Factors Impacting College Student Satisfaction, Perceived Usefulness, and Continuance Intention with E-learning in Dezhou, China

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Abstract

Purpose: The study aims to identify significant factors impacting junior college students' continuance intentions to use e-learning at a public university in Dezhou, China. The research model is constructed with key constructs: perceived ease of use, perceived usefulness, system quality, information quality, self-efficacy, satisfaction, and continuation intention. **Research design, data, and methodology:** The researcher applied a quantitative method by distributing an online questionnaire to 495 respondents who are junior college students in four majors at public institutions in Dezhou, China. The sampling techniques were applied in this study, including purposive, quota, and convenience sampling. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) were used to determine the significant relationships and hypotheses testing results. **Results:** The findings demonstrate that satisfaction strongly influenced continuance intention. Information quality, perceived ease of use, system quality, and perceived usefulness significantly impact satisfaction. Perceived ease of use and self-efficacy has a significant impact on perceived usefulness. **Conclusions:** University administrators and teaching staff should pay attention to developing significant factors that encourage students to continue using e-learning more effectively. Educators should consider reforming future learning according to the findings of this research, which will help students acknowledge and recognize the effectiveness of online education.

Keywords: E-Learning, System Quality, Information Quality, Satisfaction, Continuance Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

E-learning is a brand-new approach to education that offers a new platform for teaching computer science. The merging of theoretical instruction and computer science experiments will lead to new approaches to teaching and learning the subject. It will eventually become the new fashion in computer science education (Zhang & Qi, 2005).

E-learning platforms allow students to study on their own time and at their own pace. The content available on these many platforms can be accessed anytime by students. Moreover, e-learning cuts expenses and time and contributes to environmental restoration by removing the need for travel between locations (Agarwal, 2021).

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The current inescapable development trend in education is integrating the Internet and learning. Integration of theoretical instruction with computer science experiments in this new teaching-learning environment will lead to fresh suggestions for computer science teaching and learning reform. It will eventually become the new standard (Zhang & Qi, 2005).

Online education is well-liked as an addition to the existing educational system on both the consumer and capital markets, which draws more experts and cutting-edge technology into this sector and speeds up the industry's growth. The sources for e-learning materials are dispersed across numerous suppliers. Most of the the top-notch online learning materials are in English. Using e-learning, it is challenging for students to consistently get a full college education (Ma & Yang, 2016).

According to junior college students' learning satisfaction surveys, productivity and effective instruction are strongly correlated (Lan & Luo, 2022). In order to construct a questionnaire that accurately captures the current state of online learning satisfaction in China, this study examined the factors that have a significant impact on E-learning for junior colleges. This questionnaire was developed based on prior research. Given the aforementioned factors, a quantitative study is required to look into how junior college students in Dezhou, China feel about six crucial latent variables related to e-learning.

2. Literature Review

2.1 E-Learning in China

The Chinese Ministry of Education designated 68 universities as the initial testing grounds for online education in 1990, marking the start of the country's e-learning revolution. Chinese e-learning has made marginal progress after more than thirty years of development. Further to the marked size discussed in the preceding section, this study also looked at the proportion of participants in the E-learning program at universities.

However, there are still certain problems with online learning in our country, the biggest of which is the need for more academic research results. As of March 2023, journal articles and dissertations comprised almost 576,200 academic publications in China's higher education sector, according to search results from China National Knowledge Network (CNKI), the most significant official academic website in the nation. Only 20,092, primarily qualitative studies, had an element for online learning. There are few quantitative studies. Confirmatory factor analysis and structural equation modeling as statistical analytic methods have received far less study.

2.2 Technology Acceptance Model (TAM)

Computer attitudes are influenced by both perceived utility and perceived usability. TAM was the foundation for earlier studies on how IS processes behavioral intents and IT usage (Tate, 2006). Lucas and Spitler provide a fair evaluation of several past experiments. TAM is the name of Fishbein and Ajzen's version of TRA (Gefen & Straub, 1997). The TAM model for user acceptance of IS was created to illuminate the behavioral purpose underlying system use (Adams et al., 1992). The most important criteria, according to TAM that explain behavioral intentions to use IS and systems are perceived usability and efficacy (Fenech, 1998).

The TAM notion was frequently used in academic and pedagogical studies to predict participants' attitudes or behavioral intentions toward a certain educational technique. Perceived ease of use, perceived usefulness, and perceived efficacy of the target educational system are all considered since attitude is the main exogenous variable to the endogenous variable satisfaction. Consequently, the conceptual framework's independent variables were perceived utility and ease of use.

2.3 Information Systems Success Model (ISSM)

Studies have shown that system quality improves perceived usability, affecting users' propensity to shop online. DeLone and McLean created the IS Success Model based on research done in the 1970s and 1980s (ISSM). The key principle of the idea is that a temporal process model may account for how people embrace and use IS: The many features an information system provides are defined by the two fundamental elements of system quality and information quality. Users and administrators can use these features by interacting with the system (Ahlemann, 2009). By carefully examining the literature on numerous factors crucial to the creation of information systems, the ISSM was created. According to some sources, the ISSM is one of the most well-known techniques for determining whether a particular information system is successful (Davis, 1989).

Academic educational surveys have previously forecasted student satisfaction or desire to continue with a certain teaching technique using the ISSM framework, which is nearly identical to TAM. Given the thoroughness of this investigation, system quality, information quality, and satisfaction are acceptable for quantitative research. Therefore, the conceptual framework selects these three variables.

2.4 Expectation-Confirmation Theory (ECT)

Users assess and decide on the IS's perceived usefulness (PU) based on the reality they face. They thirdly evaluate

their level of confirmation and utility perception to ascertain their level of contentment. They also predict IS continuing intention using their aggregate PU and enjoyment, even though utility and satisfaction impact subsequent intention. In order to examine long-term website usage, the value of enjoyment was added to the ECT model based on ECT. Their research found that perceived usefulness, satisfaction confirmation, and enjoyment all substantially impacted a person's propensity to visit a website again. Lee evaluated whether consumers planned to continue utilizing online learning using the expectation-confirmation paradigm (Davis, 1989).

Similar to TAM and ISSM, the ECT framework has been utilized in academic surveys in education to predict student satisfaction with a particular teaching method or willingness to continue. Due to the thorough nature of this study, perceived usability, perceived usefulness and satisfaction, and continuation intention are acceptable for quantitative research. Therefore, the conceptual framework selects these four variables.

2.5 Information Quality

Information quality is the degree to which consumers agree that the information is accurate, timely, complete, and relevant. It also refers to the quality of the information displayed on the website (Chang, 2013). Information quality refers to the output of the information management system's evaluation system (Huang et al., 2015). Information quality is defined as information systems that contain reports with high standards for form, content, and expectations (Cheng, 2019). Information quality refers to the mix of information elements and quality components in the system's content, which satisfies the needs of users seeking knowledge during use (Hussein et al., 2021). There is a lot of information quality, and it is better reflected by important characteristics, including accuracy, feedback, response speed, ease of use, and completeness (Cheng, 2014). The functional needs learners have while utilizing the learning system—accuracy, speed, content quality, flawless performance, convenience, and so forth—refer to information quality (Eom, 2012). Information with high correctness, completion, quick response, integrity, and quality control is considered high quality (Pour et al., 2021). Thus, a hypothesis is indicated:
H1: Information quality has a significant impact on satisfaction.

2.6 Perceived Ease of Use

Perceived ease of use greatly impacts users' initial choice to utilize electronic libraries. Utility and ease of use are also part of the learning product selection prediction behavior. Users choose a learning product when they believe it will be useful, known as perceived ease of use (Cheng, 2020). A part of the learning product selection prediction behavior is utility and usability. Because perceived use is practical and efficient, a decision is taken (Hussein et al., 2021). As users use a platform for online learning, their opinions of how usable it is are closely correlated with user satisfaction. The most common way to describe perceived usability is "Feel the product is excellent, so utilize it" (Cheng, 2018). Perceived ease of use is a major determinant of whether people can utilize electronic libraries immediately (Franque et al., 2020). User happiness correlates with users' perceptions of the platform's usability when they utilize it for online learning (Cheng, 2020). Therefore, this research hypothesizes that:
H2: Perceived ease of use has a significant impact on satisfaction.
H3: Perceived ease of use has a significant impact on perceived usefulness.

2.7 Self-Efficacy

"Self-efficacy" refers to the ability to foresee one's potential, gauge one's capacity for self-improvement, and forecast one's academic accomplishment (Turker & Kahraman, 2021). Self-efficacy is the term used to describe students' self-confidence in the outcomes of their learning activity (Fokides, 2017). The overall framework of teachers' self-efficacy, which manifests in multiple fields, has a multi-level structure. This self-generated energy is more effective at learning and positively impacts all endeavors (Edmund et al., 2020). Individual learning abilities are not all equal in terms of self-efficacy because people's abilities, characters, temperaments, and environments for growth vary (Jiang et al., 2020). Relevant studies have demonstrated that self-efficacy has a negligible effect on predicting success effectiveness and that self-esteem expression levels are more crucial (Tate, 2006). Hence, a hypothesis is developed:
H4: Self-efficacy has a significant impact on perceived usefulness.

2.8 System Quality

Customer happiness, the system's most important prerequisite for effectiveness, is impacted by the system's and the information's quality. User happiness and system use are directly related to system quality (Eom, 2012). A metric used in system analysis and development to evaluate the information processing system is called "system quality" (Cheng, 2019). Naturally, these standards are based on user needs. However, other factors are crucial to user satisfaction regarding purchasing decisions, such as exterior display, technological performance, privacy security, etc. (Hussein et al., 2021). System quality directly impacts users' perceived value and satisfaction, showing a proportionate relationship

(Chang, 2013). System quality refers to how information functions, including its correctness, usability, efficiency, adaptability, safety, and other aspects (Pour et al., 2021). The system's effectiveness will influence the desired certainty level when students utilize e-learning systems (Cheng, 2014). Consequently, this study put forward a hypothesis:

H5: System quality has a significant impact on satisfaction.

2.9 Perceived Usefulness

Users make the assumption when selecting a learning system, "Will utilizing it to learn to increase my academic performance?" must assess their actions after acquiring good trust and recognition in order to determine whether it is genuinely perceived as useful (Cheng, 2018). Users' use of online learning platforms is significantly predicted by perceived usefulness, and it is essential to use this prediction to alter users' perceptions and attitudes throughout subsequent learning (Hsim & Lin., 2017). The usefulness of an online learning platform is positively correlated with users' continuous use of it (Cheng, 2014). Users' expectations and wishes for the online education platform make up for perceived usefulness, an internal component supporting users' ongoing use and self-improvement (Hussein et al., 2021). *Perceived usefulness* is a crucial internal driving force that should be recognized in the decision-making process for consumers choosing an online platform for education (Cheng, 2020; Zhong et al., 2022). Thereby, the research indicates a followed hypothesis:

H6: Perceived usefulness has a significant impact on satisfaction.

2.10 Satisfaction

Examining and assessing the user experience yields the summative practical result of the user's happiness with the learning system (Turker & Kahraman, 2021). The user's sense of quality, such as the quality of the information and the system, is necessary for complete user enjoyment (Tate, 2006). The blogging platform's technological aspects can greatly impact how users feel, like user happiness (Jiang et al., 2020). Customer satisfaction surveys can be used to determine how well your product or service is performing in the general e-learning market. User happiness is a typical metric used to assess a system's effectiveness. Customer satisfaction surveys can be used to evaluate how your offering stacks up against the e-learning market (Moe et al., 2010). A person's subjective assessment of the value of a relationship, which is a psychological condition, is referred to as "degree of satisfaction." When customers' demands are met, they are content, and there is a correlation between their expectations and how they feel after utilizing the good or service (Cheng, 2018). Based on above discussion, a hypothesis is presented:

H7: Satisfaction has a significant impact on continuance intention.

2.11 Continuance Intention

The main causes of students' persistent mixed e-learning use intentions are explained by the e-learning stream driven by their intents (Franque et al., 2020). Users' pleasure with online learning, sense of validation, and perception of usefulness is significantly influenced by the quality of the information they receive. These three factors collectively directly or indirectly explain their intention to continue online learning (Cheng, 2019). While they focus more on confirming their expectations when developing satisfaction levels, satisfied users are important contributors to continuing information system utilization intents (Chiu et al., 2011). Perceived usefulness has a larger direct impact on online learning continuing intention than perceived ease of use because users place significant weight on their confirmation of online learning expectations when generating satisfaction, which is the most important direct driving element (Cheng, 2020).

3. Research Methods and Materials

3.1 Research Framework

The researcher used TAM, ISSM, and ECT, as well as three earlier tentative Frameworks, to build the conceptual framework. Researchers may more easily identify the interactions between the latent variables that serve as crucial indicators of how successfully Dezhou students are utilizing e-learning, thanks to the conceptual framework used in this study's illustration of all latent variables. The study reached this conclusion by drawing on several other academic studies, including Chen and Tsai (2019), who stated that while satisfaction had to be affected by information quality, the reverse was not true. According to studies, perceived simplicity of use significantly negatively impacted how satisfied the average individual was with effectiveness (Fenech, 1998). The fundamentally beneficial influence of perceived ease of use on perceived usefulness (Fenech, 1998). The conceptual framework was created based on these structures, as depicted in Figure 1.
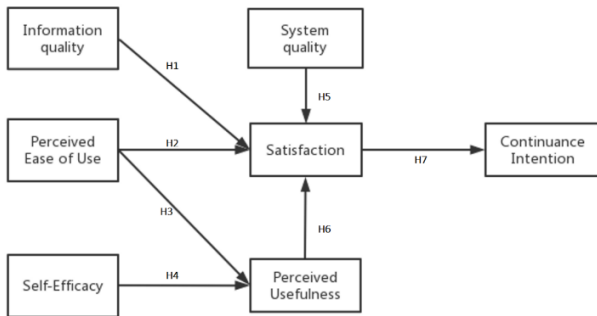
Figure 1: Conceptual Framework

H1: Information quality has a significant impact on satisfaction.
H2: Perceived ease of use has a significant impact on satisfaction.
H3: Perceived ease of use has a significant impact on perceived usefulness.
H4: Self-efficacy has a significant impact on perceived usefulness.
H5: System quality has a significant impact on satisfaction.
H6: Perceived usefulness has a significant impact on satisfaction.
H7: Satisfaction has a significant impact on continuance intention.

3.2 Research Methodology

This study was conducted among junior college students of the School of Law, Dezhou University, School of Fine Arts, School of Foreign Languages, and School of Music about their online learning experiences. The quantitative survey approach used in this study is the most efficient research methodology to gather information about students' continuous use intention and ascertain their psychological responses. The questionnaire consists of three parts: screening questions, a five-point Likert scale of measuring items, and a demographic profile.

Before collecting the data, the validity and reliability of the questionnaire are validated. The item-objective congruence (IOC) index was used to evaluate the measuring items by three experts, Ph.D., and research professionals. The results are that all items are approved at a score of 0.6 or above. According to the reliability test results, the pilot test of 50 samples is measured by Cronbach's Alpha coefficient value. Consequently, all measures were greater than 0.7, indicating adequate strength of association (Nunnally & Bernstein, 1994). Confirmatory factor analysis (CFA) and structural equation modeling (SEM) were used to determine the significant relationships and hypotheses testing results.

3.3 Population and Sample Size

The only public university in Dezhou, China, had four junior colleges representing four distinct specialties as its target population. The law school, the music school, the school of foreign languages, and the school of fine arts are among them. The minimum sample size for the demanding methodological approach in the structural equation models, according to Hair et al. (2010), should be 200–500 respondents. Therefore, from a population of 770 students, 500 students were chosen as the final sample size after screening and quota selection.

3.4 Sampling Technique

The sampling techniques were applied in this study, including purposive, quota, and convenience sampling. Purposive sampling was selected from 770 junior college students in four majors at public universities in Dezhou, China. A quota system was used to select 500 respondents from each of the four universities for the final stage of the sample, as shown in Table 1. Convenience sampling is to distribute online questionnaires to participants. After the questionnaire was collected, there were 495 valid and five invalid data.

Table 1: Sample Units and Sample Size

Target Population	Subjects	Population	Proportional Sample Size
Junior college Student at Dezhou University	Art	119	77
	Law	177	115
	Music	203	132
	Foreign Language	271	176
Total		**770**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The complete demographic information for the 495 respondents is shown in Table 2. Males comprised 40.8% of the sample, while females comprised 59.2%. Among the respondents, 15.4% were enrolled in the Academy of Fine Arts, 26.4% in the Academy of Music, 35.2% in the Academy of Foreign Languages, and 23% in the Academy of Law. First year students account 9.9 percent, 75.2% in second year, 14.9% in third year, and 0% in fourth year.

Table 2: Demographic Profile

Demographic and General Data (N=495)		Frequency	Percentage
Gender	Male	202	40.8
	Female	293	59.2
College Belong	Art	76	15.4
	Law	114	23
	Music	131	26.4
	Foreign Language	174	35.2
Academic Year	Freshman	49	9.9
	Sophomore	372	75.2
	Junior	74	14.9
	Senior	0	0%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

The measures of the observed variables were analyzed based on confirmatory factor analysis (CFA). The factor loading and permissible values for each observed variable demonstrated the quality of fit of the research matrix. (Hair et al., 2006). According to Table 3, an acceptable factor loading threshold was 0.5 or higher (Hair et al., 2006). In addition, Fornell and Larcker (1981) suggested that CR and AVE values of 0.7 or more and 0.5 or more were considered acceptable. Table 3 demonstrates that the average extracted variance (AVE) values were all greater than 0.50, the factor loading values were above 0.50, and the composite reliability (CR) was over 0.70. (Bagozzi & Yi, 1988; Hulland, 1999). Therefore, this study confirms convergent validity with CFA's results.

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Perceived Ease of Use (PEOU)	Vululleh (2018)	3	0.882	0.836-0.878	0.895	0.739
Perceived Usefulness (PU)	Vululleh (2018)	4	0.884	0.717-0.815	0.895	0.604
System Quality (SQ)	Masrek and Gaskin (2016)	4	0.857	0.723-0.824	0.854	0.595
Information Quality (IQ)	Masrek and Gaskin (2016)	3	0.905	0.750-0.800	0.826	0.613
Self-Efficacy (SE)	Dubey and Sahu (2023)	3	0.896	0.785-0.823	0.845	0.645
Satisfaction (S)	Cheng (2018)	4	0.878	0.767-0.825	0.872	0.630
Continuance Intention (CI)	Cheng (2018)	3	0.897	0.749-0.778	0.812	0.590

The absolute threshold of the chi-square value to the degree of freedom (CMIN/DF), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), normalized fit index (NFI), Tucker Lewis index (TLI), and root mean square error of approximation (RMSEA) all compared the characteristic, as shown in Table 4. Therefore, all the goodness of fit indicators used in the CFA testing for this academic work were appropriate.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	1.150
GFI	> 0.90 (Sica & Ghisi, 2007)	0.959
AGFI	> 0.80 (Sica & Ghisi, 2007)	0.947
RMSEA	< 0.05 (Pedroso et al., 2016)	0.017
CFI	> 0.90 (Hair et al., 2006)	0.994
NFI	> 0.90 (Hair et al., 2006)	0.956
TLI	> 0.90 (Hair et al., 2006)	0.993
Model Summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, RMSEA = Root mean square error of approximation, CFI = Comparative fit index, NFI = Normed fit index and TLI = Tucker–Lewis index

Table 5 demonstrates the AVE values to determine the discriminant validity of each factor. The discriminant validity is assured if the square root of the AVE value for each architecture is greater than the square root of the AVE value for each correlation (Fornell & Larcker, 1981). Hence, the results validate the convergent validity and discriminant validity of this study.

Table 5: Discriminant Validity

	IQ	PEOU	SE	SQ	SAT	PU	CI
IQ	0.783						
PEOU	0.247	0.860					
SE	0.235	0.311	0.803				
SQ	0.188	0.141	0.250	0.771			
SAT	0.375	0.320	0.309	0.236	0.794		
PU	0.305	0.299	0.285	0.233	0.332	0.777	
CI	0.262	0.318	0.302	0.228	0.419	0.442	0.768

Note: The diagonally listed value is the AVE square roots of the variables
Source: Created by the author.

4.3 Structural Equation Model (SEM)

In this study, the structural equation model (SEM) verification came after the CFA evaluation. A specific set of linear coefficients is evaluated using the SEM method to determine whether or not the suggested causality

explanation matches. Additionally, SEM examines the relationship between the qualities in the supplied matrix causally and accounts for any bias or dishonesty in the coefficient. (Rattanaburi, 2021). Table 6 demonstrates that even after being rectified with AMOS version 24, the combined values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA were all over the permissible limits. The results show that the SEM's goodness of fit was proven.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	1.958
GFI	> 0.90 (Sica & Ghisi, 2007)	0.925
AGFI	> 0.80 (Sica & Ghisi, 2007)	0.907
RMSEA	< 0.05 (Pedroso et al., 2016)	0.044
CFI	> 0.90 (Hair et al., 2006)	0.960
NFI	> 0.90 (Hair et al., 2006)	0.922
TLI	> 0.90 (Hair et al., 2006)	0.954
Model Summary		**In harmony with empirical data**

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, RMSEA = Root mean square error of approximation, CFI = Comparative fit index, NFI = Normed fit index, and TLI = Tucker–Lewis index

4.4 Research Hypothesis Testing Result

The results presented in Table 7 indicate that satisfaction directly and significantly impacted continuing intention, with a standardized path coefficient of 0.443 (t-value = 8.057***) representing the largest impact effect in this quantitative approach. At 0.283 (t-value = 5.619***), information quality has the second-strongest significant interaction effect on satisfaction.

Furthermore, perceived ease of use had a significant impact on perceived usefulness at 0.270 (t-value at 5.392***), self-efficacy had a significant impact on perceived usefulness at 0.255 (t-value at 4.923***), and perceived ease of use had a significant impact on satisfaction with the at 0.236 (t-value at 4.758***). Moreover, perceived usefulness was investigated and shown to significantly influence satisfaction with the of 0.230 (t-value = 4.521***). As a result, system quality had the least impact on satisfaction in this measurable study, with a 0.149 (t-value of 3.133**) significance level.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: IQ→SAT	0.283	5.619***	Supported
H2: PEOU→SAT	0.236	4.758***	Supported
H3: PEOU→PU	0.270	5.392***	Supported
H4: SE→PU	0.255	4.923***	Supported
H5: SQ→SAT	0.149	3.133**	Supported
H6: PU→SAT	0.230	4.521***	Supported
H7: SAT→CI	0.443	8.057***	Supported

Note: *** p<0.001, ** p<0.01, * p<0.05
Source: Created by the author

Table 7's findings show that information quality significantly predicts satisfaction, with a standardized path parameter threshold for this structural approach of 0.283 in **H1,** the quality of the information has a big impact on satisfaction. The TAM theoretical model further argues that information quality is the primary direct influencing component of satisfaction and that people who observe technology usage as undemanding would tend to perceive that it is useful and useful (Dubey & Sahu, 2023). The level of information quality has a beneficial impact on satisfaction (Dishaw & Strong, 1999).

With a standardized path coefficient of 0.236 in **H2**, the research showed that pleasure is one of the key aspects of perceived ease of use. Moreover, student happiness is directly influenced by perceived usability; consequently, improving satisfaction will come from matching the appropriate learner profile with the curriculum. Similar research has demonstrated how AI can improve learning (Igbaria, 1993). Several sociologists assert that perceived ease of use significantly impacts how satisfied consumers are with products (Gefen & Straub, 1997).

The statistical score of the standard coefficient of active influence was 0.270, and **H3** concluded that there was a significant association between system quality and satisfaction. According to several earlier scholarly publications, evidence suggests authors like Venkatesh and Davis (2000) say a particular perceived ease of use truly does directly impact perceived usefulness, rather than the other way around. The impression that things are simple to use greatly impacts many teachers. Perceived usability and efficacy are positively influenced by perceived simplicity of use (Davis et al., 1989).

With a common coefficient value of 0.255, **H4** also showed that self-efficacy substantially impacted participants' perceptions of usefulness. Therefore, this experiment's results are extremely important to administrators and teachers in higher education. The study's key finding is that simplicity of use significantly impacts self-efficacy and attitudes toward use (Igbaria, 1993). The findings demonstrate that students' perceptions of the effectiveness of employing computers as student teachers are directly influenced by their level of self-efficacy (Gefen & Straub, 1997).

With a common coefficient value of 0.149, the weakest influence point in this academic study, **H5** further supported that system quality greatly affected pleasure in this investigation. The system, service, and information quality are three aspects of quality. At the same time, usage

intention, actual use, and user satisfaction are three dimensions of quality that should all positively impact the net benefit (Chen & Tsai, 2019). According to some earlier studies, system quality positively impacts contentment (Ahlemann, 2009).

For **H6,** it was found that contentment and perceived usefulness had a tangible link, with a standard correlation of 0.230. On satisfaction, perceived usefulness has a significant impact (Adams et al., 1992). The results show that perceived utility and expectation fulfillment positively and negatively affect user happiness. Relationship marketing positively impacts a patient's symptoms, especially their inclination to switch firms, but expectation confirmation negatively impacts perceived usefulness (Fokides, 2017).

The observable statistic results for **H7** supported the hypothesis that contentment considerably impacted continuance intention. The largest significant impact in this quantification research is shown by the common coefficient value of 0.443. The study's findings indicate that task characteristics and technical aspects impact students' perceived TTF, which influences their continuation intention and perceived learning influence by relying only on confirmation and satisfaction of a typical example (Davis, 1989).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study aimed to identify the variables that significantly affected junior college students' satisfaction with their online education and intention to continue their studies in Dezhou public universities in China. Seven hypotheses are presented in the conceptual framework: perceived utility, perceived ease of use, system quality, information quality, self-efficacy, and satisfaction. The relationship between persistence intent. 495 junior college students with e-learning experience engaged in the questionnaire replies in order to ascertain how these variables interacted.

Confirmatory factor analysis (CFA) determines whether the data fit into a particular theoretically established measurement model. Structural equation models (SEM) were used like this to evaluate the relationship between real and potential factors impacting satisfaction and continuance intention and test hypotheses. It is discovered that the most important and potent relationship exists between satisfaction and continuing intention. The standardized path coefficient is low and perceived utility, perceived system quality, and perceived ease of use all substantially impact satisfaction.

5.2 Recommendation

Following are some useful recommendations from the researchers for future online education based on this volume of research findings. First, this study's satisfaction construct impacts students' intentions to continue e-learning. E-learning is a popular choice among students due to its favorable effects on their well-being. As a result, educational institutions should fully develop and implement e-learning to increase student acceptance of and usage of this platform for learning.

Second, students' intention to continue studying is increased by positive e-learning pleasure. In this study, four possible characteristics could impact student satisfaction, with information quality being the most significant. Therefore, in the future, teaching units should focus on effectively enhancing the information quality of students' e-learning, which is reflected in further optimizing the program design of the online learning platform and providing the relevant tutorial documents and manual assistance so that students clearly understand how much simpler and clearer the various learning operations of the online learning platform. Far more practical than conventional classroom instruction.

This recommendation will successfully increase students' positive satisfaction with using an e-learning platform, thereby increasing continuance intention. Also, from the standpoint of perceived usefulness, teachers should offer a sizable number of textbooks on e-learning platforms following e-technical learning's qualities. Many projects can be accomplished on a series of increasingly complicated professional software operations based on the professional characteristics of each college specialty, and an e-learning platform can offer video lectures outside of class. Students may discover that effective learning can be fostered through e-learning as a result of this helping them to tackle their learning challenges.

Teachers should create appropriate learning plans for students following the professional characteristics of each school, reasonably refine interface functions, and create rich and useful information regarding self-efficacy, system quality, and information quality. Finally, students' satisfaction with online learning will be positively improved based on the circumstances above when teachers emphasize e-perceived learning's ease of use, perceived usefulness, information quality, system quality, and students' sense of self-efficacy. This will increase their continued intention to use the learning platform.

5.3 Limitation and Further Study

This quantitative research has several limitations. Only one public university in Dezhou, China, was used as the

population and sample, while only a maximum of seven potential variables were within the conceptual framework. The next two perspectives are further explorations as a consequence. Include more areas of China in the scope of the study. Investigating various technology adoption theories, such as Rational Behavior Theory (TRA), Planned Behavior Theory (TPB), and Information Systems Success Model, is crucial for creating conceptual frameworks. (ISSM). Furthermore, future researchers should consider to conduct qualitative study for better insight and interpretation.

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