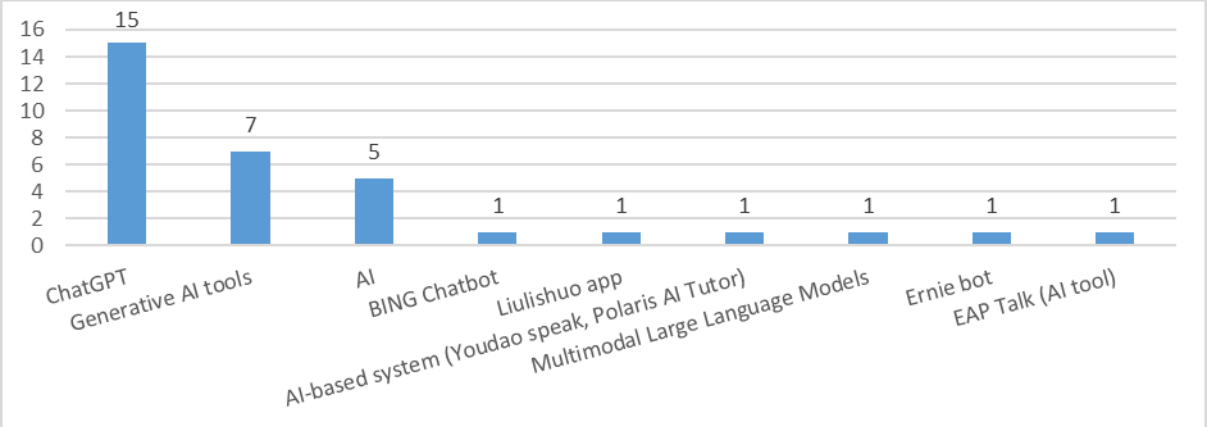

Figure 5. Frequency of Study Intervention/Exposure

Source: Authors' analysis of the types of generative AI tools used in the 33 studies included in the review

RQ2: Which outcomes measures and theoretical models that have been most frequently studied in research on higher education students' use and continuous intention to use generative AI?

Figure 6 presents the chart for outcome measures. Most studies discussed continuous intention (n=17), use behaviour (n=6), actual use (4), and behaviour intention (n=2). The rest of the studies discussed willingness, behaviour component, performance benefits, and experiencing intention (each n=1). This suggests that researchers were mainly interested in understanding students' continuous intention to use generative AI to provide knowledge for developers to improve generative AI tools. With the rapid emergence of numerous generative AI tools, developers are naturally interested in ensuring continuous use of their products. This likely explains the research emphasis on students' continuous intention to use generative AI in higher education.

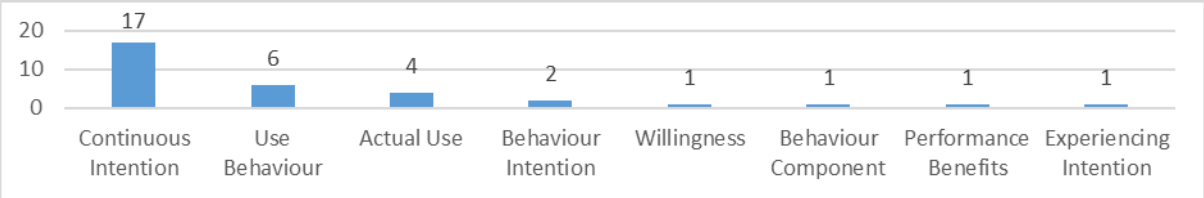

Figure 6. Frequency of Outcome Measure

Source: Authors' synthesis based on the outcome variables used in 33 research articles related to the use and continuous intention to use generative AI

The most frequently used theoretical framework is the Unified Theory of Acceptance and Use of Technology (UTAUT) (n=7). his is followed by studies that developed their own models (categorized as NEW) (n=6), indicating that a considerable number of researchers chose to construct customized frameworks rather than relying on established theories. The Expectation-Confirmation Model (ECM) appears in four studies, while both Self-Determination Theory (SDT) and the Technology Acceptance Model (TAM) are used in three studies. The Stimulus-Organism-Response (SOR) framework is applied in two studies. Several other studies combined theoretical models, such as UTAUT with ECT and Innovation Diffusion Theory (IDT), SDT with Expectation Disconfirmation Theory (EDT), Post-Acceptance frameworks with ECT and TAM, TAM with ECM, UTAUT3 with Information Systems Success (ISS), TAM with SDT, and a combination of TAM, ECM, and Theory of Planned Behaviour (TPB) (each n=1). This distribution indicates that research on generative AI adoption and usage in higher education students' contexts still relies on established theories, particularly UTAUT, ECM, and SDT. These models are commonly used because they offer structured explanations for user intention, satisfaction, and technology use, making them suitable for studying rapidly emerging AI tools. The relatively high number of studies that developed their own models suggests that many researchers feel existing frameworks were not fully capturing the characteristics of generative AI in education. Therefore, they designed their own models designed specifically for the context of their studies.

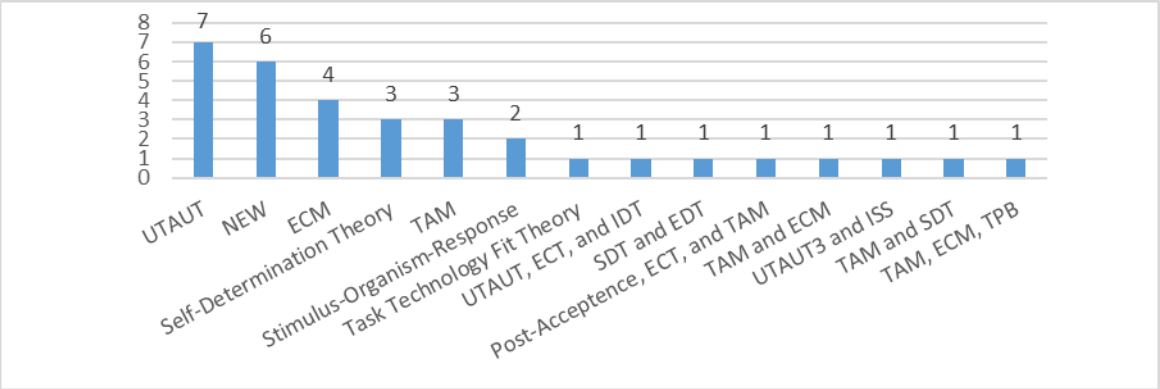

Figure 7. Frequency of Theoretical Model
Source: Authors' analysis of the theoretical models used in studies on the adoption and use of generative AI across the 33 reviewed studies

RQ3: Which factors and moderating factors determine higher education students' use and continuous intention to use Generative AI tools to support their studies?

Figure 8 presents the data showing which factors are accepted and not accepted as significant. Perceived Usefulness was identified as the factor with the highest number of papers reporting it as significant (18 studies, 16 significant; 89%). Several other factors consistently showed full acceptance whenever they were examined, including System Quality (2/2, 100%), Service Quality (1/1, 100%), Perceived Information Quality (5/5, 100%), Perceived Privacy and Security (1/1, 100%), Attitude (5/5, 100%), Perceived Behavioral Control (2/2, 100%), Habit (2/2, 100%), Autonomy (4/4, 100%), Relatedness (3/3, 100%), Trust (4/4, 100%), and Confirmation (6/6, 100%). Other factors had slightly lower acceptance rates, such as Perceived Ease of Use (10/9, 90%), Social Influence (10/8, 80%), Satisfaction (10/8, 80%), Perceived Enjoyment (4/3, 75%), Performance Expectancy (10/6, 60%), Hedonic Motivation (5/3, 60%), Facilitating Conditions (7/4, 57%), Effort Expectancy (11/6, 55%), Price Value (2/1, 50%), Subjective Norms (2/1, 50%), and Competence (4/2, 50%). This shows that researchers often focuses on perceived usefulness, which refers to users' perception that the generative AI can improve efficiency, meet demands, and save costs (energy, physical exertion, time, and money) (Jiang et al., 2024). The result highlights Perceived Usefulness central role in determining higher education students' use and continuous intention to use generative AI to support their studies. Factors that are consistently demonstrated full acceptance whenever examined indicate that these factors are widely recognized as critical determinants of generative AI use and continuous use. Table 3 shows the frequency and significance of factors examined in the included studies.

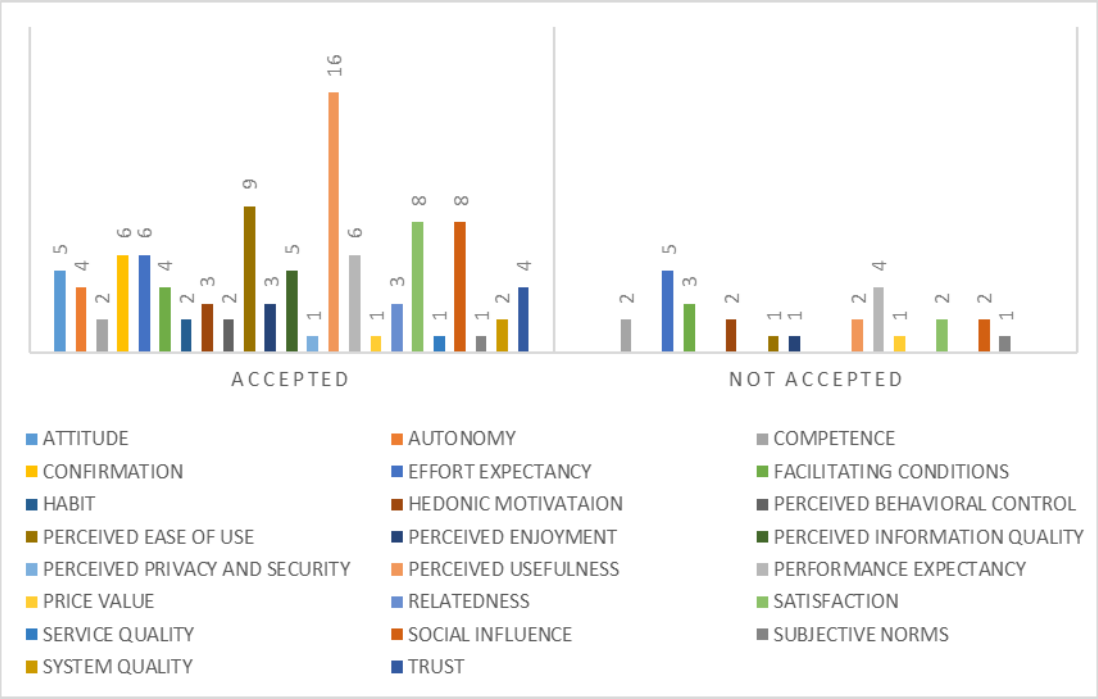

Figure 8. Frequency of Significant and Non-Significant Factors
Source: Authors' synthesis based on the analysis of significant and non-significant factors identified in 33 studies included in the systematic literature review

Tabel 4. Factors Frequency and Significance

Factor	Used	Significant	Percentage
SYSTEM QUALITY	2	2	100%
SERVICE QUALITY	1	1	100%
PERCEIVED INFORMATION QUALITY	5	5	100%
PERCEIVED PRIVACY AND SECURITY	1	1	100%
ATTITUDE	5	5	100%
PERCEIVED BEHAVIORAL CONTROL	2	2	100%
HABIT	2	2	100%
AUTONOMY	4	4	100%
RELATEDNESS	3	3	100%
TRUST	4	4	100%
CONFIRMATION	6	6	100%
PERCEIVED EASE OF USE	10	9	90%
PERCEIVED USEFULNESS	18	16	89%
SOCIAL INFLUENCE	10	8	80%
SATISFACTION	10	8	80%
PERCEIVED ENJOYMENT	4	3	75%
PERFORMANCE EXPECTANCY	10	6	60%
HEDONIC MOTIVATION	5	3	60%
FACILITATING CONDITIONS	7	4	57%
EFFORT EXPECTANCY	11	6	55%
PRICE VALUE	2	1	50%

Factor	Used	Significant	Percentage
SUBJECTIVE NORMS	2	1	50%
COMPETENCE	4	2	50%

Source: Authors' analysis based on the synthesis of factors identified from 33 studies included in the systematic literature review on higher education students' use and continuous intention to use generative AI

As shown in the Figure 9, most studies did not explore any moderating variables (n=28). Only a few studies examined specific moderators, such as Personal Innovativeness (n=1), Trust and Anxiety (n=1), Gender and Age combined (n=1), Gender alone (n=1), and Habit together with Personal Innovativeness (n=1). This indicates that research on generative AI adoption or usage in educational contexts has largely overlooked the role of moderating variables in explaining user behaviour. The dominance of studies with no moderating variables suggests that existing research primarily focuses on direct relationships between constructs, without exploring how individual differences may strengthen or weaken these relationships. Although factors such as personal innovativeness, trust, anxiety, habit, gender, and age can offer deeper insights into user variability, they appear to be underrepresented.

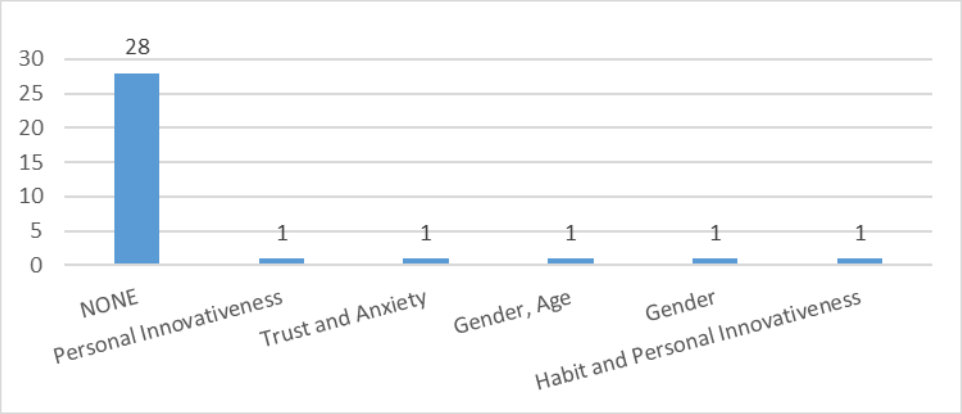

Figure 9. Frequency of Moderating Factors

Source: Authors' analysis of moderating variables examined in the 33 research articles included in the systematic literature review

CONCLUSION

Based on the systematic review of 33 studies, it can be concluded that research on higher education students' use and continuous intention to use generative AI is dominated by quantitative study design, with publication years ranging from 2022 to 2025. The increase in publications in 2023 corresponds to the release of ChatGPT in late 2022, while the peak in 2024 reflects growing interest in generative AI tools more broadly. Geographically, most studies were conducted in China, followed by Malaysia and several other countries across Asia. This indicates that research on generative AI in higher education is still limited to specific regions and is not yet globally widespread. Most studies focused on university students as their primary population, although some included more specific groups such as postgraduate students or mixed populations across multiple types of institutions. In terms of study focus,

ChatGPT remains the most widely examined generative AI tool, significantly surpassing other platforms. Most studies investigated continuous intention to use generative AI, followed by use behaviour and actual use. Regarding the use of theoretical models, the Unified Theory of Acceptance and Use of Technology (UTAUT) emerged as the most frequently used framework. Many studies either developed their own model or combined existing theoretical models. The review shows that Perceived Usefulness is the most frequently used and consistently significant factor across studies, showing its central role in shaping students' use and continuous intention to use generative AI. Furthermore, most studies did not examine moderating variables, with only a small number exploring moderators such as personal innovativeness, trust, anxiety, gender, age, and habit. This lack of attention to moderating effects indicates that research has largely focused on direct relationships between constructs while overlooking individual differences that may influence users' use and continuous intention to use. As a result, future research should examine factors that facilitate the effective use of generative AI, incorporate relevant moderating variables, and involve higher education student populations who utilize generative AI tools beyond ChatGPT.

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