



## Teachers Continuance Intention to Use E-Learning Platforms for Blended Teaching in The Post-Epidemic Era

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Received 28/07/2024

Revised 03/08/2024

Accepted 03/09/2024

### Abstract

**Background and Aim:** During the COVID-19 pandemic, there was a rapid transition to online teaching, which has led to questions about the future of e-learning platforms for blended learning after the pandemic. It is crucial to understand what influences teachers' intentions to continue using these platforms, both for technology developers and educators. However, there is a lack of high-quality empirical studies on teachers' perspectives regarding the continued use of blended learning technologies. This study aims to address this gap by examining the factors that affect teachers' intentions to continue using these technologies.

**Materials and Methods:** In this study, survey data from 306 respondents who come from a university in Jilin province, China, were analyzed using structural equation modeling to validate theoretical constructs and hypotheses.

**Results:** Confirmation positively influences both perceived usefulness ( $p < .001$ ) and satisfaction ( $p < .001$ ). Additionally, perceived usefulness significantly impacts satisfaction ( $p < .001$ ) and attitude ( $p < .001$ ). Moreover, perceived ease of use positively affects perceived usefulness ( $p < .001$ ) and attitude ( $p < .001$ ). Furthermore, satisfaction ( $p < .001$ ), attitude ( $p < .001$ ), and compatibility ( $p < .001$ ) directly and positively influence continuance intention. The perceived usefulness of university teachers in using the Chaoxing platform for blended teaching is related to their intentions of continuous use, but it is not significant ( $p > 0.05$ ). However, perceived usefulness can indirectly affect teachers' continued intentions by affecting their satisfaction and attitude toward using the Chaoxing platform for blended teaching.

**Conclusion:** The satisfaction, attitude, and compatibility of university teachers are important factors influencing their continuance intention to use the Chaoxing platform for blended teaching. While the perceived usefulness is linked to teachers' intentions for continued use, this correlation is not found to be statistically significant. However, perceived usefulness can indirectly impact teachers' continuance intentions to use the Chaoxing platform by influencing their satisfaction and attitude. Additionally, while e-learning platforms like Chaoxing offer flexibility and a wide range of resources that enhance the teaching and learning experience, they face technical issues and reduce face-to-face interaction. Addressing these factors can help optimize the effectiveness of such platforms in supporting blended teaching.

**Keywords:** Blended teaching; Continuance intention to use; Post-epidemic era

### Introduction

In recent decades, higher education has increasingly moved away from traditional classroom methods and embraced information and communication technologies (Espino-Díaz et al., 2020). The adoption of online learning technologies by universities has notably risen, leading to the emergence of blended learning. Blended learning, or hybrid learning, means combining virtual and physical learning settings. This approach, as defined by Stacey and Gerbic (2009); and Kaleta, Skibba, and Joosten (2007), allows for a flexible and dynamic educational experience that can enhance the acquisition of knowledge and skills.

In light of this, universities and other educational establishments have been working hard to incorporate ICT into the teaching and learning process in the classroom. Especially during the epidemic in 2020, Chinese higher education institutions swiftly adopted the Ministry of Education's directive to ensure uninterrupted instruction through online channels, resulting in a diverse array of online teaching practices. To mitigate the impact of these closures, many universities provided online classes for their students via e-learning platforms such as Zoom, MOOCs, and the Chaoxing platform (Azhari & Fajri, 2021). In the epidemic response stage of sustaining classes without stopping learning and suspending classes without





stopping, online teaching has suddenly become a daily activity that all college teachers and students must face after the previous exploratory education reform activity. During this period, many college teachers were insufficiently prepared about ideology, teaching resource reserves, and teaching methods and fell into the deep end of the online swimming pool (Altbach & Wit, 2020).

At present, the digital reform of higher education in China continues to deepen, and the proportion of college teachers using blended teaching has increased from 34.8% before the epidemic to 84.2% (Cao, 2022). Undeniably, the hybrid framework of online/offline education is becoming increasingly popular.

So far, scholarly discourse and research have predominantly centered on student viewpoints and their learning experiences within blended learning environments. While there is literature regarding online teaching, there appears to be a comparatively limited amount of empirical studies delving into the perspectives of educators and their experiences with blended teaching. Teachers play an indispensable role in effectively incorporating technology into educational practices in this transformation. As part of their professional responsibilities, educators are increasingly expected to integrate technological tools into their instructional methods. With technology's ongoing impact on education, teachers face mounting pressure to leverage its advantages, necessitating a seamless fusion of pedagogical principles and technology integration (Pelgrum, 2001). The success of this integration fundamentally relies on teachers' willingness to embrace technology within their educational practices. This highlights the need to investigate the factors that hinder users from adopting and embracing blended learning. Additionally, the phenomenon of acceptance-discontinuance, where users initially accept e-learning but subsequently discontinue its use, is a recurring challenge (Roca et al., 2006). While e-learning's initial acceptability is essential to its success, true success hinges on continued usage. As Bhattacherjee (2001) pointed out, the initial adoption of an information system is certainly important, but the initial adoption behavior is only an important first step in the success of the information system. Compared with the initial adoption, the information system can survive in the long term and achieve ultimate success. Success relies more on the continued use of users.

Given the context of the COVID-19 pandemic, teachers found themselves compelled to make a rapid transition to online teaching. Post-pandemic, a critical question arises: Are teachers willing to continue utilizing these technological platforms for blended learning? Consequently, comprehending the factors influencing teachers' intentions to persist with blended teaching is vital. This understanding not only aids the technology developers in designing appealing content but also assists teachers in formulating strategies that are more likely to promote blended teaching adoption.

## Objectives

1. To determine the factors that significantly influence university teachers' continuance intention to use the Chaoxing platform for blended teaching.
2. To identify the extent of university teachers' continuance intention to use the Chaoxing platform for blended teaching.
3. To analyze the relationships and interactions between the identified factors and university teachers' continuance intention to use the Chaoxing platform for blended teaching.

## Literature review

### Blended learning

The term blended learning emerged in the late 1990s alongside the Internet's burgeoning popularity. Initially ambiguous like other contemporaneous buzzwords (e.g., new economy, e-learning), its definition gradually solidified. Since 2006, blended learning generally denotes the integration of face-to-face and technology-mediated teaching methods (Friesen, 2012; Graham, 2006). In higher education, it often involves combining traditional learning with online approaches (Oliver & Trigwell, 2005).

In China, educational institutions have actively embraced information and communication technology to modernize teaching. The Ministry of Education has introduced policies promoting blended





teaching, smart classroom construction, and seamless integration of online and offline learning (Ministry of Education of China, 2018), with platforms like Chaoxing playing a pivotal role.

### Information of technology

According to (Chen, 2021), the Chaoxing platform is a free educational application developed by Beijing Chaoxing Information Technology Development Co., Ltd. The platform integrates mobile teaching, learning, reading, and social networking capabilities. At present, it has become a popular software for students to learn online. Blended learning using the Chaoxing platform covers the entire teaching process, including the pre-class, in-class, and post-class phases (Li & Heng, 2021).

### Theoretical Framework

**ECM** The Expectation Confirmation Model (ECM), rooted in Expectation Confirmation Theory (ECT) within Information Technology, focuses on perceived usefulness, confirmation, and satisfaction (Hong et al., 2006; Chen et al., 2013). These elements influence users' intention to continue using technology. Factors such as satisfaction, perceived usefulness, and confirmation have been widely studied across various domains, showing their significant impact on user behavior and continuance intentions (Barnes & Böhringer, 2011; Kim, 2010; Stone & Baker-Eveleth, 2013). Daneji et al (2019) applied ECM to study how students' perceptions of usefulness, confirmation, and satisfaction affect their intention to continue using MOOCs, highlighting confirmation's role in influencing perceived usefulness and satisfaction. In the context of blended teaching using the Chaoxing platform in Chinese universities post-epidemic, ECM serves as a theoretical framework to understand educators' willingness to continue using the platform (Bhattacherjee, 2001).

**TAM** The Technology Acceptance Model (TAM), based on the Theory of Reasoned Action, predicts how individuals adopt technology based on perceived usefulness and perceived ease of use. These perceptions influence attitudes, which in turn affect intentions and the actual usage of information systems. TAM has been widely applied in educational settings to understand how perceived usefulness and perceived ease of use impact learning effectiveness and user attitudes. Despite some challenges in predicting intentions for learning management systems, TAM remains a robust framework for studying technology adoption behaviors. In this study, TAM is used to explore Chinese university teachers' intention to continue using the Chaoxing platform for blended teaching post-epidemic.

**DOI** The Diffusion of Innovation model explains technology adoption, influenced by attributes like advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Compatibility, assessing how well an innovation aligns with user values and past experiences, strongly influences adoption (Agarwal & Prasad, 1997; Isaac et al., 2019). In this study, compatibility is crucial as it determines how well the Chaoxing platform meets teachers' values and needs, impacting their intention to use it post-epidemic.

### Confirmation (CONF)

Confirmation refers to whether users' expectations about using an Information System (IS) match its actual performance (Bhattacherjee, 2001). Past research consistently shows a strong link between performance expectancy, satisfaction, and confirmation (Alraiimi et al., 2015; Daneji et al, 2019). In the context of this study, confirmation relates to educators' perception of how well the Chaoxing platform for blended teaching aligns with their expectations. Positive confirmation leads to a favorable view of the platform, fostering satisfaction in its use.

### Perceived Usefulness (PU)

Perceived Usefulness is defined as the degree to which a person believes that using a particular system will increase his or her job performance (Davis, 1989). Perceived Usefulness plays a pivotal role in technology adoption and continuance. Studies by Daneji et al. (2019), Mouakket (2015), and Wu and Chen (2017) link perceived usefulness to satisfaction and continuance intentions. It also positively influences user satisfaction and adoption attitudes (Bhattacherjee, 2001; Karahanna et al., 1999; Cheng et al., 2015), highlighting its critical impact across stages of technology use.

### Perceived Ease of Use (PEOU)





Perceived Ease of Use refers to the degree to which a user expects the use of a system to be effortless (Davis et al., 1989). Research has shown that Perceived Ease of Use has a positive impact on users' attitudes and their perception of the usefulness of technology. For example, Lee and Lehto (2013) discovered that Perceived Ease of Use directly influences attitudes toward the usefulness of YouTube. Additionally, Malaquias et al. (2018) and Cheng et al. (2015) emphasize the significant impact of Perceived Ease of Use on attitudes and perceived usefulness, highlighting its role in shaping users' intentions. In the context of blended teaching using the Chaoxing platform, Perceived Ease of Use could influence teachers' attitudes and perceptions of its usefulness, which is crucial for the platform's acceptance and adoption.

### **Satisfaction (SAT)**

Satisfaction, defined as users' response after using a system (Daneji et al., 2019), is crucial in the ECM framework, influencing intentions to continue using the system. Bhattacherjee (2001) and Hong et al (2006) highlight its impact on continuance intention, with Liao et al. (2009) corroborating this. Wu and Zhang (2014) found user satisfaction significantly predicts continued use, underscoring its importance. In the context of the Shaoxing platform, teachers' satisfaction, influenced by their self-perception and support, plays a key role in shaping their ongoing use and enhancing educational outcomes.

### **Attitude (ATT)**

Attitude refers to the positive or negative thoughts, feelings, and perceptions toward a behavior (Ajzen, 1991). Davis et al. (1989) and Taylor and Todd (1995) describe it as users' emotional inclination toward technology. Teo (2011) and other studies highlight that attitude reflects users' feelings about technology use and significantly impacts their intention to continue using it (Ho, 2010; Huang, 2016; Cheng et al., 2015). Attitude influences continuance intention as users' direct experiences with technology shape their emotional evaluations and willingness to persist in its use (Karahanna et al., 1999; Wu & Zhang, 2014). In this study, a teacher's attitude toward using the Chaoxing platform for blended teaching is defined as the extent to which they have a positive perception of it.

### **Compatibility (COMP)**

Compatibility, as defined by Rogers (1995), measures how well an innovation aligns with users' needs, values, and experiences. A technology perceived as compatible is more likely to be adopted and spread quickly (Carter & Campbell, 2011). Chang et al. (2020) found a positive relationship between compatibility and users' intention to continue using technology. In the context of the Chaoxing platform, if educators view the platform as well-aligned with their teaching needs and goals, they are more likely to persist in using it for blended learning, enhancing its adoption and sustained use (Travagli, 2012).

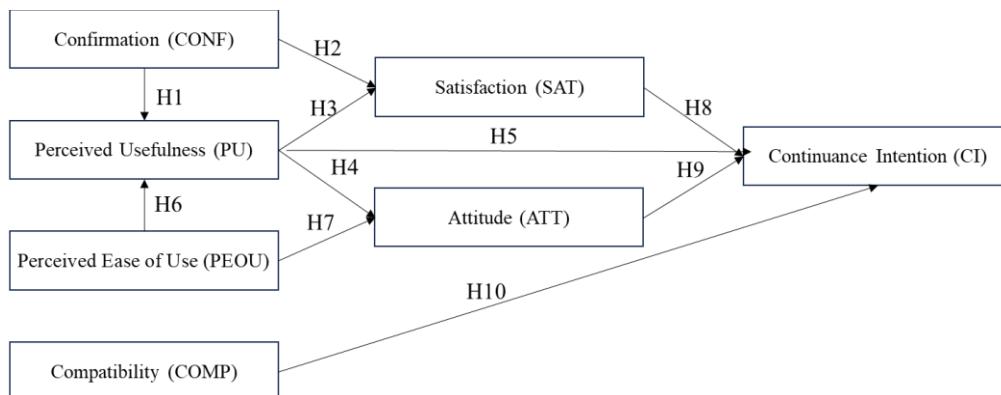
### **Continuance Intention (CI)**

Continuance intention refers to the willingness to persist in using technology over time (Sharma & Saini, 2022). It indicates users' intention to continue using a technology after initially adopting it (Bhattacherjee, 2001). In the context of e-learning, it measures how much users plan to continue and expand their use of the system (Liao & Lu, 2008). In the case of blended teaching, it specifically pertains to teachers' continuance intention to use the Chaoxing platform.

## **Conceptual Framework**

Based on the findings of previous research, this study proposed a model consisting of seven key components from the Technology Acceptance Model (TAM) and the Expectation Confirmation Model (ECM), as well as the compatibility factor from the Diffusion of Innovation model. The conceptual framework is shown in Figure 1.





**Figure 1** Conceptual Framework of the Research

### Hypotheses

Based on the literature review, and the conceptual framework, the hypotheses have been developed as follows.

Ha1: Confirmation influences the Perceived Usefulness of using the Chaoxing platform for blended teaching.

Ha2: Confirmation influences Satisfaction toward using the Chaoxing platform for blended teaching.

Ha3: Perceived Usefulness influences Satisfaction toward using the Chaoxing platform for blended teaching.

Ha4: Perceived Usefulness influences Attitude toward using the Chaoxing platform for blended teaching.

Ha5: Perceived Usefulness has an influence on Continuance Intention to use the Chaoxing platform for blended teaching.

Ha6: Perceived Ease of Use influences the Perceived Usefulness of using the Chaoxing platform for blended teaching.

Ha7: Perceived Ease of Use influences Attitude toward using the Chaoxing platform for blended teaching.

Ha8: Satisfaction has an influence on the Continuance Intention to use the Chaoxing platform for blended teaching.

Ha9: Attitude has an influence on Continuance Intention to use the Chaoxing platform for blended teaching.

Ha10: Compatibility has an influence on Continuance Intention to use the Chaoxing platform for blended teaching.

### Methodology

The validity of the questionnaire questions was assessed using the Overall Scale Content Validity Index (S-CVI) technique by three professors with Doctoral degrees, who are experts in the field of education and have experience with the research process and the Chaoxing platform at A university in Jilin province in China. Based on the expert evaluation results, all items in the questionnaire received a score of 1 agreement that the items were suitable. The items were considered valid according to Polit and Beck (2006). In the pilot test, the study computed Cronbach's coefficient for each variable to assess the internal consistency of individual variables. According to Taber (2018), analysis frequently uses 0.7 as a benchmark value for Cronbach's Alpha, and at this level and higher, the items are sufficiently consistent to indicate the measure is reliable.

The questionnaire consists of three parts. Part I includes a screening question requiring a "Yes" or "No" response, with respondents proceeding to answer subsequent questions if they answer "Yes". Part II captures demographic information, while Part III explores factors influencing teachers' intention to use the



Chaoxing platform for blended teaching. A 5-point Likert scale ranging from Strongly Disagree to Strongly Agree is used throughout the questionnaire.

The survey was designed using the Wenjuanxing platform and distributed via questionnaire links shared within WeChat groups across the 18 colleges of A University. The sampling procedure determined for this study was stratified sampling based on subject categories. Data collection took place from February 26 to 29, 2024, yielding a total of 306 valid responses over the four days.

The survey will prioritize privacy by using the Wenjuanxing platform to collect participant responses directly within the system. All data will be securely stored on restricted-access servers, exclusively available to authorized researchers. Additionally, no data will be shared with third parties, its sole purpose is to support the study. Confidentiality is ensured, with aggregated results reported while safeguarding individual identities.

This study engaged two specialist English language teachers to translate a prepared questionnaire. One conducted the forward translation, translating the questionnaire from English to Chinese. The other performed the back translation. The aim was to verify the alignment between the back-translated version and the original content. Both translators hold degrees in English language studies, have at least one year of study abroad experience, and possess professorial titles along with Doctoral degrees.

The research used SPSS 27.0 statistical software for data analysis. Descriptive statistics were calculated to report the demographic information of the samples in terms of frequencies and percentages. Mean values and standard deviation were used to report the perceptions of the samples towards each item of the variables. Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM) were applied for hypotheses testing to examine the relationship between the variables.

## Results

### Demographic Information

The survey included 306 full-time teachers. There were 109 science and engineering teachers, 161 literature and history teachers, and 36 art teachers. 178 were male (58.2%) and 128 were female (41.8%). The age distribution was as follows: 63 teachers were less than 35 years old (20.6%), 63 were between 36-40 years old (20.6%), 136 were between 41-50 years old (44.4%), and 44 were over 51 years old (14.4%). In terms of teaching experience, 21 had less than 3 years (6.9%), 23 had 4-6 years (7.5%), 186 had 7-25 years (60.8%), and 76 had more than 26 years (24.8%). In terms of degrees, 10 had bachelor's degrees (3.3%), 152 had master's degrees (49.7%), and 144 had doctorate degrees (47.1%). Professional titles included 26 teaching assistants (8.5%), 139 lecturers (45.4%), 97 associate professors (31.7%), and 44 professors (14.4%).

### Descriptive Statistics of the Variables

Table 1 shows that the questionnaire agrees on the highest mean of "Confirmation" (Mean 3.789, S.D. = 0.659). This was followed by "Perceived Usefulness" (Mean 3.738, S.D. = 0.737), "Compatibility" (Mean 3.701, S.D. = 0.658), "Attitude" (Mean 3.677, S.D. = 0.706), "Satisfaction" (Mean 3.658, S.D. = 0.721), "Perceived Ease of Use" (Mean 3.621, S.D. = 0.919), "Continuance Intention" (Mean 3.605, S.D. = 0.681). The overall result shows an agreement with a mean of 3.684 and a standard deviation of 0.726.

**Table 1** Descriptive Statistics of the Variables

Variables	Mean	S.D.	Interpretation
CONF	3.789	0.659	Agree
PEOU	3.621	0.919	Agree
PU	3.738	0.737	Agree
SAT	3.658	0.721	Agree
ATT	3.677	0.706	Agree

Variables	Mean	S.D.	Interpretation
COMP	3.701	0.658	Agree
CI	3.605	0.681	Agree
<b>Average</b>	<b>3.684</b>	<b>0.726</b>	<b>Agree</b>

## Hypotheses Testing

The study utilized the Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM) to test all hypotheses in the study. All analyses were conducted using Software Amos 26.0 to calculate statistics for hypotheses testing.

### Common Method Bias Assessment

This study used Harman's one-factor test to test for the presence of homologous bias. Put all measurement items of variables together and conduct Exploratory Factor Analysis (EFA) on all items using principal component analysis. Table 2 showed results that the eigenvalues of the first principal component are greater than 1, and explain 35.328% of the variance, which does not exceed 40%, indicating that there is no serious common method bias in the data of this study.

**Table 2** Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.576	35.253	35.253	10.576	35.253	35.253	3.489	11.631	11.631
2	2.550	8.499	43.753	2.550	8.499	43.753	3.209	10.698	22.329
3	1.738	5.793	49.546	1.738	5.793	49.546	2.875	9.584	31.913
4	1.543	5.145	54.691	1.543	5.145	54.691	2.826	9.419	41.332
5	1.446	4.819	59.510	1.446	4.819	59.510	2.738	9.127	50.459
6	1.344	4.480	63.990	1.344	4.480	63.990	2.695	8.985	59.444
7	1.264	4.212	68.203	1.264	4.212	68.203	2.628	8.759	68.203

Extraction Method: Principal Component Analysis.

### Reliability and validity analysis

#### Reliability analysis of the survey questionnaire

This study used the reliability analysis function of SPSS 27.0 to test the reliability coefficient of the internal consistency of questionnaire data. According to the table illustrated below, the independent variable Perceived Ease of Use, has the highest reliability value of 0.870. It is followed by Attitude (0.858), Satisfaction (0.852), Perceived Usefulness (0.851), confirmation (0.849), and the lowest reliability value 0.822 from the independent variable Compatibility. The Cronbach alpha value for the dependent variable, Continuance Intention to Use is 0.822. Overall, all the variables are consistent and reliable. The result indicates satisfactory internal consistency reliability as the values for all the variables are above 0.8, meeting the reliability requirement of a coefficient of .70 or higher (Taber, 2018). From the table, it also can be seen that the confirmation, Perceived Ease of Use, Perceived Usefulness, Attitude, Satisfaction, Compatibility, and Continuance Intention to Use studied in this study all have CITC values greater than 0.5. From the perspective of "deleting the Cronbach's Alpha value of this item", deleting any item will not cause an increase in the Cronbach's Alpha value of the corresponding variable. Therefore, all variable questions meet the requirements, and the reliability of the questionnaire is good.

**Table 3** Reliability Statistics of Survey Questionnaire

Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha



CONF1	15.31	7.191	.685	.811	0.849
CONF2	15.31	7.007	.726	.800	
CONF3	15.05	7.303	.657	.819	
CONF4	15.05	7.378	.617	.829	
CONF5	15.07	7.225	.613	.831	
PEOU1	14.67	15.238	.651	.854	0.870
PEOU2	14.55	14.209	.688	.844	
PEOU3	14.59	13.508	.683	.847	
PEOU4	14.28	12.762	.666	.857	
PEOU5	14.32	14.029	.854	.812	
PU1	11.16	4.931	.761	.779	0.851
PU2	11.22	5.249	.643	.830	
PU3	11.25	5.143	.682	.813	
PU4	11.22	5.203	.675	.816	
ATT1	10.84	4.382	.724	.810	0.858
ATT2	11.13	4.789	.662	.835	
ATT3	10.99	4.964	.713	.816	
ATT4	11.16	4.666	.717	.812	
SAT1	10.90	5.446	.671	.824	0.852
SAT2	10.79	4.068	.770	.782	
SAT3	11.03	4.884	.678	.818	
SAT4	11.17	5.261	.685	.816	
COMP1	11.21	4.223	.606	.793	0.822
COMP2	11.26	4.074	.730	.739	
COMP3	10.88	4.170	.619	.787	
COMP4	11.07	4.042	.631	.783	
CI1	10.70	4.054	.724	.736	0.822
CI2	10.80	4.536	.618	.788	
CI3	10.79	4.704	.688	.762	
CI4	10.97	4.405	.571	.813	

#### Validity analysis of the survey questionnaire

This study utilized Exploratory Factor Analysis (EFA) to assess the construct validity of the survey questionnaire. Before conducting factor analysis, it is essential to conduct Bartlett's sphericity test on the questionnaire data and calculate the Kaiser-Meyer-Olkin (KMO) measure. It is generally accepted that a KMO value above 0.7 and a significant level for the sphericity test meeting requirements for a two-tailed test indicate the suitability of the questionnaire data for factor analysis. The results indicate that the data concentration of the questionnaire measurements is satisfactory, making it suitable for factor analysis.

**Table 4** KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. .928

Bartlett's Test of Sphericity	Approx. Chi-Square	4804.347
	df	435
	Sig.	.000

The factor loadings and explained variances after rotation are presented in Table 5. The results of the factor analysis in Table 5 demonstrate that each measurement indicator's factor loading within its corresponding dimension (latent variable) exceeds 0.6, while being less than the loadings in other latent variable dimensions (those less than 0.5 are omitted), suggesting that the structural validity of the measurement questionnaire has been successfully confirmed.

**Table 5** Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
PEOU5	.860						
PEOU3	.770						
PEOU2	.765						
PEOU1	.758						
PEOU4	.719						
CONF2		.793					
CONF1		.722					
CONF3		.703					
CONF5		.692					
CONF4		.645					
ATT4			.801				
ATT1			.772				
ATT3			.757				
ATT2			.708				
PU1				.779			
PU2				.743			
PU3				.741			
PU4				.736			
SAT2					.803		
SAT1					.758		
SAT4					.722		
SAT3					.661		
CI1						.762	
CI3						.748	
CI2						.729	
CI4						.680	
COMP2							.745
COMP3							.724
COMP1							.713
COMP4							.671
Total	10.576	2.550	1.738	1.543	1.446	1.344	1.264
% of Variance	11.631	10.698	9.584	9.419	9.127	8.985	8.759
Cumulative %	11.631	22.329	31.913	41.332	50.459	59.444	68.203

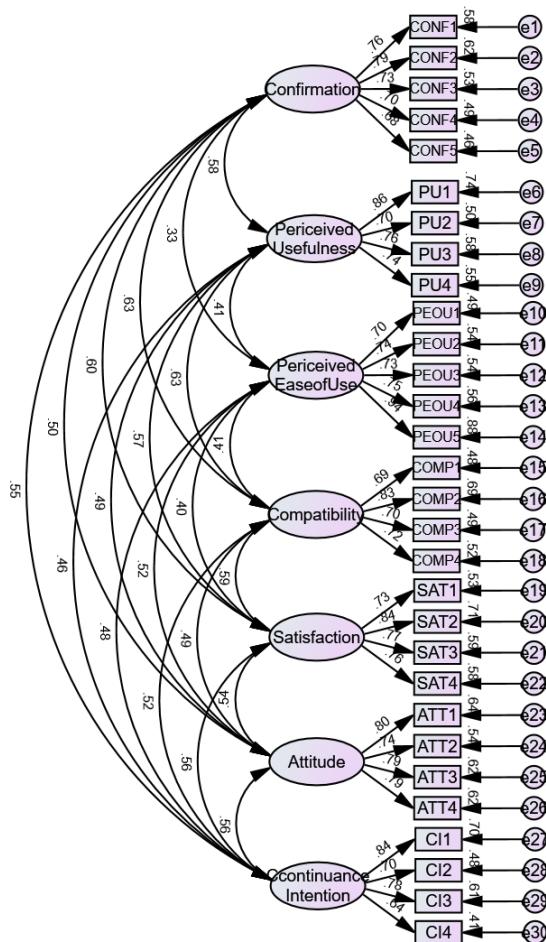
*Extraction Method: Principal Component Analysis.*

*Rotation Method: Varimax with Kaiser Normalization.*

*Rotation converged in 6 iterations.*

## Reliability and validity testing of measurement model

The reliability and validity of the measurement model were assessed through confirmatory factor analysis (CFA) using AMOS 26.0 to examine the significance of factor loadings from exploratory factor analysis results in parameter estimation for the structural equation model. The CFA results are presented in Figure 2.



**Figure 2** CFA results

Based on the results of confirmatory factor analysis, this study examines the validity and reliability of latent variable measurement in the measurement model. Validity reflects the degree to which indicator variables measure potential variables, including convergent validity and discriminant validity. Reliability refers to the internal consistency of the measurement model.

The internal consistency of a measurement model is typically assessed using the composite reliability (CR) value of latent variables. A higher CR value indicates a stronger internal correlation between measurement indicators for a specific latent variable (Hair, et al., 2017). Good internal consistency is indicated when there is a significant path between a latent variable and its indicator variable ( $P < 0.05$ ), standardized path coefficient  $> 0.5$ , and CR  $> 0.7$  (Henseler et al., 2009).

Measurement model validity is evaluated by assessing convergent validity and discriminant validity. The convergent validity was assessed using the average variance extracted (AVE) and factor loadings. The AVE should be at least 0.50, as recommended by Hair et al. (2017) and Henseler et al. (2015). Additionally, all measurement items' loadings should be 0.50 or above on their hypothesized construct and they should

be statistically significant ( $p < 0.05$ ), as suggested by Hair et al. (2017). Discriminant validity can be assessed using the Fornell and Larcker (1981) criterion, which requires that the average variance extracted (AVE) values of constructs be higher than the squared inter-construct correlations.

The standardized factor load results of the test indicator variables, composite reliability and average variance extraction of potential variables, and the correlation coefficient between two potential variables are presented in Table 6 and Table 7, respectively.

**Table 6** Combination reliability and convergent validity

		Standardized Factor loading	S.E.	P	CR	AVE
CONF1	<---	CONF_	0.760			
CONF2	<---	CONF_	0.790	0.078	***	
CONF3	<---	CONF_	0.728	0.077	***	0.852
CONF4	<---	CONF_	0.697	0.079	***	0.535
CONF5	<---	CONF_	0.676	0.083	***	
PU1	<---	PU_	0.858			
PU2	<---	PU_	0.704	0.063	***	0.853
PU3	<---	PU_	0.763	0.061	***	0.592
PU4	<---	PU_	0.745	0.061	***	
PEOU1	<---	PEOU_	0.703			
PEOU2	<---	PEOU_	0.736	0.097	***	
PEOU3	<---	PEOU_	0.735	0.108	***	0.882
PEOU4	<---	PEOU_	0.750	0.121	***	0.603
PEOU5	<---	PEOU_	0.936	0.089	***	
COMP1	<---	COMP_	0.691			
COMP2	<---	COMP_	0.832	0.092	***	0.826
COMP3	<---	COMP_	0.697	0.095	***	0.547
COMP4	<---	COMP_	0.723	0.098	***	
SAT1	<---	SAT_	0.730			
SAT2	<---	SAT_	0.843	0.116	***	0.858
SAT3	<---	SAT_	0.766	0.099	***	0.602
SAT4	<---	SAT_	0.759	0.087	***	
ATT1	<---	ATT_	0.800			
ATT2	<---	ATT_	0.737	0.065	***	0.860
ATT3	<---	ATT_	0.789	0.058	***	0.606
ATT4	<---	ATT_	0.785	0.064	***	
CI1	<---	CI_	0.838			
CI2	<---	CI_	0.696	0.062	***	0.830
CI3	<---	CI_	0.784	0.054	***	0.552
CI4	<---	CI_	0.638	0.069	***	

Remark: CR = Composite Reliability, AVE = Average Variance Extracted

The results indicated that the measurement model demonstrates strong explanatory ability, as evidenced by standardized factor loads of the measurement indicators for the 7 potential variables exceeding 0.6 and highly significant factor coefficients ( $p=0.000$ ). The potential variables exhibit a

composite reliability (CR) exceeding 0.826, with an average variance extraction (AVE) greater than 0.535, signifying strong internal consistency and convergent validity within the measurement model.

**Table 7** Discriminant validity

	CI	ATT	SAT	COMP	PEOU	PU	CONF
CI	<b>0.743</b>						
ATT	0.559**	<b>0.778</b>					
SAT	0.556**	0.536**	<b>0.776</b>				
COMP	0.519**	0.495**	0.593**	<b>0.738</b>			
PEOU	0.479**	0.522**	0.397**	0.409**	<b>0.776</b>		
PU	0.463**	0.486**	0.566**	0.631**	0.413**	<b>0.770</b>	
CONF	0.548**	0.496**	0.596**	0.628**	0.332**	0.582**	<b>0.731</b>

note: \*\*P<0.01, \*P<0.05

Furthermore, as depicted in Table 7, the absolute values of correlation coefficients among potential variables are significantly smaller than the AVE square root values of potential variables (highlighted on the diagonal in the matrix), demonstrating good discriminative validity within this measurement model, that is each potential variable exhibits distinct characteristics from others.

#### Structural Equation Model

The Structural Equation Model (SEM) was used to test the proposed causal relationships among variables. This study employed the path analysis function of the AMOS 26.0 statistical software, using the "maximum likelihood estimation method" to estimate relevant parameters and analyze the research model's simulation path and explanatory ability.

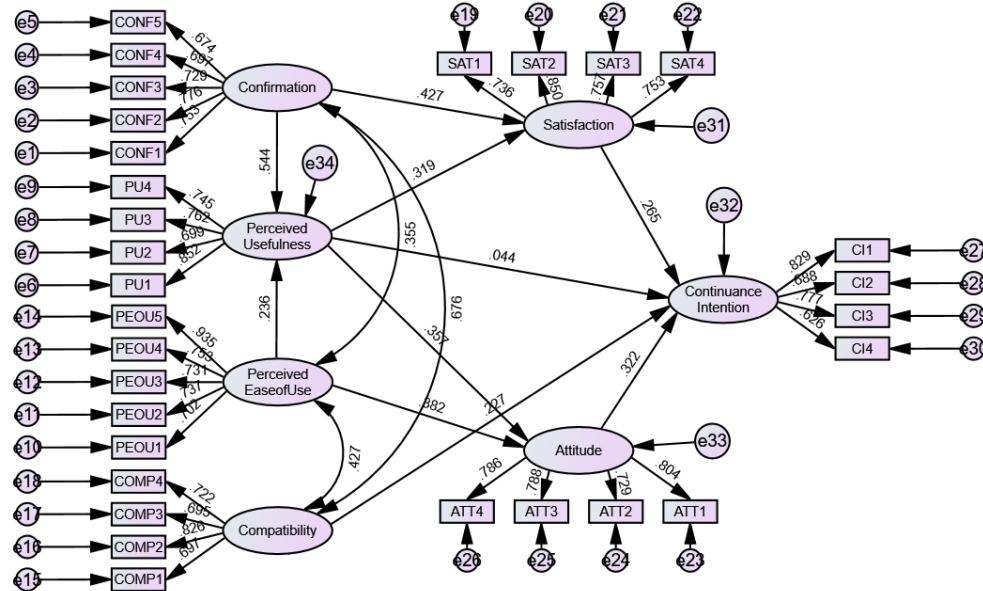
In the path analysis, the structural model of influencing factors on teachers' continuance intention to use the Chaoxing platform for blended teaching was initially constructed based on the path hypotheses of the theoretical model. Subsequently, 306 valid sample data were imported into AMOS for the estimation. The estimation results of relevant parameters are presented in Table 8.

**Table 8** Path coefficient analysis results

path	Standardized		S.E.	C.R.	P	Significance test
		path coefficient				
PU	<---	CONF	0.544	0.082	8.113	***
PU	<---	PEOU	0.236	0.065	3.984	***
SAT	<---	CONF	0.427	0.071	5.306	***
SAT	<---	PU	0.319	0.056	4.147	***
ATT	<---	PU	0.357	0.064	5.477	***
ATT	<---	PEOU	0.382	0.071	5.759	***
CI	<---	PU	0.044	0.082	0.515	0.607
CI	<---	COMP	0.227	0.089	3.237	0.001
CI	<---	SAT	0.265	0.101	3.452	***
CI	<---	ATT	0.322	0.069	4.567	***

The analysis of the AMOS output shows that the structural model in the study includes 10 path hypotheses relationships, and the standardization coefficients of 9 path relationships are statistically significant, except for the "Perceived Usefulness-Continuance Intention" path coefficient (P=0.607>0.05).

This indicates that most path relationships in the structural model have been validated. The relevant parameters of the path analysis in the structural model can be found in Figure 3.



**Figure 3** Structural Equation Model

#### Model fit test

Hair et al. (2010) indicated that the goodness-of-fit of the overall model can be used to measure the degree of mutual adaptation between the hypothesized path analysis model diagram and the sample data obtained from the survey. The results of the model fit test are presented in Table 9.

**Table 9** Model fit test results

	c2	df	c2/df	RMSEA	GFI	NFI	IF	TLI	CFI
Ideal value			<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Default model	480.665	392	1.226	0.027	0.909	0.904	0.981	0.978	0.980

The results show that the factor structure model that influences teachers' continuance intentions to use the Chaoxing platform for blended teaching fits well. This means that the relationships between the theoretical hypotheses and the actual data are consistent, and the construction and hypotheses of the structural model are ideal.

#### Research Hypotheses Testing

The following are the results of the hypotheses testing of the model.

**Table 10** Hypotheses Testing Result of the Structural Model

Hypotheses	Statement	Result
Ha1	Confirmation influences the Perceived Usefulness of using the Chaoxing platform for blended teaching.	Supported
Ha2	Confirmation influences Satisfaction with using the Chaoxing platform for blended teaching.	Supported



Hypotheses	Statement	Result
Ha3	Perceived usefulness influences Satisfaction with using the Chaoxing platform for blended teaching.	Supported
Ha4	Perceived usefulness influences Attitude toward using the Chaoxing platform for blended teaching.	Supported
Ha5	Perceived usefulness has an influence on the Continuance Intention to use the Chaoxing platform for blended teaching.	Not supported
Ha6	Perceived ease of use influences the Perceived Usefulness of using the Chaoxing platform for blended teaching.	Supported
Ha7	Perceived ease of use influences Attitude toward using the Chaoxing platform for blended teaching.	Supported
Ha8	Satisfaction has an influence on the Continuance Intention to use the Chaoxing platform for blended teaching.	Supported
Ha9	Attitude has an influence on Continuance Intention to use the Chaoxing platform for blended teaching.	Supported
Ha10	Compatibility has an influence on Continuance Intention to use the Chaoxing platform for blended teaching.	Supported

## Discussion

This study set out to investigate university teachers' perspectives on their intention to continue using the Chaoxing platform for blended teaching in the post-epidemic era. The study built a model based on the Technology Acceptance Model (TAM), Expectation Confirmation Model (ECM), and Diffusion of Innovation (DOI) frameworks to examine factors that influence the continuance intention of university teachers to use the Chaoxing platform for blended teaching, including seven constructs: confirmation, perceived usefulness, and perceived ease of use, compatibility, satisfaction, attitude, and continuance intention. Throughout the study, 306 full-time teachers volunteered to take part in the research. This understanding not only aids technology developers in designing appealing content but also assists teachers in formulating strategies that are more likely to promote blended teaching adoption.

According to the findings of this study, several important conclusions can be drawn regarding the factors influencing university teachers' continuance intention to use the Chaoxing platform for blended teaching. The study confirms that confirmation positively influences both perceived usefulness and satisfaction, consistent with prior research. Additionally, perceived usefulness significantly impacts satisfaction and attitude, indicating that when teachers perceive the platform as useful, they are more likely to develop positive attitudes toward its use. Furthermore, perceived ease of use positively affects perceived usefulness and attitude, underscoring the importance of intuitive user interfaces in fostering favorable perceptions. However, unlike some previous studies, the direct relationship between perceived usefulness and continuance intention was found to be non-significant in this study. Instead, perceived usefulness indirectly influences continuance intention through its effects on satisfaction and attitude. This indirect pathway suggests that while perceived usefulness alone may not directly predict continuance intention, its impact is mediated by teachers' satisfaction and attitude. Moreover, satisfaction, attitude, and compatibility were identified as significant direct predictors of continuance intention, highlighting their critical role in shaping teachers' continuous use of the Chaoxing platform. These findings provide valuable insights into the complex dynamics influencing technology adoption and continuance in educational settings, suggesting avenues for improving user experience and support to enhance platform effectiveness and sustainability.

## Recommendation for Future Research

This study is concerned with the continuance intention of university teachers to use the Chaoxing platform for blended teaching. The study employs a theoretical model to analyze the factors that may influence university teachers' continuance intention to use the Chaoxing platform for blended teaching.





However, due to space limitations, many research contents have not been fully explored in this study and thus await further investigation in future research.

Firstly, although this study has identified several influencing factors through empirical analysis, there are still potential influencing factors that have not been included in the model and may affect teachers' usage behavior in different research contexts. It is recommended that future studies incorporate a variety of online education scenarios and introduce new contextual variables to modify, improve, or expand the model.

Secondly, numerous additional research models could be referenced in the field of information system usage. It is recommended that future studies focus on the construction of new research models related to teachers' intention to use online teaching platforms for blended learning, based on different theoretical frameworks. This will assist in confirming the applicability of these models in the context of online education.

Thirdly, further research is required to gain a more nuanced understanding of the impact mechanisms of key factors on teachers' intention to continue using online platforms. This will facilitate a more accurate depiction of the underlying mechanisms driving teachers' continuous usage behavior. Future studies should consider selecting one or more core factor variables and further exploring a refined research model by introducing antecedent variables or mediating variables to gain a deeper insight into teachers' usage behavior in online education.

## Conclusion

The study constructs a theoretical framework that integrates elements from the Technology Acceptance Model (TAM), Expectation Confirmation Model (ECM), and Diffusion of Innovation (DOI). This comprehensive approach provides a nuanced understanding of the factors influencing teachers' continuance intention. Confirmation was found to positively influence both perceived usefulness and satisfaction, aligning with prior research. Perceived usefulness significantly impacted satisfaction and attitude, underscoring its pivotal role in shaping teachers' perceptions and attitudes towards the Chaoxing platform. Additionally, perceived ease of use was crucial in enhancing perceived usefulness and attitude, highlighting the importance of user-friendly interfaces in promoting favorable perceptions. Contrary to some expectations, the direct relationship between perceived usefulness and continuance intention was not statistically significant in this study. However, perceived usefulness indirectly influenced continuance intention through its effects on satisfaction and attitude. This indirect pathway suggests that while perceived usefulness alone may not predict continuance intention, its influence is mediated by teachers' satisfaction and positive attitudes. Moreover, satisfaction, attitude, and compatibility emerged as significant direct predictors of teachers' continuance intention. These factors play critical roles in shaping teachers' continued use of the Chaoxing platform, emphasizing the need for strategies that enhance user satisfaction, foster positive attitudes, and ensure compatibility with educational practices. The study also highlighted the complex and multidimensional nature of factors influencing teachers' continuance intention in adopting educational technology platforms. It underscores the importance of considering a broad range of factors beyond satisfaction and attitude in designing effective adoption strategies.

In conclusion, this research provides valuable insights into the dynamics of technology adoption in educational settings, particularly concerning blended teaching platforms such as Chaoxing. By identifying and understanding these factors, educators and policymakers can better tailor strategies to support and enhance the effective use of technology in teaching and learning environments. This will ultimately contribute to the improvement of educational outcomes.

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