pISSN: 1906 - 6406 The Scholar: Human Sciences
eISSN: 2586 - 9388 The Scholar: Human Sciences
http://www.assumptionjournal.au.edu/index.php/Scholar

Factors Impacting Student's Behavioral Intention to Use Social Media Applications for Online Learning

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Received: August 12, 2022. Revised: September 18, 2022. Accepted: October 4, 2022.

Abstract

Purpose: Social media applications are powerful learning tools for a new norm of online learning in this era. Therefore, this paper aims to investigate the impacting factors of students' behavioral intention to use social media applications for online learning. The conceptual framework proposes the causal relationships between attitude, information quality, perceived ease of use, perceived usefulness, service quality, social influence, and behavioral intention. **Research design, data, and methodology:** A quantitative method was used to distribute questionnaires to 500 students. Nonprobability sampling was adopted by using judgmental sampling, stratified random sampling, and convenience sampling. Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were used to analyze model fit, reliability, validity and hypotheses testing. **Results:** Social influence and attitude significantly impact behavioral intention. Furthermore, there are support relationships between perceived ease of use and perceived usefulness, and between service quality and perceived ease of use. Nevertheless, perceived ease of use and perceived usefulness have no significant impact on behavioral intention, and information quality has no significant impact on perceived ease of use. **Conclusions:** Social media apps developers and education managers should consider the importance of students' behavioral intention to use social media applications for their effective online learning.

Keywords: Higher Education, Students, Behavioral Intention, Online Learning, Social Media Applications

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Due to the prevalence of COVID-19, an online learning has been growing rapidly as a replacement of physical classroom across the globe. Education sector in China has rapidly transited from offline to online learning to preserve the social distancing. In this environment, there is almost no face-to-face and social interaction between people. Online learning had become the primary method of learning during pandemic, which significantly impacts the rapid growth of online and social media use in China. In the current era of emerging technologies such as artificial intelligence, big data etc., there have been widely used online tools for learning. With the development of 5G in China in 2019, the live or interactive teaching mode has become more popular and has been applied to online education. Online learning is easy, practical and effective which it can meet the needs of online learning users (Li & Lalani, 2020).

The purpose of this study is to investigate the factors that influence the behavioral intentions of university students in

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Chengdu, Sichuan Province, China to use social media applications for online learning. Therefore, the theoretical models were reviewed to serve the research objectives of this study, including Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and the Unified Theory of Technology Acceptance and Use (UTAUT). These models have been widely used among scholars to examine key determinants of technology adoption (Davis et al., 1989).

Under the influence of the global epidemic, online learning is seemingly the future of higher education. The researcher believes that behavior intention of using social media applications for online learning will obtain more and more attention among academic practitioners and education managers. The number of mobile internet users in China reached 897 million by the end of March 2020 (China Internet Network Information Center, 2020). Social media has made the internet more accessible and enriched people's cultural, entertainment and learning lives (Tang et al., 2021). This research aims to identify the gap in the literature regarding topics, theories, variables, and conceptual frameworks for understanding social media for online learning among students in China.

The future of online learning is the receptive measure of "new normal" for education sector around the world. Accordingly, the significance of the study is to explore the potential and significant level of causal relationships between attitude, information quality, perceived ease of use, perceived usefulness, service quality, social influence and behavioral intention which can contribute to social behavior study. It could be beneficial to social media apps developers and education managers to consider the importance of students' behavioral intention to use social media applications for their online learning. Thus, they can design the appropriate interactive contents for the effective online learning of learners.

2. Literature Review

2.1 Information Quality

Information quality refers to the quality of the information generated and presented by the system, including accuracy, authenticity, and responsiveness (Bailey & Pearson, 1983; Srinivasan, 1985). DeLone and McLean (1992) initially proposed the concept of information quality and believed that information quality is a structural requirement for building a successful information system. Nelson et al. (2005) put forward the definition of information quality, which refers to the quality of data given during network service. The content of information quality includes certainty, completeness, circulation, and patterns.

Ahn et al. (2004) pointed out that information quality is generalized as the quality of the content provided by network services, which can be measured by correctness, consistency, and speed (Nelson et al., 2005). Lin and Lu (2000) suggested that information quality is an influential factor of the perception and understanding of ease of use and usefulness. In addition, Cheong and Park (2005) found that information quality refers to "content quality", and proposed that perceived ease of use and perceived usefulness have positive effects on information quality, as demonstrated by the following hypothesis:

H1: Information quality has a significant impact on perceived ease of use of social media application for online learning.

2.2 Service Quality

Bitner and Hubbert (1994) defined service quality as the overall subjective evaluation of products or services by consumers after consumption. Service quality determines the overall level of service quality that users feel and understand from operating system. (Baroudi & Orlikowski, 1988; Kim et al., 2008). Service quality is the satisfaction of various communication mechanisms from the user's point of view, which can quickly help customers solve system usage problems (Ahn et al., 2007; Bhattacherjee, 2001). In addition, service quality can be conceptualized as high-quality customer services that is evaluated by customers (Santos, 2003). Cheng (2012) stated that service quality is the distinguished service provided by the service system, and can fulfil the expected results and perceived quality of customers in the actual situation. Service system is subjected to provide contents that are consistent, responsive, positive, and compassionate.

Pitt et al. (1995) indicated the ease of use of information systems can be measured through service quality, which is the main qualification for transmitting the information. The service quality is also determined by how easy it is to use by a user and how he or she perceives and understands the information (Kim-Soon et al., 2014). Service quality demonstrates the simple information and can be extended to responsiveness, reliability, and empathy during the service delivery process (Gefen, 2002). Furthermore, DeLone and McLean (2003) argued that service quality can be trust, personalization, and the quick and positive responses. (Keating et al., 2003). Previous studies showed that service quality is an important predictor of perceived ease of use (Ahn et al., 2004; Cao et al., 2005). Accordingly, this research hypothesizes that service quality significantly impacts the ease of use:

H2: Service quality has a significant impact on perceived ease of use of social media applications for online learning.

2.3 Perceived Ease of Use

Perceived ease of use is defined as "the degree to which users expect to use the target system with less effort" (Davis et al., 1989). Davis (1989) proposed perceived ease of use as the degree to which people understand the ease of a given program. Perceived ease of use in the context of the online learning means that the systems or applications are easy to use for a learning's purpose (Lin et al., 2011).

Teo et al. (2003) believed that a system with high usability will stimulate a higher sense of presence and belonging for users when using it. Many previous studies have reported that perceived ease of use is an important factor in technology adoption (Davis, 1989). Perceived ease of use directly affects the effectiveness of the operation and indirectly changes the attitude brought about by the operation through the user's awareness or understanding of its usefulness (Phyu & Vongurai, 2020). Therefore, the following hypotheses of this research were proposed to predict the relationship between perceived ease of use, perceived usefulness and behavioral intention:

H3: Perceived ease of use has a significant impact on perceived usefulness of social media applications for online learning.

H5: Perceived ease of use has a significant impact on behavioral intention to use social media applications for online learning.

2.4 Perceived Usefulness

Perceived usefulness is defined as a user's subjective probability that using a particular application system will improve their work ability (Alalwan et al., 2016; Hanafizadeh et al., 2014; Liao et al., 2012; Ramdhony & Munien, 2013). Furthermore, perceived usefulness refers to the degree to which online learning can help learners to achieve their learning goals (Lin et al., 2011). Gopi and Ramayah (2007) defined perceived usefulness as an external factor, such as an efficient method or function that produces the desired result. Yang (2013) presented that perceived usefulness can influence behavioral intention to use mobile applications. The results of Tan and Teo (2000) showed that perceived usefulness is an important factor of users' decisions to seek or use new technologies and systems.

Numerous studies have emphasized that perceived usefulness can positively impact learners' behavioral intention when learners need to use a system (Venkatesh & Bala, 2008; Venkatesh & Davis, 2000). Perceived usefulness of online learning can be interpreted that college students' participation in online learning is caused by favorable attitude and belief that it can increase their learning capabilities. Perceived usefulness motivates learners to try and participate online learning. Yang (2013) also proposed that perceived usefulness significantly influences online learners' behavioral intentions to use applications. Thus, when college students believe that online learning can provide benefits, it is more likely to trigger a greater level of behavioral intention to participate in online learning. Therefore, this study proposes the following hypothesis to support the relationship between perceived usefulness and behavioral intention:

H4: Perceived usefulness has a significant impact on behavioral intention to use social media applications for online learning.

2.5 Social Influence

Lu (2014) explained social influence as both external environment and the opinions of others that may influence an individual's decision or intention to use a product, service or system. This motivation or opinion may be derived from external stimulant factors. However, Wang et al. (2017) posted that social influence refers to the effect of others' view that leads to mental or physical action of an individual. Chong et al. (2012) denoted that social influence can be signified that learners convert the public's opinion to their own desire. Chong (2013) proposes that social influence plays an important role predicting behavioral intention for online learning of learners.

In addition, Venkatesh et al. (2012) highlighted social impact as the level of concern that a person places on the significant reference or selection of system or application. Users who want to learn online may follow their social circle of influence such as teachers and classmates, which may also influence their behavioral intentions in choosing systems or applications (Gruzd et al., 2012). Similarly, this study also argues that behavioral intention to use social media applications for online learning is majorly impacted by social influence. For example, the WeChat App is preferred by younger generations in China because their family, friends, and classmates have been using it. Thus, the researcher proposes the following hypothesis:

H6: Social influence has a significant impact on behavioral intention to use social media applications for online learning.

2.6 Attitude

Ajzen (1991) defined attitude as an individual's willingness or passive emotion toward the object or behavior. Furthermore, Davis (1989) clarified that attitude is a person's positive sense to behave in certain ways. According to Phau and Teah (2009), attitude can predict an individual's behavioral intention and action. Meanwhile, attitude means that each person may take the measurements of the intention to some extent. Therefore, the behavioral intention has been studied to be driven by the attitude. Many

studies have shown that attitude has a significant impact on behavioral intention (Davis et al., 1989; Mathieson, 1991; Ramayah & Mohd. Suki, 2006; Rhodes & Courneya, 2003; Shih & Fang, 2004; Taylor & Todd, 1995). The researcher believes that the more explicit attitude of online learners, the more likely the behavioral intention is developed. People are rational and take attitude into account when doing certain actions. Therefore, a hypothesis is put forward per below:
H7: Attitude has a significant impact on behavioral intention to use social media applications for online learning.

2.7 Behavioral Intention

The behavioral intention is conceptualized as the willingness to perform particular behaviors (Keong et al., 2012). Behavioral intention refers to the probability that an individual will perform a certain action to achieve a certain purpose (Yueh et al., 2015). The behavioral intention is to predict and control human' actions and consciousness through their cognitive awareness. In the context of the Internet, behavioral intention is described as people's intentions to use multimedia technologies (Venkatesh et al., 2003, 2012) or the willingness to recommend others to use (Pahnila et al., 2011). Besides, the relationship between the intentional and the actual behavior has been confirmed by many scholars. Likewise, behavioral intention is regarded as a suitable replacement for practical action (Nonis & Swift, 2001; Venkatesh & Davis, 2000; Wu & Du, 2012). Therefore, behavioral intention can be used to accomplish a specific goal by the use of technology or media applications (Lim & Duang-Ek-Anong, 2021).

3. Conceptual Framework

The conceptual framework was developed by adapting four theoretical models from previous literatures. Firstly, Lin (2007) studied an influence of information quality and service quality on perceived ease of use. Secondly, Lin (2013) examined behavioral intention that was significantly impacted by perceived ease of use and perceived usefulness. The third research was explored by Chua et al., (2018) that the relationship between social influence and behavioral intention was affirmed. Lastly, Gopi and Ramayah (2007) determined the relationship between attitude and behavioral intention. Subsequently, the conceptual framework of this study is shown in Figure 1.

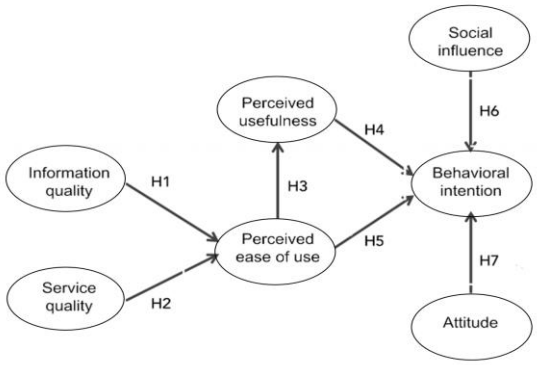

Figure 1: Conceptual Framework
Source: Created by the author.

H1: Information quality has a significant impact on perceived ease of use of social media applications for online learning.
H2: Service quality has a significant impact on perceived ease of use of social media applications for online learning.
H3: Perceived ease of use has a significant impact on perceived usefulness of social media applications for online learning.
H4: Perceived usefulness has a significant impact on behavioral intention to use social media applications for online learning.
H5: Perceived ease of use has a significant impact on behavioral intention to use social media applications for online learning.
H6: Social influence has a significant impact on behavioral intention to use social media applications for online learning.
H7: Attitude has a significant impact on behavioral intention to use social media applications for online learning.

4. Research Methods and Materials

4.1 Research Methodology

The conceptual framework was developed to hypothesize influencing factors of behavioral intention. In this study, the researcher used a quantitative method to collect the data from 500 respondents who are undergraduate students in art majors of two private universities in Chengdu, Sichuan Province, China. The questionnaire was designed based on three components; screening questions, five-point Likert scale of measuring items and demographic profiles. Before the data collection, the index of item-objective congruence (IOC) was employed, resulting all items rated by three experts were approved at a score 0.67 or above. Furthermore, the pilot test (n=30) by Cronbach's Alpha reliability results were approved at a score 0.70 (Nunnally & Bernstein, 1994). Afterward,

Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were used to statistically analyze in SPSS and SPSS AMOS for model fit, reliability, validity, and hypotheses testing.

4.2 Population and Sample Size

The target population of this study was 500 art major undergraduate students of two private universities in Sichuan, China, which are Sichuan Film and Television University (SFU) and Sichuan University of Media and Communications (SUMC). According to Kline (2011), the minimum sample size was recommended to be at least 200. After a data screening process, researcher finally considered to use 500 responses per judgement by researcher for adequately process SEM analysis.

4.3 Sampling Techniques

The researcher employed nonprobability sampling by using judgmental sampling, stratified random sampling, and convenience sampling. Initially, judgmental sampling was to select two private universities in Chengdu, Sichuan Province of China which are Sichuan Film and Television University (SFU) and Sichuan University of Media and Communications (SUMC). Next, stratified random sampling was used to calculate the total number of 24,000 students into proportional sample size of each group as in Table 1. Following this, the researcher adopted convenience sampling to distribute online and offline questionnaires. The online survey was built upon the website (www.wjx.cn) and was disseminated through social networks including the WeChat App and Email. Respondents were stimulated to share the survey link with their classmates. The offline survey was distributed directly to respondents through their teachers and counselors of universities. The data collection has been taken for approximately six months from May to October 2021.

Table 1: Sample Units and Sample Size

University Name	Population Size Total=24,000	Proportional Sample Size Total=500
Sichuan Film and Television University (SFU)	11,000	229
Sichuan University of Media and Communications (SUMC)	13,000	271
Total	**24,000**	**500**

Source: Created by the author.

5. Results and Discussion

5.1 Demographic Information

Demographic results of 500 participants are demonstrated in Table 2. There were 39.4% of male and 60.6% of female. In age groups, the largest segment of the study was 16-20 years old, representing 69% of the total respondents, followed by 31% of 21-25 years old. For the year of study, most respondents were in the second year, accounting for 45.4% of the total respondents, followed by the third year of 25.8%, fourth year of 15.6%, and first year of 13.2%. In terms of art major's selection, majority of respondents were other art-related majors accounted for 65.2%, and the least group was 7.4% of the environmental art design.

Table 2: Demophraphic Profile

Demographic and Behavior Data (N=500)		Frequency	Percentage
Gender	Male	197	39.4%
	Female	303	60.6%
Age	16 -20 years old	345	69%
	21 -25 years old	155	31%
Year of Study	Year 1	66	13.2%
	Year 2	227	45.4%
	Year 3	129	25.8%
	Year 4	78	15.6%
Major	Environmental Art Design	37	7.4%
	Visual Communication Design	44	8.8%
	Broadcasting and Hosting Art Major	53	10.6%
	Radio and Television Editing	40	8%
	Other Art-Related Majors	326	65.2%

Source: Created by the author.

5.2 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was performed in this research. Hair et al. (2006) pointed out that all significant items represent factor loading for discriminant validity testing. In the results of this study, factors loading showed the values 0.30 or above and p-values were below 0.05. Furthermore, composite reliability (CR) was greater than the cut-off points of 0.7, and the average variance extracted (AVE) was above the cut-off points of 0.5 (Fornell & Larcker, 1981). Additionally, Cronbach's Alpha reliability results were approved at a score 0.70 (Nunnally & Bernstein, 1994). Consequently, all estimates were significant as shown Table 3.

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
Attitude (A)	Gopi and Ramayah (2007)	4	0.813	0.665- 0.784	0.812	0.520
Information Quality (IQ)	Lin (2007)	3	0.849	0.801-0.820	0.850	0.655
Perceived Ease of Use (PEOU)	Lin (2007)	4	0.881	0.748-0.865	0.887	0.663
Perceived Usefulness (PU)	Lin (2013)	4	0.917	0.830-0.885	0.918	0.738
Service Quality (SQ)	Lin (2007)	3	0.864	0.798-0.836	0.862	0.677
Social Influence (SI)	Chua et al. (2018)	4	0.831	0.684-0.811	0.832	0.554
Behavioral Intention (BI)	Lin (2013)	5	0.856	0.661-0.803	0.856	0.544

Source: Created by the author.

According to Table 4, CMIN/DF, GFI, AGFI, NFI, CFI, TLI and RMSEA were used as indicators of model fit of CFA. The measurement model's results were within acceptable values with no required adjustment and can confirm convergent and discriminant validity.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	604.810/303 or 1.996
GFI	≥ 0.90 (Hair et al., 2006)	0.916
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.895
NFI	≥ 0.90 (Arbuckle, 1995)	0.928
CFI	≥ 0.90 (Hair et al., 2006)	0.962
TLI	≥ 0.90 (Hair et al., 2006)	0.956
RMSEA	< 0.08 (Pedroso et al., 2016)	0.045
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, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

Source: Created by the author.

According to Fornell and Larcker (1981), the square root of average variance extracted regulates that all the correlations are greater than the corresponding correlation values for that variable as of Table 5. Therefore, the convergent validity and discriminant validity were adequate.

Table 5: Discriminant Validity

Variable	SI	IQ	PU	BI	A	SQ	PEOU
SI	**0.744**						
IQ	0.145	**0.809**					
PU	0.077	0.041	**0.859**				
BI	0.373	0.204	-0.061	**0.738**			
A	0.108	0.666	0.095	0.190	**0.721**		
SQ	0.061	0.057	0.786	-0.040	0.094	**0.823**	
PEOU	-0.009	0.024	0.760	-0.033	0.084	0.739	**0.814**

Source: Created by the author.

5.4 Structural Equation Model (SEM)

Structural equation modeling (SEM) verifies causal relationships between variables in the structural model (Hair et al., 2010). According to the acceptable values in Table 6, The goodness of fit indices for the structural model were approved without adjustment, including CMIN/DF, GFI, AGFI, NFI, CFI, TLI and RMSEA.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	820.296/298 or 2.753
GFI	≥ 0.90 (Hair et al., 2006)	0.910
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.886
NFI	≥ 0.90 (Arbuckle, 1995)	0.902
CFI	≥ 0.90 (Hair et al., 2006)	0.935
TLI	≥ 0.90 (Hair et al., 2006)	0.923
RMSEA	< 0.08 (Pedroso et al., 2016)	0.059
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, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

Source: Created by the author.

5.5 Research Hypothesis Testing Result

The hypothesis testing results demonstrate based on its regression weights and R^2 variances. The results in Table 7 indicated that H2, H3, H6, and H7 were supported with a significance of $p<0.05$. However, H1, H4, and H5 were not supported.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: IQ→PEOU	-0.024	-0.851	Not Supported
H2: SQ→PEOU	0.938	18.922*	Supported
H3: PEOU→PU	0.828	17.304*	Supported
H4: PU→BI	-0.165	-1.693	Not Supported

H5: PEOU→BI	0.088	0.917	Not Supported
H6: SI→BI	0.367	6.686*	Supported
H7: A→BI	0.181	3.496*	Supported

Note: * $p<0.05$
Source: Created by the author.

The results obtained from Table 7 can be specifically interpreted as:

H1 shows the standardized path coefficient value of -0.024 in the structural pathway. Hence, the relationship between information quality and perceived ese of use is not supported.

H2 proves that service quality is a key influencing factor of perceived ease of use and reveals the standardized path coefficient value of 0.938 in the structural pathway.

For H3, the analysis results support the hypothesis that perceived ease of use has a significant impact on perceived usefulness with a standardized path coefficient value of 0.828.

H4 fails to approve the support relationship between perceived usefulness and behavioral intention with standardized path coefficient value of -0.165.

H5 presents that perceived ease of use has no significant impact to behavioral intention with standardized path coefficient of 0.088.

In terms of H6, the results support the hypothesis of the significant impact of social influence on behavioral intention, revealing the standardized path coefficient value of 0.367.

H7 verifies that attitude significantly impacts behavioral intention with standardized path coefficient value of 0.181.

6. Conclusions and Recommendation

6.1 Conclusion and Discussion

The research was achieved to examine the factors that influence undergraduate students' behavior intention to use social media applications for online learning in Chengdu, Sichuan Province of China. The proposed hypotheses were developed according to the conceptual framework to investigate how attitude, information quality, perceived ease of use, perceived usefulness, service quality, and social influence directly and indirectly impact behavioral intention. The results revealed that social influence and attitude significantly impact behavioral intention. Furthermore, there are support relationships between perceived ease of use and perceived usefulness, and between service quality and perceived ease of use. Nevertheless, perceived ease of use and perceived usefulness have no significant impact on behavioral intention, and information quality has no significant impact on perceived ease of use.

This part offers the discussion and conclusion of the findings. First, the information quality was not a predictor of students' perceived ease of use of social media applications for online learning. The results contradict with many scholars and fails to confirm that information quality is an influential factor of the perception on how easy to use a system technology (Ahn et al., 2004; Lin & Lu, 2000; Nelson et al., 2005). This is because the content quality of online learning is alongside with the physical classroom which students found no impact on their perception of ease level.

Secondly, service quality directly and significantly impacts perceived ease of use. Ahn et al. (2004) verified that service quality is a great significant predictor of perceived ease of use and perceived usefulness. Thus, service quality is crucial for analyzing the online learners' use that information system is easy for them to use.

Thirdly, perceived ease of use has a significant impact on perceived usefulness. According to Davis et al. (1989), ease of use is often considered as an important determinant of technology usage. Previous studies showed that social media apps that is easy to use will encourage more active participation and obsession among users.

Fourthly, there is no support relationship between perceived usefulness and behavioral intention. Interestingly, the results are not consistent with numerous studies that perceived usefulness positively impacts learners' behavioral intention when learners need to use a system (Venkatesh & Bala, 2008; Venkatesh & Davis, 2000; Yang, 2013). Hence, it can be assumed that the benefits of online learning have been in doubt whether it is better than the physical classroom.

Fifthly, perceived ease of use has no significant impact to behavioral intention. Earlier studies provide different results that perceived ease of use directly affects the behavioral intention of users to use a system (Davis et al., 1989). This can be postulated that the effort in using online learning is unclear due to students expect to temporarily use this learning format during the pandemic.

Next, social influence is an important facilitator of behavioral intention to use social media apps for online learning. Simultaneously, many studies have also proved that social influence can attract online learners to spread a word about the use of social media applications (Gruzd et al., 2012; Sulieman et al., 2015; Venkatesh et al., 2003). This means that the younger generation in China prefers to use WeChat App because it has been widely used among their friends, classmates, and family members.

Lastly, many previous studies agreed that attitude is a key factor affecting behavioral intention (Davis et al., 1989; Mathieson, 1991; Ramayah & Mohd. Suki, 2006; Taylor & Todd, 1995). According to the rational behavior theory proposed by Fishbein and Ajzen (1975) people will be

embedded with attitude which has an impact on their behavior. Therefore, attitude can predict college students' behavioral intention to use social media applications for online learning.

6.2 Recommendations

The recommendations were made to application developers and education managers based on the findings in the cross of theories and practices. The results revealed that social influence and attitude significantly impact behavioral intention in this study. It is important for education managers to highlight social impact of students who want to learn online and may follow their social network such as teachers and classmates, which may also influence their behavioral intentions in choosing systems or applications. Additionally, WeChat App has been widely used in China which developers should consider to improve learning features and functions in order to raise their positive attitude towards the use.

Due to there is a support relationship between perceived ease of use and perceived usefulness. Education managers and teachers are suggested to provide usage guidelines and tips on how to efficiently use social media applications for online learning among students. App developers and marketers could develop an easy-to-use system as well as promote various benefits received from using the app. Service quality was evidenced to significantly impact perceived ease of use. This result can be signified in two perspectives. For app developers and marketers, they need to ensure the service quality in terms of the use and fraud which are well controlled, managed and communicated. There are many cases of loss and stolen accounts which breach the privacy data of users and tremendously cause the damage. For educations managers, since they are not in control of the app, it is important to provide information for simple problems such as forgot password, usage manual and help desk support to enhance behavioral intention of students.

Nevertheless, there are no support relationships among perceived ease of use, perceived usefulness and behavioral intention. Furthermore, information quality has no significant impact on perceived ease of use. Regarding to this, the researcher suggests that follow-up studies can extend qualitative research for further investigations to find out root cause of this insignificance. Against the backdrop of the global epidemic, understanding the influencing factors of university students' online learning behavior intention is also the trend of online education development in higher education. WeChat application has become the most popular social media application in China due to its wide range of users, easy operation, and friendly interface. Therefore, it has been widely accepted by students in terms of perceived ease of use, perceived usefulness, information quality and behavioral intention. The further development of online learning should consider WeChat or any other similar applications which can provide better technical support for the online learning of teachers and students. Finally, the researcher recommended that universities and social media application developers pay attention to the influencing factors proven in this paper.

6.3 Limitation and Further Study

There are several limitations of the study. First, the population and sample were only undergraduates of two private colleges in Chengdu. There is a possibility for different analysis results when expanding the sample to different demographical characteristics or regions. Second, there are many more motivational factors influencing online learning usage. The researcher suggests that subsequent studies could incorporate variables related to individual differences and online learning experiences into the conceptual framework, such as effort expectancy, facilitating conditions and actual usage. Last, qualitative study should be employed in order to extend the interpretation and comparison of the results such as focus group and interview.

References

Ahn, T., Ryu, S., & Han, I. (2007). The impact of web quality and playfulness on user acceptance of online retailing. *Information & Management*, *44*(3), 263-275.

Ahn, T., Ryu, S., & Han, I. (2004). The impact of the online and offline features on the user acceptance of Internet shopping malls. *Electronic Commerce Research and Applications, 3*(4), 405-420.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-212.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan. *Journal of Enterprise Information Management, 291*(1), 118-139.

Arbuckle, J. L. (1995). *AMOS for Windows Analysis of Moment Structures. Version 3.5.* (1st ed.). Small Waters Corp.

Bailey, J. E., & Pearson, S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science, 29*(5), 530-45.

Baroudi, J. J., & Orlikowski, W. J. (1988). A short-form measure of user information satisfaction: a psychometric evaluation and notes on use. *Journal of Management Information Systems*, *4*(4), 44-59.

Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision Support Systems, 32*(2), 201-214.

Bitner, M. J., & Hubbert, A. R. (1994). Encounter satisfaction versus overall satisfaction versus quality: the customer's voice. in Rust, R.T., & Oliver, R. L. (Eds), *Service Quality: New Directions in Theory and Practice* (pp. 72-94). SAGE Publications.

Cao, M., Zhang, Q., & Seydel, J. (2005). B2C e-commerce web site quality: an empirical examination. *Industrial Management and Data Systems, 105*(5), 645-651.

Cheng, Y. M. (2012). The effects of information systems quality on nurses' acceptance of the electronic learning system. *Journal of Nursing Research, 20*(1), 19-30.

Cheong, J. H., & Park, M.-C. (2005). Mobile internet acceptance in Korea. *Internet Research, 15,* 125-140.

China Internet Network Information Center. (2020, April 22). *The 45th statistical report on internet development in China.* https:// www.cnnic.com.cn/IDR/ReportDownloads/202008/P020200827549953874912.pdf

Chong, A. Y. L. (2013). Predicting m-commerce adoption determinants: a neural network approach. *Expert Systems with Applications, 40*(2), 523-530.

Chong, A. Y. L., Chan, F. T., & Ooi, K. B. (2012). Predicting consumer decisions to adopt mobile commerce: cross country empirical examination between China and Malaysia. *Decision Support Systems, 53*(1), 34-43.

Chua, P., & Rezaei, S., & Gu, M., & Oh, Y., & Jambulingam, M. (2018). Elucidating social networking apps decisions: Performance expectancy, effort expectancy and social influence. *Nankai Business Review International, 9*(1), 118-142.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and end user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science, 35*(8), 982-1003.

DeLone, W. H., & McLean, E. R. (1992). Information systems success: the quest for the dependent variable. *Information Systems Research, 3*(1), 60-95.

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems, 19*(4), 9-30.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research* (1st ed.). Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Gefen, D. (2002). Customer loyalty in e-commerce. *Journal of the Association for Information Systems, 3,* 27-51.

Gopi, M., & Ramayah, T. (2007). Applicability of theory of planned behavior in predicting intention to trade online Some evidence from a developing country. *International Journal of Emerging Markets, 2*(4), 348-360.

Gruzd, A., Staves, K., & Wilk, A. (2012). Connected scholars: examining the role of social media in research practices of faculty using the UTAUT model. *Computers in Human Behavior, 28*(6), 2340-2350.

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis* (7th ed.). Prentice Hall.

Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate Data Analysis* (6th ed.). Pearson Prentice Hall.

Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., & Tabar, M. J. S. (2014). Mobile banking adoption by Iranian bank clients. *Telematics and Informatics, 31*(1), 62-78.

Keating, B., Rugimband, R. & Quzai, A. (2003). Differentiating between service quality and relationship quality in cyberspace. *Managing Service Quality, 13*(3), 217-32.

Keong, M. L., Thurasamy, R., Sherah, K., & Chiun, L. M. (2012). Explaining intention to use an enterprise resource planning (ERP) system: an extention of the UTAUT model. *Business Strategy Series, 13*(4), 108-120.

Kim, T. G., Lee, J. H., & Law, R. (2008). An empirical examination of the acceptance behaviour of hotel front office systems: an extended technology acceptance model. *Tourism Management*, *29*(3), 500-513.

Kim-Soon, N., Rahman, A., & Visvalingam, L. (2014). SERVQUAL: can it be used to differentiate guest's perception of service quality of 3 Star from a 4-star hotel. *International Business Research, 7*(7), 37-47.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.

Li, C., & Lalani, F. (2020, April 29) *The COVID-19 Pandemic Has Changed Education Forever, This Is How.* World Economic Forum. https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning

Liao, Z., Shi, X., & Wong, W.-K. (2012). Consumer perceptions of the smartcard in retailing: an empirical study. *Journal of International Consumer Marketing, 24(*4),252-262.

Lim, S., & Duang-Ek-Anong, S. (2021). Determinants of Intention to Use DevOps in Cambodia's Technology Industry. *AU-GSB E-JOURNAL*, *14*(2), 27-39.

Lin, C. J., & Lu, H. (2000). Towards an understanding of the behavioral intention to use a web site. *International Journal of Information Management, 20*(3), 23-33.

Lin, H. (2007). The role of online and offline features in sustaining virtual communities: an empirical study. *Internet Research, 17*(2), 119-138.

Lin, H. (2013). The effect of absorptive capacity perceptions on the context-aware ubiquitous learning acceptance. *Campus-Wide Information Systems, 30*(4), 249-265.

Lin, K. M., Chen, N.-S., & Fang, K. (2011). Understanding e-learning continuance intention: a negative critical incidents perspective. *Behaviour & Information Technology, 30(*1), 77-89.

Lu, J. (2014). Are personal innovativeness and social influence critical to continue with mobile commerce? *Internet Research*, *24*(2), 134-159.

Mathieson, K. (1991). Predicting user intention: comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research, 2*(3), 173-191.

Nelson, R. R., Todd, P. A., & Wixom, B. H. (2005). Antecedents of information and system quality: an empirical examination within the context of data warehousing. *Journal of Management Information Systems, 21*(4), 199-235.

Nonis, S., & Swift, C. O. (2001). An examination of the relationship between academic dishonesty and workplace dishonesty: a multicampus investigation. *Journal of Education for Business*, *77*(2), 69-77.

Nunnally, J. C., & Bernstein, I. H. (1994). The Assessment of Reliability. *Psychometric Theory, 3,* 248-292.

Pahnila, S., Siponen, M., & Zheng, X. (2011). Integrating habit into UTAUT: the Chinese eBay case. *Pacific Asia Journal of the Association for Information Systems, 3*(2), 1-30.

Pedroso, R., Zanetello, L., Guimaraes, L., Pettenon, M., Goncalves, V., Scherer, J., Kessler, F., & Pechansky, F. (2016). Confirmatory factor analysis (CFA) of the crack use relapse scale (CURS). *Archives of Clinical Psychiatry, 43*(3), 37-40.

Phau, I., & Teah, M. (2009). Devil wears (counterfeit) Prada: A study of antecedents and outcomes of attitudes towards counterfeits of luxury brands. *Journal of Consumer Marketing, 26*(1), 15-27. https://doi.org/10.1108/07363760910927019

Phyu, K. K., & Vongurai, R. (2020). Impacts On Adaptation Intention Towards Using Accounting Software in Terms of Technology Advancement at Work in Myanmar. *AU-GSB E-JOURNAL*, *12*(2), 98-111.

Pitt, L. F., Watson, R. T., & Kavan, C. B. (1995). Service quality: a measure of information systems effectiveness. *MIS Quarterly*, *19,* 173-87.

Ramayah, T., & Mohd. Suki, N. (2006). Intention to use mobile PC among MBA students: implications for technology integration in the learning curriculum. *UNITAR E-Journal, 1*(2), 1-10.

Ramdhony, D., & Munien, S. (2013). An investigation on mobile banking adoption and usage: a case study of Mauritius. *World Journal of Social Sciences*, *3*(3), 197-217.

Rhodes, R. E., & Courneya, K. S. (2003). Investigating multiple components of attitude, subjective norm, and perceived control: an examination of the theory of planned behaviour in the exercise domain. *The British Journal of Social Psychology*, *42,* 129-146.

Santos, J. (2003). E-service quality: a model of virtual service quality dimensions. *Management Service Quality, 13*(3), 233-246.

Shih, Y. Y., & Fang, K. (2004). The use of decomposed theory of planned behavior to study internet banking in Taiwan. *Internet Research, 14*(3), 213-223.

Sica, C., & Ghisi, M. (2007). The Italian versions of the Beck Anxiety Inventory and the Beck Depression Inventory-II: Psychometric properties and discriminant power. In Lange, M.A. (Ed.), *Leading - Edge psychological tests and testing research* (pp. 27-50). Nova.

Srinivasan, A. (1985). Alternative measures of system effectiveness: associations and implications. *MIS Quarterly*, *9(*3), 243-253.

Sulieman, M., Sawsan, A., & Al-Majali, M. (2015). Electronic library services acceptance and use. *The Electronic Library, 33*(6), 1100-1120.

Tan, M., & Teo, T. S. H. (2000). Factors Influencing the Adoption of Internet Banking. *Journal of the Association for Information Systems, 1,* 1-44.

Tang, L., Omar, S., Bolong, J., & Zawawi, J. (2021). Social Media Use Among Young People in China: A Systematic Literature Review. *SAGE Open, 11*, 1-17. https://doi.org/10.1177/21582440211016421

Taylor, S., & Todd, P. (1995). Understanding the information technology usage: a test of competing models. *Information Systems Research, 6*(2), 144-176.

Teo, H. H., Chan, H. C., Wei, K. K., & Zhang, Z. (2003). Evaluating information accessibility and community adaptivity features for sustaining virtual learning communities. *International Journal of Human-Computer Studies, 59*(5), 671-697.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences, 39* (2), 273-315.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science, 45*(2), 186-204.

Venkatesh, V., Morris, M., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157-178.

Wang, C.-S., Jeng, Y.-L., & Huang, Y.-M. (2017). What influences teachers to continue using cloud services? The role of facilitating conditions and social influence. *The Electronic Library, 25*(3), 520-533.

Wu, J., & Du, H. (2012). Toward a better understanding of behavioral intention and system usage constructs. *European Journal of Information Systems, 21*(6), 680-698.

Yang, H. (2013). Bon appetit for apps: young American consumers' acceptance of mobile applications. *The Journal of Computer Information Systems, 53*(3), 85-96.

Yueh, H. P., Huang, J. Y., & Chang, C. (2015). Exploring factors affecting students' continued wiki use for individual and collaborative learning: an extended UTAUT perspective. *Australasian Journal of Educational Technology, 31*(1), 16-31.