Chinese Students' Continued Intention to Use Liulishuo App to Learn English Speaking Skills in Non-mandatory Environment: A Case in a Chinese University

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***Abstract*—This study examines the potential factors influencing Chinese university students' continuance intention to use Liulishuo app to learn English speaking skills in a non-mandatory environment. This study empirically integrated post-acceptance model, Technology Acceptance Model (TAM), and introduced new variable perceived enjoyment. Structural Equation Modelling (SEM) was applied to estimate the proposed research framework based on the survey data collected from 350 Chinese university students who had experience of using the app during pandemic. The structural model confirms perceived usefulness and perceived enjoyment significantly influence students' intentions to continue using Liulishuo app to learn English speaking skills. This study also provides valuable theoretical contributions in developing and testing related theories and practical implications to incorporating technology in higher education in China, and the instruction orientation for higher education teachers.**

***Keywords*—continuance intention, Liulishuo app, mandatory environment, university students, perceived usefulness, perceived enjoyment**

I. Introduction

The worldwide technical environment has undergone substantial changes as a result of the fast expansion of Information Systems (IS), social media platforms, and intelligent devices such as smartwatches, smartphones, and mobile apps [1]. These changes significantly contributed to the educational paradigm during the pandemic [2]. In response to the pandemic's impacts, educational institutions undertook deliberate and collaborative endeavors to establish digital learning platforms. These endeavors entailed the usage of suitable educational technologies and resources to meet the remote learning needs of students [3]. A similar occurrence took place in China. As per the Chinese Ministry of Education (MOE) [4], it is recommended that all university courses transition from in-person sessions to online courses. Universities, educational institutions, and instructors can utilize diverse resources and platforms to guarantee the achievement of students' learning needs and objectives. The rise of mobile learning may be credited to the significant number of mobile phone users in China, now totaling 1.683 billion individuals, as well as the widespread availability of internet access [5]. As a result, many mobile learning platforms and applications were used as required teaching tools [6, 7]. M-learning is the delivery of educational activities using mobile devices and wireless internet, enabling students to learn anytime and anywhere [8]. By employing mobile learning (m-learning), educators can evaluate their teaching and learning methods by developing a more versatile and flexible educational framework [9].

Accordingly, the Liulishuo app, an English speaking application developed in China, has been widely embraced by numerous universities and colleges [10]. Its distinct features of automatic speech recognition (ASR), Automatic Speech Evaluation (ASE), and Automatic Speech Feedback (ASF) based on artificial intelligence (AI) algorithm improved students' speaking skills to a great extent [11–14].

However, though the application of Liulishuo app was under the instruction and assistance of university educators, there are some challenges. The utilization of mobile phone interfaces may lead to a sense of detachment and lack of concentration among students, as the application's interactions are solely determined by its predetermined algorithm [15]. Besides, in an obligatory educational setting, students are compelled to engage in speaking exercises exclusively through the use of an application. Consequently, concerns arise over the voluntary nature of participation and the level of desire towards learning [16]. In addition, the learning instructions have already been delivered by instructors in a mandatory environment, hence raising concerns about students' abilities to independently organize their learning content. While extensive research has been conducted in the field of education to investigate the acceptance and utilization of mobile-assisted learning, the bulk of these studies have been conducted within a mandatory educational setting [17]. Limited research has been conducted on the inclination of students to persist in using the Liulishuo app for the purpose of enhancing their English speaking skills in a non-mandatory environment. However, capturing those first few users is the first step to implementing mobile learning successfully. One of the most significant concerns that many mobile learning providers and educators must pose is how to keep these mobile learners and encourage their continued usage [18].

The present study thus aims to investigate the Chinese university students' continuance intention to use Liulishuo app to learn English speaking skills in a non-mandatory environment. The study employs a quantitative research method with an integrated TAM and post-acceptance model to analyze the potential influencing factors. This paper contains five parts, part II discusses the theoretical background, part III illustrates the proposed model and hypotheses. Part IV explains the results and discussions. Part V provides the conclusions, including the implications, limitations, and future study.

II. Theoretical Background

There exist two main areas of study for IS adoption studies. The first area addresses pre-adoption intention and behavior, such as Technology Acceptance Model (TAM), IS success model, and Unified Theory of Acceptance and Use of Technology (UTAUT). It investigates the factors influencing user's intention and perception towards a particular technology system. The other area focuses on post-adoption decisions, it examines user's intention to continue using a particular technology products or services. The related theories are Expectation Confirmation Theory (ECM), post-acceptance model of IS [19], and technology continuance theory.

A. TAM

The Technology Acceptance Model (TAM) was originally introduced by Davis [20] and is based on the theory of reasoned action (TRA). Davis *et al*. [21] assert that the Theory of Reasoned Action (TRA) is employed to define the activities of individuals, whilst the Technology Acceptance Model (TAM) is utilized to predict and elucidate behaviors associated with computers. Hence, the Technology Acceptance Model (TAM) is utilized across diverse contexts and has undergone rigorous scientific validation, including its application in the realm of e-platform learning [22–24], mobile-assisted language learning [25–27], web 2.0 technologies in teaching and learning [28–30].

There are four variables that make up technology acceptance model, Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude (ATT), and Behavioral Intention (BI) [20]. However, in various studies, TAM can be integrated with other models to be extended [31–33], or incorporates other constructs [34–36].

B. Post-Acceptance Model

The continuous utilization of Information Systems (IS) has become crucial for its sustained effectiveness, owing to the ongoing progress and advancements in technology. This shift emphasizes the importance of continuous usage rather than one-time implementation for the long-term viability of IS [37]. Therefore, concepts and models related to the post-acceptance phase hold equal significance to those focused on the pre-adoption phase [1, 19]. The post-acceptance theory starts with Expectation Confirmation Theory (ECT), which suggests that the satisfaction and usage patterns of users after applying a product or service are influenced by their perception of its performance and its ability to match their pre-existing expectations [38]. ECT concerns both pre- usage and post-use of information product. Then, Bhattacherjee [19] extended ECT and introduced post-acceptance model. The post-acceptance model places greater emphasis on understanding the user's intention to persistently utilize an Information System (IS) rather than their initial adoption. This model is deemed to possess more effectiveness compared to the ECT [1].

III. Model and Hypotheses

A. The Proposed Research Model

The post-acceptance model of Information Systems (IS) is based on the theoretical framework of Expectation-Confirmation Theory (ECT), which emphasizes the significance of IS usage after its initial adoption [39]. According to the model, the continuing intentions of IS use are determined by users' satisfaction and Perceived Usefulness (PU). The satisfaction of users is dependent upon the confirmation of their expectations derived from previous IS using experience and their perception of its usefulness [40, 41]. The confirmation levels of users have an impact on their perception of usefulness after accepting an input [19]. Further, the proposed research model has been expanded by incorporating perceived ease of use and perceived enjoyment as supplementary variables to broaden the model's applicability and comprehensiveness [39, 42–44]. The currently available amount of research provides strong evidence that these variables significantly influence the ability to forecast the continuation of information systems across various contexts. Accordingly, the proposed conceptual model is illustrated in Fig. 1. It consists of six constructs, and the operational definitions of the constructs in this study are presented in Table 1.

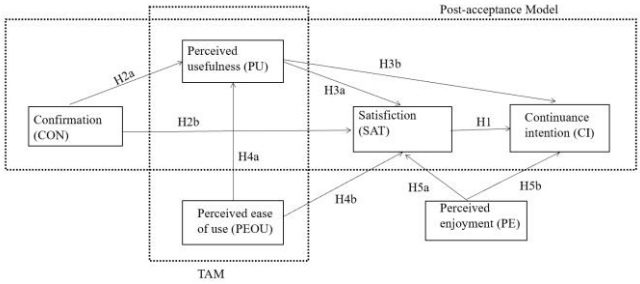

Fig. 1. Proposed research model (Source: adapted from Bhattacherjee [19]).

Table 1. Definitions of the constructs employed in this study

Construct	Definition
SAT	Students' perceived satisfaction when using Liulishuo app.
COM	The assessment of students perceived academic achievement and the investigation of the degree to which their expectations are confirmed.
PU	Students' perception of preliminary anticipation regarding learning with Liulishuo app.
PEOU	Students' perception of the level of effort necessary to effectively utilize Liulishuo app.
PE	Students' level of happiness experienced during the utilization of Liulishuo app.
CI	Students' expressed intention to sustain their usage of Liulishuo app.

B. Hypotheses

1) Satisfaction

Satisfaction can be conceptualized as a construct that is influenced by individuals' expectations about using information systems and the extent to which those expectations are confirmed [45]. The notion of satisfaction holds significant explanatory power in understanding the ongoing utilization of items or services by users [46]. The impact of satisfaction on continuance use intention of technology can apply in various contexts, including mobile commerce [47–49], mobile healthcare [50, 51], and mobile marketing [52, 53]. In the context of education, Lu *et al*. [54] argue that learners who have a sense of satisfaction and demonstrate high levels of performance are more likely to possess the necessary self-confidence to successfully finish Massive Open Online Courses (MOOCs). Daneji *et al*.'s [55]

findings echoed the results of Lu *et al*.'s [54], they also found that students' satisfaction positively influences their continuance intention on using MOOCs. Empirical studies on online learning claim that satisfaction is a significant predictor on continuance intention of technology [56–59]. Accordingly, this study hypothesizes:

H1: Satisfaction positively affects continuance intention of the Liulishuo app in non-mandatory setting.

2) Confirmation

Confirmation is defined as the extent to which users perceive the alignment between their expectations of using information systems and the actual performance of the IS Bhattacherjee [19]. When individuals perceive the anticipated advantages of IS utilization, a constructive confirmation occurs, resulting in elevated levels of contentment. Nevertheless, if the performance of the information IS does not achieve the anticipated level, it gives rise to disconfirmation, ultimately leading to user dissatisfaction [60–62]. In education setting, previous studies proved that the levels of confirmation positively contribute to the user's perceived usefulness regarding to learning with technologies [54, 63, 64]. Perceived usefulness refers to the subjective evaluation made by students regarding the anticipated advantages they expect to derive from engaging in information system [65], in this study, the mobile app Liulishuo is considered the information system.

In addition, the empirical studies proposed that confirmation has positively relationship with students' satisfaction [55, 57, 66, 67]. The study posits that when students acknowledge that the learning effects of Liulishuo app aligns with their expectations, they are inclined to perceive this mobile app as advantageous, efficient, user-friendly, and valuable. As a result, this will enhance their general satisfaction with Liulishuo app [65]. Hence, this study hypothesizes:

H2a: Confirmation positively affects students' perceived usefulness when learning English speaking skills with Liulishuo app in non-mandatory setting.

H2b: Confirmation positively affects students' satisfaction when learning English speaking skills with Liulishuo app in non-mandatory setting.

3) Perceived usefulness

According to the Davis [20], Perceived Usefulness (PU) refers to an individual's experience that utilizing a specific technology will enhance their job performance. An information system equipped with appropriate technological platform incorporates of proper pedagogical approaches would have an impact on a learner's perception regarding the potential enhancement of productivity and academic achievement through the utilization of the system [64]. Numerous empirical studies have verified that perceived usefulness is a significant predictor of satisfaction and continuance intention of information system [68, 69]. In education area, studies showed that students' perceived usefulness of an online learning instrument positively related to their satisfaction on the learning performance and the continuance intention to use the learning tools [70–72]. Therefore, the following hypothesis are proposed.

H3a: Perceived usefulness positively affects students' satisfaction when learning English speaking skills with Liulishuo app in non-mandatory setting.

H3b: Perceived usefulness positively affects students' continuance intention when learning English speaking skills with Liulishuo app in non-mandatory setting.

4) Perceived ease of use

The construct of Perceived Ease of Use (PEOU) is a component of the Technology Acceptance Model (TAM) that pertains to the users' beliefs regarding the seamless and effortless utilization of a specific technology, without experiencing cognitive strain or burden Davis [20]. Numerous research have been conducted to investigate and validate the significance of perceived ease of use in identifying an individual's perception regarding the acceptance of a technology learning system [73, 74]. It is posited that the association of ease of use with technology leads to perceptions of utility and fosters a favorable attitude towards its adoption among users [75, 76]. Thus, the perceived ease of use positively related to perceived usefulness [77].

Researchers in the field of Information Systems (IS) have combined the concepts of ECM and TAM in order to investigate the beneficial impact of PEOU on individuals' satisfaction when using IS [1]. Based on the ideas of cognitive learning theory, individuals tend to exhibit a preference for minimizing cognitive load when engaging in decision-making processes [78]. The utilization of a sophisticated technology necessitates users to allocate time and exert effort in order to acquire proficiency. In contrast, the utilization of user-friendly technology that demands minimal user effort results in heightened user satisfaction [79]. Therefore, the following hypothesis are proposed.

H4a: Perceived ease of use positively affects students' perceived usefulness when learning English speaking skills with Liulishuo app in non-mandatory setting.

H4b: Perceived ease of use positively affects students' satisfaction when learning English speaking skills with Liulishuo app in non-mandatory setting.

5) Perceived enjoyment

Perceived Enjoyment (PE) refers to the subjective assessment of the level of happiness experienced when engaging with a particular system, independent of any achievements that may arise from the use of said system [77, 80]. Numerous academics have demonstrated interest in the examination of the enjoyment experienced during the investigation of technology adoption, as the inherent characteristics have the potential to positively influence users' perceptions [81]. When an individual feels delighted during the process of engaging with a novel technology, it is possible that their subjective assessment of the level of effort exerted may decrease. Hence, the concept of perceived enjoyment holds substantial importance in explaining the process of e-learning adoption and acceptance [82]. Moreover, enjoyment is a post-adoption belief that increases users' satisfaction and continuance intentions [1, 83]. When individuals derive pleasure and amusement from utilizing mobile Internet devices, they experience heightened levels of contentment, which subsequently leads to a propensity for continued usage [68]. Therefore, the hypotheses are proposed.

H5a: Perceived enjoyment positively affects students' satisfaction when learning English speaking skills with Liulishuo app in non-mandatory setting.

H5b: Perceived enjoyment affects students' continuance intention when learning English speaking skills with Liulishuo app in non-mandatory setting.

IV. Methodology

A. Research Method

This study used a quantitative method to test proposed research model. Liulishuo app was employed again to test Chinese students' continuance intention in a non-mandatory learning setting.

1) Research instruments

Since the research participants are at the same age and are the same majors, the questionnaire does not include the demographic information. The items are adapted from previous studies to investigate these Chinese students' continuance intention to use Liulishuo app to learn English speaking skills in a non-mandatory setting.

The questionnaire was initially adapted in English and was then translated into Chinese by the researcher. To guarantee that the appropriateness, intelligibility and clarity of the translated questionnaire properly reflected the meaning of the designed scale, three Teaching English as a Second Language (TESL) specialists, who have been teaching English for more than ten years were invited to check the face validity and content validity of the content [84].

The items of the questionnaire are adapted from previous literatures. The constructs used are based on the post continuance of IS and TAM. Satisfaction (4 items) was adapted from Rajeh *et al*. [85], Bhattacherjee [19], and Lu *et al*. [54]. Continuance intention (3 items) was introduced by Bhattacherjee [19] and Rabaa'I *et al*. [67]. Perceived usefulness (4 items) was derived from Bhattacherjee [19] and Lu *et al*. [54]. Confirmation (4 items) was adapted from Bhattacherjee [19] and Rajeh *et al*. [85]. Perceived ease of use (4 items) was taken from Muñoz-Carril *et al*. [86] and Han and Sa [87]. Perceived enjoyment (4 items) was adapted from Muñoz-Carril *et al*. [86] and Moon and Kim [88]. The questionnaire were constructed using the Likert 5-point scale, ranging from 'strongly disagree (1)' to 'strongly agree (5)' [89].

2) Sample and data collection

This study aims to investigate the continuance intention of using Liulishuo app in a non-mandatory learning setting, thus, the targeted 350 participants were the same university students who had prior experience of utilizing and practicing English speaking tasks with the app, yet, in a mandatory learning environment. These students possess a rather clear comprehension of the learning content in the app, and their perspective of the course is also relatively thorough and all-encompassing. The purpose of the study was elaborated before distributing the questionnaire to avoid ethical concerns.

Purposive sampling was used in the study. A total of 350 questionnaires were distributed via Chinese survey website 'Wenjuanxing' to respondents who had using experiences, 320 questionnaires were collected back. After checking, 306 valid questionnaires were accepted, the incomplete questionnaires were removed. The AMOS 26 was applied to analyze the structural equation mode (SEM), identify the causal relationships between the influencing factors and students' continuance intention.

V. Results and Discussion

A. Data Analysis and Findings

1) Reliability and validity

To examine the internal consistency of the instrument, Cronbach's alpha was tested. Internal consistency referred to the degree to which the items within a test were measuring a consistent notion or construct. It was associated with the interconnectedness of the elements within the scale [90]. It was suggested that internal consistency values should meet a minimum threshold of 0.70 or above in order to be considered satisfactory [91, 92]. Table 2 displayed the range of Cronbach's values in this study, which fell between 0.812 and 0.879. The values were higher than the recommended ones, therefore they were acceptable.

Table 2. Convergent validity, internal composite reliability, and factors loadings

Constructs	Cronbach's alpha	AVE	CR	FL. range
SAT	0.869	0.63	0.87	0.76–0.82
CI	0.812	0.59	0.81	0.74–0.78
CON	0.871	0.63	0.87	0.75–0.84
PU	0.876	0.64	0.88	0.60–0.68
PEOU	0.874	0.64	0.88	0.62–0.65
PE	0.879	0.65	0.88	0.58–0.70

CR=Composite Reliability, AVE=Average Variance Extracted, FL=Factors Loadings

The implementation of the Confirmatory Factor Analyses (CFA) aimed to assess the extent to which the survey items within a certain construct demonstrate the anticipated loading on their respective latent constructs [93]. Accordingly, the convergent validity, discriminant validity and Composite Reliability (CR) were adopted assess the theoretical model. Convergent validity referred to the degree to which a measurement item has a positive correlation with other measures that assess the same underlying construct, Average Variance Extracted (AVE) and outer loadings were indicators to assess [94]. Factors loadings with higher than 0.5 values were considered to have statistical significance, suggesting that there was sufficient evidence of convergent validity [95, 96]. In addition, it was worth noting that AVE values that were at or greater than 0.5 indicate acceptable convergent validity [94, 95, 97]. Composite reliability was also used to examine internal consistency, values which were higher than 0.7 were considered to be acceptable [95].

Table 2 showed the values of each construct, CR and AVE. The test revealed that all constructs had achieved a reasonable level of AVE result of higher than 0.5. This finding confirmed the presence of convergent validity [94]. Regarding the internal consistency reliability, it was noted that all constructs had achieved an appropriate level of CR result of higher than 0.7, which was deemed acceptable [94]. In addition, all factor loadings were greater than 0.5, which met the values requirements. Therefore, it could be inferred that the constructs had met the criteria for reliability

and convergent validity.

Following this, an evaluation of discriminant validity was conducted in order to ascertain the degree to which the components in the model were substantially independently of other factors. This factor was calculated by taking the square of the values of all constructs. The validity of the measurement model was determined by calculating the squared difference between the observed variables and the correlation of the extracted average variance extracted [98]. In order to evaluate the discriminant validity, it was necessary for the variance between the AVE and the measures associated with it to exceed the variance observed in the construct as indicated by the model [76, 95]. The retrieved values from Table 3 demonstrated that the square roots of the variances recovered for each construct were found to be larger than any correlation observed between the construct and other constructs. This suggested that the constructs could be considered empirically unique.

Table 3. Fornell-Larcker criterion: Correlation matrix of constructs and square root of AVE (in bold)

	CI	PE	SAT	PEOU	PU	CON
CI	**0.771**					
PE	0.538	**0.804**				
SAT	0.516	0.458	**0.791**			
PEOU	0.287	0.110	0.440	**0.797**		
PU	0.506	0.073	0.434	0.362	**0.800**	
CON	0.376	0.235	0.542	0.121	0.418	**0.794**

2) Goodness-of-fit measurements

Six model fit indices were used to examine the goodness-of-fit of the model, as shown in Table 4. The value of χ^2/df was determined to be 1.002, which fell below the required threshold of 3 [76, 99]. The Goodness-of-Fit (GFI) measure yielded a value of 0.940, surpassing the criterion of 0.80 as established by Hair *et al*. [96]. The Adjusted Goodness-of-Fit statistic (AGFI), which has been reported as 0.924, exceeded the recommended threshold of 0.80 as proposed by MacCallum and Hong [100]. The Normed Fit Index (NFI) and normed Comparative Fit Index (CFI) were reported as 0.945 and 1.000 respectively, above the given threshold of 0.90 [100, 101]. The Root-Mean-Square Error of Approximation (RMSEA), as showed 0.002, which was much lower than the proposed value of 0.08 by Hu and Bentler [101]. The goodness-of-fit indices exhibited values that surpassed their corresponding commonly accepted thresholds. Therefore, drawing from these values, it was determined that the model exhibited a strong fit.

Table 4. Goodness-of-fit indicators in the structural model

Fit indices	Structural model	Recommended value	References
x^2/df	1.002	1–3	Wang & Wang [99]
GFI	0.940	>0.90	Hair et al. [96]
AGFI	0.924	>0.80	MacCallum & Hong[100]
NFI	0.945	>0.90	Hu & Bentler [101]
CFI	1.000	>0.90	Hu & Bentler [101]
RMSEA	0.002	<0.08	Hu & Bentler [101]

3) Hypothesis testing

Structural Equation Modeling (SEM) is a rigorous statistical technique that enables researchers to assess and validate multiple hypotheses pertaining to a given model, allowing for the examination of each hypothesis in isolation [102]. The present study put forth five hypotheses, which were outlined in Table 5. Confirmation, perceived ease of use contributed significantly to users' perceived usefulness (p<***0.001). Confirmation, perceived ease of use, and perceived enjoyment were found to significantly promote users' satisfaction (p<***0.001), perceived usefulness also greatly influenced users' satisfaction (p<0.05). In the same vein, perceived usefulness and perceived enjoyment significantly influenced users' continuance intention of using Liulishuo app (p<***0.001). However, satisfaction had no significant effect on users' continuance intention on using Liulishuo app to English speaking skills (p>0.05).

Table 5. Hypotheses testing

No.	Hypothesis	*P*	Results
HI	SAT →CI	0.057	Not supported
H2a	CON →PU	***	Supported
H2b	CON →SAT	***	Supported
H3a	PU →SAT	0.021	Supported
H3b	PU →CI	***	Supported
H4a	PEOU →PU	***	Supported
H4b	PEOU →SAT	***	Supported
H5a	PE →SAT	***	Supported
H5b	PE →CI	***	Supported

***: P＜0.001

B. Discussion

The primary objective of this study is to provide insight into the various factors that influence students' intention to continue using Liulishuo app as an English speaking learning tool for Chinese university students in a non-mandatory environment. In order to accomplish this goal, the study's research approach incorporated constructs derived from the post-acceptance model of IS and Technology Acceptance Model (TAM).

The most surprisingly finding is that in contrast to initial expectations and previous studies, the important predictor satisfaction has no significant impact on students' continuance intention [54–59]. Therefore, it has no mediating effects between students' confirmation, perceived usefulness, perceived ease of use, perceived enjoyment and continuance intention on using Liulishuo app to learn English speaking skills. One plausible explanation is that satisfaction, as an emotional variable, has very little impact on learning performance and goals. As previously mentioned, the students in question have utilized this application for the purpose of enhancing their speaking skills throughout the entirety of the pandemic, as per the compulsory guidelines. Consequently, they possess a comprehensive understanding of the app's functionalities, learning activities, and anticipated learning outcomes through various tests. It can thus be deduced that their satisfaction with the app is of little importance, as their primary focus lies in the advantages it affords them. This particular aspect serves as the determining factor for their intention to persist in using the app. Therefore,

the significance of satisfaction in the context of post-acceptance continuance intention is not as important as that in pre-acceptance intention. Gregori *et al*. [103] and Zhang *et al*. [104] mentioned that in non-mandatory learning environment, self-paced extracurricular projects would yield higher levels of student participation due to their learning targets.

The other hypotheses support this idea. It can be seen that perceived usefulness significantly impacts continuance intention. This conclusion aligns with the findings of earlier research [68–72] and supports the researcher' previous inferences. Students consider the learning contents, materials and interactive functions are useful regarding o their English speaking skills learning, they show their willingness to continue using it.

Similarly, perceived enjoyment significantly influences students' continuance intention, which is consistent with previous findings [1, 48, 83]. This conclusion indicates that the learning experiencing with using the app has important influence. For example, Liulishuo app has many interactive awards, when students finish practicing a question with correct answer, the sound effect of applause, the cartoon signs of victory will appear on the screen, even the sound of praise like 'you did a good job', or 'you have made a huge progress', 'you are genius' appears, which provide students with great confidence and sense of achievement. The inclusion of many elements such as points, badges, feedback, levels, rewards, and challenges inside the application provides students with a significant motivation to persist in their learning endeavors, which is not typically found in traditional teaching methods [105].

As for the results of the influence of perceived ease of use on perceived usefulness and satisfaction, they are tested significantly positive. It is easy to understand, these students have been using the app for a long time, they know how to operate it, thus they understand its usefulness, the user-friendly interface and functions lead to high contentment.

VI. Conclusion

The findings of the research demonstrated that incorporating theoretical frameworks such as Technology Acceptance Model (TAM) and post-acceptance model of IS for clarifying the factors influencing individuals' willingness to continue using Liulishuo app yields valuable insights. The findings of this study indicate that the perceived usefulness and perceived enjoyment are significant antecedents in influencing students' intention to continue using the app for the purpose of improving their English speaking skills in a non-mandatory setting. The students' satisfaction towards the app does not show its essential in post acceptance context. This research endeavor makes a valuable contribution to the existing knowledge by exploring the various aspects that have the potential to positively influence students' intents to continue utilizing Liulishuo app as a tool for educational purposes. This study further supports previous research that emphasizes the importance of factors such as perceived usefulness and enjoyment in promoting the continued use of learning technology in higher education. In addition, this paper provides practical implications for Chinese teachers in higher education during post pandemic time. Educators should possess an understanding that students are more inclined to accept technologies for learning purposes when those technologies are in line with their values and methods to learning in non-mandatory environment.

The study has its limitations. The most obvious one is the participants. The study adopted the particular group of students who had experience of using Liulishuo app to learn English speaking skills during pandemic mandatory environment. Therefore, the generalizability of the findings presented in the study is limited to specific settings. The research location was also constrained by its external factors. The perspectives of the surveyed students on using Liulishuo app were analyzed exclusively within the context of a specific subject, namely English speaking skills. The ability to apply of these findings to other academic courses remains uncertain.

Subsequent investigations pertaining to the subject matter have the potential to enhance the present endeavor through the exploration of the subsequent domains. Firstly, it is imperative to address the acknowledged limits within the scope of the research endeavor. Furthermore, in order to enhance the generalizability of the findings, it is advisable to take into account additional contexts. Furthermore, it should be noted that the research model employed in this study did not encompass all conceivable variables that may operate as potential precursors to the intention to continue using the product or service.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

K.D., M.M., and A.M. jointly conducted the research, analyzed the data and wrote the paper. They have read and agreed with the published version of the manuscript.

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