

# FACTORS AFFECTING COLLEGE STUDENTS' WILLINGNESS TO USE MOOCS

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## Abstract

The rapid development of the Internet has accelerated the informatization of education. In recent years, MOOC, an online course based on Internet technology, has received widespread attention. MOOCs socialize high-quality educational resources and break through the restrictions of time, space and identity, making it possible for the public to study relevant courses anytime and anywhere with the help of the Internet. In 2015, the Ministry of Education deepened the reform of postgraduate education, using the promotion of online courses as a breakthrough. In this context, more and more universities have started to build MOOCs and use them as one of the means to improve the influence of schools. As the main user group of MOOCs, how to effectively meet the needs of university students and enhance their willingness to use them has become an important issue to promote the sustainable and healthy development of MOOCs. Therefore, this study will classify and study the main influencing factors of college students' willingness to use MOOC based on the technology acceptance integration model and two-factor theory, and propose corresponding countermeasures for universities and MOOC platforms to improve and promote the use of MOOC in a targeted manner.

Firstly, by sorting out relevant studies on usage intention, this study obtains the key variables influencing users' usage intention from the perspective of technology acceptance, and introduces two variables, namely organizational support and convenience, according to the special learning environment in which university students live. Then, based on the two-factor theory, according to the difference in the effect of different factors on the willingness to use, they were divided into three categories: motivating factors, health care factors and motivating health care factors, to establish the research model and put forward the research hypothesis. In order to verify the theoretical model and related research hypotheses, this study used questionnaire survey method, combined with MOOC characteristics and existing mature scales to compile questionnaires, and issued questionnaires for university student user groups. Finally, SPSS statistical analysis software was used to test the reliability and validity of the questionnaire and to conduct empirical analysis.

The results of the analysis showed that MOOC reputation, interactivity, relative advantage, organisational support, perceived usefulness, perceived ease of use, social influence, perceived quality and convenience all had significant effects on university students' willingness to use MOOC. The regression analysis of the high and low subgroups of intention to use found that the effect of different factors on college students' intention to use MOOC differed significantly, with MOOC reputation, interactivity, and organizational support as motivating factors, perceived quality and convenience as health care factors, and relative advantage, perceived usefulness, perceived ease of use, and social influence as motivating health care factors. The analysis of variance (ANOVA) on school types revealed that there were also significant differences in the degree of influence of MOOC reputation, relative advantage, social influence and organizational support among students of different types of universities, with students of ordinary universities and 211 universities being more influenced by MOOC reputation and relative advantage than those of 985 institutions, while students of 985 universities were more influenced by social influence and organizational support than those of ordinary universities and 211. In addition, students from 985 universities are more influenced by social influence and

organizational support than those from ordinary universities and 211 universities. To sum up, in order to improve college students' willingness to use MOOC and promote the sustainable and healthy development of MOOC, this study proposes the following countermeasures for MOOC platforms and colleges: continuously improve the quality of MOOC and enhance user experience; improve the level of interaction and highlight the relative advantages of MOOC; strengthen publicity and promotion to enhance social influence; increase organizational support to provide convenience for college students to use MOOC.

**Keywords:** MOOC; willingness to use; influencing factors; two-factor theory

## **Introduction**

### **Statement of the problems**

Currently, the development of MOOC in China presents two extremes: on the one hand, the state, universities and enterprises have high enthusiasm and expectation for MOOC and regard it as a good opportunity to promote the reform and innovation of China's education model, and continue to increase the construction investment and research exploration of MOOC, on the other hand, the current MOOC users have a low level of continuous participation, insufficient user stickiness and high dropout rate, which makes the existing MOOC resources are not well utilized and there is a great waste of resources, which leads to a confrontational situation in MOOC development in China. Several 985 universities and 211 universities in China have been involved in MOOC course production and platform construction, and have invested a lot of time, energy, material resources and other resources in MOOC development; however, many urgent problems need to be solved in the actual development and application of MOOC, MOOC cannot be effectively integrated with university teaching at present, MOOC credits are not certified, MOOC learning quality cannot be guaranteed. However, there are many urgent problems in the actual development and application of MOOC, such as MOOC cannot be effectively integrated with university teaching, MOOC credits are not certified, MOOC learning quality cannot be guaranteed, MOOC learning interruption is serious, the effective utilization rate of MOOC resources is low, MOOC operation mode is not sound, and MOOC intellectual property rights are controversial. "As a kind of educational technology innovation product, MOOC can only truly realize its value and obtain sustainable and healthy development if it is recognized and effectively used by users. According to the MOOC industry white paper released by the Ministry of Education, China's MOOC users have various levels of education, with degrees spanning graduate students, undergraduates, senior high school students and other levels, of which nearly half of the users are aged 18-25, and the proportion of college students and graduate students is over 80%, which indicates that college students are the main group of MOOC users in China. In order to better understand user needs, improve the current situation of MOOC, promote the sustainable development of MOOC and the effective use of high-quality educational resources, we need to take the user perspective, take the university student user group as the research object, study the factors that affect their willingness to use MOOC, whether there are significant differences in the effect of these factors on the willingness of university students to use MOOC, so as to provide the opportunity for universities and MOOC platforms to improve them in a targeted manner and promote the sustainable and healthy development of MOOC.

### **Research objectives**

Objective 1 examines whether there is an effect of organisational support, facilitation on users' willingness to use MOOC.

Objective 2 examines: whether motivational factors, health care factors, and motivational health care have an effect on users' willingness to use MOOC.

## Research hypothesis

- H1: MOOC reputation has a positive effect on users' willingness to use.
- H2: The relative advantages of MOOCs have a positive effect on users' willingness to use them.
- H3: The interactivity of the MOOC has a positive effect on users' willingness to use it.
- H4: Organizational support has a positive impact on users' willingness to use
- H5: Perceived quality has a positive effect on users' intention to use.
- H6: Convenience has a positive effect on users' willingness to use.
- H7: Perceived usefulness has a positive effect on users' willingness to use
- H8: Perceived ease of use has a positive effect on user intention to use.
- H9: Social influence has a positive effect on users' willingness to use.
- H10: The effect of relative advantage on college students in different types of colleges and universities is significantly different.
- H11: The effect of perceived usefulness on college students in different types of colleges and universities is significantly different.
- H12: There are significant differences in the willingness to use MOOC among college students of different types of universities.

## Scope and limitations of the study

The target population of this study is mainly college students who have used MOOC in China.

## Benefits of the study

As a special form of course teaching produced in the Internet environment, MOOC has special characteristics that distinguish it from both traditional school education and the previous online education model. Because of these special features, MOOC has been more sought after. In the process of MOOC's "opening up", traditional higher education has been the most impacted, both in terms of education and teaching mode and the development of time and space, the rapid development of MOOC has formed a fierce collision with the traditional higher education's stubbornness.

## Theoretical and literature reviews

### Meaning and characteristics of MOOC

MOOC (MOOC), or Massive Open Online Course, is a product of "Internet + Education". It is a newly emerged model of online course development, which is directly translated as "Massive Open Online Course". The MOOC education model is characterized by its ability to integrate multiple social networking tools and multiple forms of digital resources, and to form diverse learning tools and rich course resources, as well as to break through the limitations of traditional courses in terms of time and space and the number of students in traditional courses, thus increasing the autonomy of students' participation in course learning.

### Impact of MOOC on higher education

Since 2012, when the three major platforms in the United States started their operations and attracted tens of thousands of learners from all over the world, MOOC was instantly regarded as the best choice to save higher education, and the New York Times even called 2012 the "Year of the MOOC", which shows its great influence. At present, as a new mode of teaching and learning that has emerged less than a decade ago and has been developing rapidly

for only a few years, MOOC is still not disruptive in its ability to "reinvent" higher education, but more of an improvement in a sense: it is challenging to the existing higher education, but more of an opportunity for both to promote each other's development. The opportunity.

This chapter first summarizes and composes the relevant studies on MOOC and willingness to use, understands the current situation of MOOC research, analyzes the problems and defects of the existing research on willingness to use MOOC, and then, on this basis, determines the theoretical basis of this study by combining the research questions and research objectives, and summarizes and composes the relevant theories and their research applications to lay the theoretical Foundation.

## **Research methodology**

### **Population/sampling method/variables**

The total sample size should be no less than 100 and there should be at least 5 independent samples for each measure, and the ideal sample size should be 10-20 times the number of variables. (Gorsuch et al.) In this study there were 36 measures and 11 variables, so the ideal sample size should be 220 or more.

### **Data collection**

The questionnaire was distributed from October 10, 2021, and the collection took 10 days, and a total of 475 questionnaires were collected. After testing the content of the completed questionnaires, 47 questionnaires with too short a response time, incomplete responses, or identical responses for all options were excluded, and 428 valid questionnaires were actually received, with a valid recovery rate of 90.1%.

### **Statistics and data analysis**

In this study, multiple regression analysis was used to test the research hypothesis and examine the relationship between different influencing factors and intention to use. intention to use was set as the dependent variable and other 9 variables were set as independent variables and multiple regression analysis was conducted. table 4.18 and table 4.19 show the results of regression analysis on the influencing factors of college students' intention to use MOOC.  $r^2$  is the coefficient of determination, which represents the ability of the regression equation to explain the total variation.

### **Data analysis results**

Through the regression analysis of the factors influencing college students' willingness to use MOOC and the ANOVA of school type on the influencing factors, the results of the study show that: MOOC reputation, relative advantage, interactivity, perceived usefulness, perceived ease of use, social influence, organizational support, perceived quality, and convenience all have significant effects on college students' willingness to use MOOC, while some factors are found to be influenced by school type It was also found that some of the factors were affected by the type of school and had significant differences in their effects on college students, i.e., there were significant differences in the effects of MOOC reputation, relative advantage, social influence, and organizational support on college students of different types of universities, and there were no significant differences in the effects of interactivity, perceived usefulness, perceived ease of use, perceived quality, and convenience on college students of different types of universities. The results of testing the research hypotheses were as follows.

No.	Hypothesis Content	Results
H1	MOOC reputation has a positive effect on university students' willingness to use MOOC	Established
H2	Interactivity has a positive effect on university students' willingness to use MOOC	Established
H3	Relative advantage has a positive effect on students' willingness to use MOOC	Established
H4	Organizational support positively influences students' willingness to use MOOC	Established
H5	Perceived usefulness has a positive effect on university students' intention to use MOOC	Established
H6	Perceived ease of use has a positive effect on university students' willingness to use MOOC	Established
H7	Social influence has a positive effect on university students' intention to use MOOC	Established
H8	Perceived quality has a positive effect on university students' willingness to use MOOC	Established
H9	Convenience has a positive impact on university students' willingness to use MOOCs	Established
H10	Significant differences in the impact of MOOC reputation on university students of different types of higher education	Established
H11	Significant differences in the impact of interactivity on university students of different types of higher education	Not Established
H12	Significant differences in the impact of relative advantage on university students of different types of higher education	Established
H13	The effect of perceived usefulness on university students differs significantly by type of college	Not Established
H14	The impact of perceived ease of use on university students differs significantly by type of college	Not Established
H15	Significant differences in the impact of social influence on university students of different types of higher education	Established
H16	Significant differences in the impact of organisational support on university students of different types of higher education	Established
H17	The impact of perceived quality on university students differs significantly by type of college	Not Established
H18	Significant differences in the impact of facilitation on university students by type of college	Not Established
H19	There are significant differences in the willingness to use MOOC among different types of university students	Not Established

## Conclusion and Discussion

### Summary of the study

This study builds on existing research and analyses the impact of key variables on users' willingness to use MOOCs, based on a model of technology acceptance and integration, in relation to the characteristics of MOOCs and the particular learning environment in which university students live. On top of this, a more detailed classification of these influencing

factors is made according to the two-factor theory and the different effects of the influencing factors on users' willingness to use. A distinction is made between motivational factors, health factors and motivational health factors that influence users' willingness to use, which both extends the application of the two-factor theory and provides a new research perspective for the study of MOOC use willingness. Finally, a single-factor analysis of school type was conducted to analyse the differences between different factors and the willingness to use MOOC among university students of different types. Through the descriptive analysis of a series of survey data, this study mainly draws the following conclusions:

First: in general, university students in China do not know enough about MOOCs, and although they are willing to use them, university users' ratings of MOOCs' interactive design, organizational support and social impact are relatively low, which are not conducive to the promotion of MOOC use and need to be further improved.

Second: MOOC reputation, relative advantage, interactivity, organisational support, perceived usefulness, perceived ease of use, social impact, all have significant effects on university students' willingness to use MOOC, and we can use this result for MOOC promotion.

Third: The effect of different factors on college students' willingness to use MOOC is significantly different. College students' motivation is influenced by motivational factors, and we should focus on the development of motivational factors to promote MOOC.

Fourth: There is no significant difference in the type of school on the willingness of college students to use MOOC, perceived quality, perceived ease of use, perceived usefulness and interactivity, and the effect is not much different. So the above factors have no reference value for the improvement of MOOC construction.

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