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Influencing Factors of Behavioral Intention Toward Online Teaching in Vocational Colleges in Nanchang, China

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Abstract

Purpose: This study aims to understand the factors that influence vocational college teachers in Nanchang, China, to choose online teaching. The conceptual framework is derived from previous theories, suggesting connections between Attitude (AT), Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Behavioral Intention (BI). **Research design, data, and methodology:** The study analyzed responses from 502 teachers at JiangXi College of Science and Technology. For reliability, a Cronbach's Alpha was employed in a pilot test with 30 participants. The Multiple Linear Regression (MLR) involved questionnaires that contributed to the development of the finalized action research plan. During the strategic plan arrangement, 30 teachers were selected through purposive sampling from the Ideological and Political Department and the School of Nursing at JVC to participate in the study. **Results:** This research revealed that attitude, performance expectancy, effort expectancy, social influence, and facilitating conditions impacted behavioral intention in the context of JiangXi, China. **Conclusions:** This study reveals that the primary need is for stability, followed by development factors and respect needs. Recently, China's online teaching environment has become more harmonious, despite the ongoing rise of epidemics. These external changes influence college teachers' online teaching practices.

Keywords: Online Teaching, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral intention

JEL Classification Code: I23, J28, L2

1. Introduction

Jiangxi Vocational College of Science and Technology, located in Nanchang, Jiangxi province, is a top vocational college with more than 500 full-time teachers and over 15,000 students. The college boasts a beautiful campus environment equipped with modern online teaching facilities. The college collaborates with telecommunications operators to enhance network quality, ensuring high-speed, stable, and extensive campus network coverage to maximize the quality of online classes for both teachers and students.

The population sample in this study consists of full-time teachers who have conducted online courses at Jiangxi Vocational College of Science and Technology. Given the significance of online teaching during emergencies, this study aims to explore the factors influencing college teachers' attitudes and behavioral intentions towards online teaching platforms. The results and recommendations of this study are intended to benefit educational institutes, academicians, researchers, and learners by aiding in the transition to and adoption of effective strategies for the valuable use of online teaching platforms.

The rapid growth of online teaching, driven by technological advancements and external pressures such as the COVID-19 pandemic, has led to significant changes in educational practices worldwide. However, in the context of vocational education in China, particularly in Nanchang, the factors that influence teachers' decisions to adopt online teaching remain underexplored. Understanding these factors is critical for improving the quality and effectiveness of online education in vocational colleges, yet there is limited research addressing how teachers' attitudes, expectations,

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and social and institutional factors contribute to their behavioral intention to choose online teaching.

While much research has been conducted on online teaching adoption in universities and general education, there is a significant gap in studies focusing specifically on vocational college teachers in China. The unique context of vocational education, which combines theoretical instruction with practical training, poses specific challenges and opportunities for online teaching adoption. Previous research has primarily focused on higher education settings, overlooking the distinct needs and experiences of vocational teachers, particularly in smaller cities like Nanchang. Additionally, while frameworks such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) have been widely applied, there is insufficient empirical research that tests these models in the context of vocational education in China.

This study is significant as it addresses a critical gap in the understanding of factors influencing online teaching adoption in vocational education settings in China. The findings will provide insights into how vocational college teachers perceive online teaching and what factors motivate or hinder their intention to adopt this teaching method. These insights will be useful for policymakers, educational administrators, and training program developers who seek to enhance the online teaching infrastructure, training, and support for vocational education institutions. Additionally, the study contributes to the broader academic discussion on online education adoption, providing empirical evidence that extends existing theoretical models to a new and underrepresented context.

Research Objectives:

To examine the influence of teachers' Attitude (AT) toward online teaching on their Behavioral Intention (BI) to adopt online teaching practices.

To investigate the impact of Performance Expectancy (PE) and Effort Expectancy (EE) on vocational teachers' decisions to adopt online teaching at JiangXi College of Science and Technology.

To assess the role of Social Influence (SI) and Facilitating Conditions (FC) in shaping the behavioral intentions of vocational college teachers regarding online teaching.

To provide actionable recommendations for improving online teaching adoption in vocational education institutions based on empirical findings from the study.

To explore the broader implications of external changes, such as the rise of epidemics and technological advancements, on the online teaching practices of vocational educators in Nanchang, China.

2. Literature Review

2.1 Attitude

Attitude is defined as an understanding of online teaching behavior, influenced by individual preferences and depth of comprehension of online teaching practices (Tan, 2017). Attitudes impact teachers' readiness to adopt modern technologies, their usage in education, and their willingness to integrate these technologies into their practices. However, these attitudes are developed through structured experiences (Breckler & Wiggins, 1989) that arise from interactions with these technologies in specific school settings (Raygan & Moradkhani, 2020).

H1: Attitude has a significant impact on behavioral intention.

2.2 Performance expectancy

David-West et al. (2018) view performance expectancy as the use of specific information technologies to help teachers conduct better teaching and make the process more efficient. Performance expectancy refers to teachers' belief that online teaching can optimize their teaching experience and influence their future intentions, along with effort expectancy (Venkatesh et al., 2003). The results are logical because teachers' opinions about using new technology in teaching are important, especially when they have the autonomy to decide. Online teaching is perceived as more convenient and cost-effective compared to other services (David-West et al., 2018).

H2: Performance expectancy has a significant impact on behavioral intention.

2.3 Effort expectancy

Effort expectancy is understood as a teacher's perception of the difficulty or ease of using the system (Jebril, 2021). When teachers perceive that online teaching is easy to use and requires minimal effort to achieve the desired performance, they are more likely to be satisfied. Effort expectancy, or the ease of use associated with this technology, is considered a core factor, particularly in light of the limited comprehensive understanding of network technologies in our interactions (van Bussel et al., 2022). This is a crucial factor affecting teachers when they first start using technology.

H3: Effort expectancy has a significant impact on behavioral intention.

2.4 Social influence

Social influence, in its broadest sense, refers to how the actions of individuals affect the subsequent behaviors of those who witness them (Prada-Villamizar & Sánchez-Peinado, 2021). In a vast country like China, where people come from various backgrounds, some may look for validation from others before adopting online teaching practices. Expanding on previous discussions, the authors propose that family, friends, coworkers, and others can impact a teacher's decision to embrace online teaching. This study reveals that online teaching is becoming more prevalent in colleges, indicating a relationship between social influence and the implementation of online teaching to improve education (Abeeku et al., 2023).

H4: Social influence has a significant impact on behavioral intention.

2.5 Facilitating Conditions

To understand teachers' decisions to adopt technology, it is crucial to evaluate the impact of facilitating conditions, which include the availability of technical infrastructure and support for using an online teaching platform (Venkatesh et al., 2003). In the realm of online teaching behavior, facilitating conditions refer to the accessibility of resources such as mobile network coverage, affordability of mobile devices, and assistance from service providers (David-West et al., 2018). In this context, the facilitating conditions for online teaching involve the availability of computing platforms, data management services, application software, physical facility support, and IT management and service platforms enabled by new technological tools (Abeeku et al., 2023).

H5: Facilitating conditions has a significant impact on behavioral intention.

2.6 Behavioral Intention

Behavioral intention is defined as a teacher's commitment to using an online teaching platform (Ngai et al., 2007; Ul-Ain et al., 2015). For example, Chopdar et al. (2018) found that behavioral intention significantly influences actual usage of online teaching platforms. Aligned with this perspective, behavioral intention elucidates the factors influencing teachers' online teaching behaviors (Abeeku et al., 2023). Consequently, substantial evidence supports the notion that behavioral intentions impact technology acceptance within online teaching system platforms (Abeeku et al., 2023; Deniswara et al., 2023; Handoko et al., 2020).

3. Research Methods and Materials

3.1 Research Framework

The researcher introduced a conceptual framework to illuminate the factors influencing teachers' behavioral intention to use UTAUT2 in higher education institutions in JiangXi, China. Three primary theories have sought to explain teachers' sharing intentions and actual sharing behaviors within organizations: the Technology Acceptance Model (Davis, 1989), the Theory of Planned Behavior (Ajzen, 1991), and the Extended Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2012). These three theoretical frameworks collectively support and contribute to the development of the conceptual framework illustrated in Figure 1.

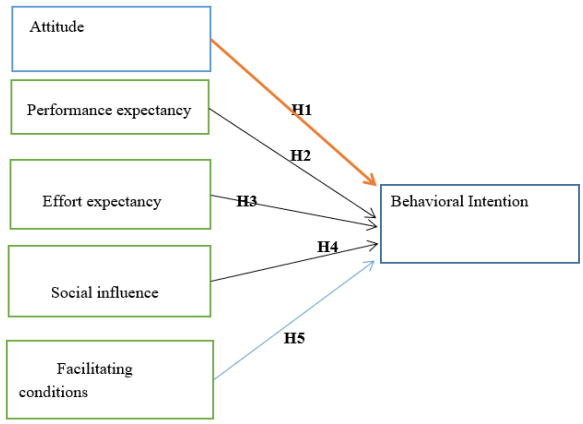

Figure 1: Conceptual Framework

H1: Attitude has a significant impact on behavioral intention.
H2: Performance expectancy has a significant impact on behavioral intention.
H3: Effort expectancy has a significant impact on behavioral intention.
H4: Social influence has a significant impact on behavioral intention.
H5: Facilitating conditions has a significant impact on behavioral intention.

3.2 Research Methodology

The factors influencing behavioral intention (BI) regarding online teaching at Jiangxi Vocational College (JVC) in Nanchang, China, are examined in this study. The methodology includes details on the research design, approach, population, sample size, and sampling procedures. Additionally, the data collection method encompasses the research instruments, the design of the questionnaire,

validity analysis, a pilot test for reliability, data collection, and analysis. The chapter also measures and discusses Item-Objective Congruence (IOC) and preliminary tests. Later, the researcher describes the finalized intervention design implementation model and the strategic planning process used to test the hypotheses, along with the research timeline.

3.3 Research Population, Sample Size, and Sampling Procedures

3.3.1 Research Population

The study investigates the population from three different departments at Jiangxi Vocational College (JVC): the Ideological and Political Department, the Public Foundation Department, and the Nursing College. There are 171 teachers in the Ideological and Political Department, 153 teachers in the Public Foundation Department, and 178 teachers in the Nursing College.

3.3.2 Sample size

A survey questionnaire was distributed via WeChat groups, totaling 502 teachers, who represent the research population for this study. Hair et al. (2010) suggested that a sample size between 30 and 500 is sufficient for most research. In the preliminary analysis stage, the sample size for Multiple Linear Regression (MLR) testing is 502.

3.3.3. Sampling Procedures

In this study, purposive sampling was employed for questionnaire distribution, with researchers intentionally selecting teachers from the Ideological and Political Department based on their roles at Jiangxi Vocational College (JVC). The questionnaire was disseminated through WeChat groups to a total of 502 teachers; after reviewing the responses, all 502 were deemed qualified for further analysis. The Multiple Linear Regression (MLR) involved questionnaires that contributed to the development of the finalized action research plan. During the strategic plan arrangement, 30 teachers were selected through purposive sampling from the Ideological and Political Department and the School of Nursing at JVC to participate in the study.

3.4. Research Instruments

3.4.1 Design of Questionnaire

The questionnaire was divided into three sections.

The first section included demographic questions about gender.

The second section consisted of questions related to the following factors: attitude, performance expectancy, effort expectancy, social influence, and facilitating conditions.

The third section focused on behavioral intention. A brief description of each scale follows. Including respondents' demographic and lifestyle characteristics in the questionnaire is essential, as this information can be used to compare their opinions, intentions, and other factors.

3.4.2 Components of Questionnaire

The questionnaire investigates the factors influencing teachers' behavioral intention, measured through levels of agreement or disagreement on rating scales. A Likert scale is particularly suitable for this purpose. This study utilized a 5-point Likert scale (Likert, 1932), ranging from Strongly Disagree (1) to Strongly Agree (5), with Disagree (2), Neutral (3), and Agree (4) as intermediate options (Dawes, 2008; Joshi et al., 2015).

3.4.3 IOC Results

The quality of content ensures that appropriate elements are included in the questionnaire for data collection and assessment of respondents. In this study, the Item-Objective Congruence (IOC) index, a form of content validity, is relevant to this inquiry. The IOC method gathers expert judgments to validate the instruments (Rovinelli & Hambleton, 1977). A minimum of three experts is required to calculate the IOC. All items are validated at 0.6.

3.4.4 Pilot survey and Pilot test results

A questionnaire containing 27 questions was distributed to 30 respondents for the reliability test, and all items were retained following the IOC process. The test results, along with the correlation levels, are presented in the following table. All items in these analyses passed the reliability test with scores of 0.6 or higher: 0.958 for attitude, 0.957 for performance expectancy, 0.953 for effort expectancy, 0.961 for social influence, 0.953 for facilitating conditions, and 0.955 for behavioral intention (see Table 1).

Table 1: Pilot Test Result

Variables	Items	Cronbach's Alpha	Strength of Association
Attitude	5	.958	Excellent
Performance expectancy	4	.957	Excellent
Effort expectancy	5	.953	Excellent
Social influence	4	.961	Excellent
Facilitating conditions	5	.953	Excellent
Behavioral intention	4	.955	Excellent

4. Results and Discussion

4.1 Results

4.1.1 Demographic Profile

The researcher demonstrated the demographic profile of the entire research population (n=502), followed by the selected students' group (n=30), who participated in IDI, as shown in Table 2.

Table 2: Demographic Profile

Entire Research Population (n=502)		**Frequency**	**Percent**
Gender	Female	127	25.3%
	Male	375	74.7%
Behavioral intention	None	6	0.01%
	Yes	496	99.99%
Total		**502**	**100%**
Strategic Plan Participants (n=30)		**Frequency**	**Percent**
Gender	Male	24	80.70%
	Female	6	19.30%
Behavioral intention	None	9	70%
	Yes	21	30%
Total		**30**	**100%**

4.1.2 Results of multiple linear regression

Multiple linear regression was employed to test the hypotheses. Since both the independent variables (the five dimensions of UTAUT2) and the dependent variable (behavioral intention) are continuous, multiple linear regression methods are suitable for conducting the analysis.

Table 3: The multiple linear regression of five independent variables on teacher's satisfaction

Variables	**Std. Deviation**	**t-value**	**p-value**	**R**	**R^2**
Attitude	0.0357	1.51**	<.001	0.930	0.865
Performance expectancy	0.0370	4.31**	0.001		
Effort expectancy	0.0401	-3.24**	<.001		
Social influence	0.0297	3.93**	<.001		
Facilitation conditions	0.0372	3.88**	<.001		

Note: p-value <0.001**

The research hypotheses were tested using results from Multiple Linear Regression (MLR). After finalizing the research hypotheses, the following hypotheses were related to the differences between the current and expected strategic plan stages for all sub-variables:

H6: There is a significant mean difference in attitude between the current strategic plan and expected strategic plan stages.

H7: There is a significant mean difference in performance expectancy between the current strategic plan and expected strategic plan stages.

H8: There is a significant mean difference in effort expectancy between the current strategic plan and expected strategic plan stages.

H9: There is a significant mean difference in social influence between the current strategic plan and expected strategic plan stages.

H10: There is a significant mean difference in facilitating conditions between the current strategic plan and expected strategic plan stages.

H11: There is a significant mean difference in behavioral intention between the current strategic plan and expected strategic plan stages.

4.2 Strategic Plan Process

To verify whether a series of strategic plans adopted by the school significantly impacts teachers' perceptions of the four factors of salary and salary, respect, training and development, and teamwork and whether it is conducive to significantly improving teachers' satisfaction, the researchers explained the specific measures of SP in chronological order, as shown in Figure 2.

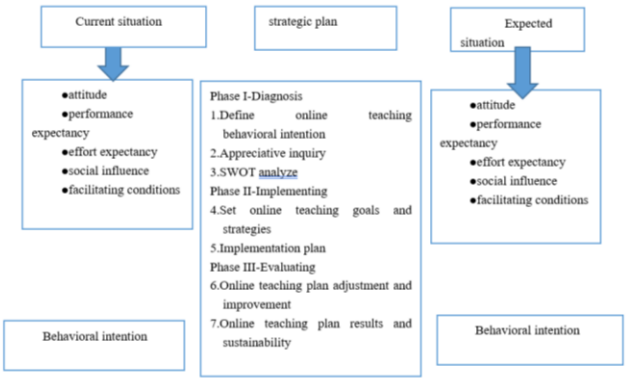

Figure 2: SP Activities

4.3 Results Comparison between Pre-IDI and Post-IDI

Multiple linear regression was employed to test the hypotheses. Given that both the independent variables (five dimensions of UTAUT2) and the dependent variable (behavioral intention) are continuous, the analysis was appropriately conducted using multiple linear regression techniques.

Table 4: Paired-Sample T-Test Results

Variables	Mean	SD	t-Value	p-value
Attitude				
Pre-SP	3.39	0.533	-9.02	<.001
Post-SP	4.53	0.606		
Performance Expectancy				
Pre-SP	3.38	0.512	-8.94	<.001
Post-SP	4.57	0.619		
Effort Expectancy				
Pre-SP	3.48	0.565	-7.29	<.001
Post-SP	4.49	0.664		
Social Influence				
Pre-SP	3.38	0.507	-10.03	<.001
Post-SP	4.57	0.646		
Facilitating Conditions				
Pre-SP	3.46	0.526	-8.64	<.001
Post-SP	4.61	0.617		
Behavioral Intention				
Pre-SP	3.44	0.532	-9.01	<.001
Post-SP	4.65	0.621		

From Table 5, it can be observed that there is a significant increase in attitude at the expected-strategic plan stage (M = 4.53, SD = 0.606) compared to the current-strategic plan stage (M = 3.39, SD = 0.533); t-value = -9.02, $p < 0.001$, N = 30. The mean difference is 1.14. Therefore, hypothesis 6, which states that there is a significant difference in attitude between the current and expected strategic plan stages, is supported based on a p-value < 0.001.

There is a significant increase in performance expectancy at the expected-strategic plan stage (M = 4.57, SD = 0.619) compared to the current-strategic plan stage (M = 3.38, SD = 0.512); t-value = -8.94, $p < 0.001$, N = 30. The mean difference is 1.19. Therefore, hypothesis 7, which states that there is a significant difference in performance expectancy between the current strategic plan and the expected strategic plan stage, is supported based on a p-value < 0.001.

It is evident that there is a significant increase in effort expectancy at the expected-strategic plan stage (M = 4.49, SD = 0.664) compared to the current-strategic plan stage (M = 3.48, SD = 0.565); t-value = -7.29, $p < 0.001$, N = 30. The mean difference is 1.01. Therefore, hypothesis 8, which states that there is a significant difference in effort expectancy between the current strategic plan and the expected strategic plan stage, is supported based on a p-value < 0.001.

There is a significant increase in social influence at the expected-strategic plan stage (M = 4.57, SD = 0.646) compared to the current-strategic plan stage (M = 3.38, SD = 0.507); t-value = -10.03, $p < 0.001$, N = 30. The mean difference is 1.19. Therefore, hypothesis 9, which states that there is a significant difference in social influence between the current strategic plan and the expected strategic plan stage, is supported based on a p-value < 0.001.

There is a significant increase in facilitating conditions at the expected-strategic plan stage (M = 4.61, SD = 0.617) compared to the current-strategic plan stage (M = 3.46, SD = 0.526); t-value = -8.64, $p < 0.001$, N = 30. The mean difference is 1.15. Therefore, hypothesis 10, which states that there is a significant difference in facilitating conditions between the current strategic plan and the expected strategic plan stage, is supported based on a p-value < 0.001.

There is a significant increase in behavioral intention at the expected-strategic plan stage (M = 4.65, SD = 0.621) compared to the current-strategic plan stage (M = 3.44, SD = 0.532); t-value = -9.01, $p < 0.001$, N = 30. The mean difference is 1.21. Therefore, hypothesis 11, which states that there is a significant difference in behavioral intention between the current strategic plan and the expected strategic plan stage, is supported based on a p-value < 0.001.

5. Conclusions, Recommendations and Limitations

5.1 Conclusions & Discussions

This study examines the relationship and impact of behavioral intention on online teaching among college teachers. It reveals that the primary need is for stability, followed by development factors and respect needs. Recently, China's online teaching environment has become more harmonious, despite the ongoing rise of epidemics. These external changes influence college teachers' online teaching practices.

Multiple linear regression analysis shows that attitude significantly impacts behavioral intention. Observations, interviews, and group mentoring indicate that teachers with successful experiences or who identify with successful individuals often exhibit strong attitudes. This attitude strengthens with accumulated success, fostering more positive behavioral intentions.

Specific goal setting enhances performance expectancy and effort expectancy, leading to better feasibility, more pathways, and firmer implementation. College teachers benefit from knowing when to adjust plans and revise goals,

resulting in significant improvements in both quantitative and qualitative research after implementing a strategic plan.

Social influence plays a crucial role in completing courses. Unlike the other dimensions, which improve through specific, actionable activities and show short-term strategic plan effects, social influence involves persuading others to influence actions and decisions. This influence is strongly supported by close individuals such as family, friends, and the work environment.

Facilitating conditions refer to the extent to which users believe the online teaching platform is supported by the college for educational purposes, including technical assistance (McKeown et al., 2008). Clear goal setting, feasibility, and firm implementation enhance these conditions. College teachers should be aware of when to change plans and revise goals, resulting in significant improvements in quantitative and qualitative research.

5.2 Recommendations

With the rapid development of the social economy and the fast pace of knowledge updates, society demands higher quality from teachers. For college teachers, the success rate of initial education is notably high. To improve the intention of online teaching behaviors, it's essential to actively guide college teachers in effective online teaching planning and adjust their intentions reasonably. A positive attitude enhances teachers' motivation for online teaching, allowing them to gain successful experiences, which is a crucial source of motivation. Teachers who lack performance expectancy often exaggerate the challenges of online teaching and life, underestimating their abilities. In their teaching careers, they should remain focused on their goals. The overall motivation level of teachers in Chinese non-government colleges is low, necessitating the setting of achievable goals and tasks to boost their effort expectancy and foster positive attitudes toward the present and future. When facing setbacks, social influence helps withstand pressure and adversity. Therefore, teachers in non-government colleges should promptly establish their teaching ideals and goals to improve their ability to overcome challenges and create favorable conditions for success.

5.3 Limitations for Future Research

Due to limitations in research conditions and personal circumstances, acquiring participant resources can be challenging, leading to potential imbalances that may affect the research outcomes. The theory of online teaching behavioral intention, introduced in recent years, has emphasized its uniqueness, importance, and advantages in higher education. However, it remains underdeveloped in vocational education, with many aspects still requiring further investigation. While Chinese scholars have explored online teaching behavioral intention, key challenges include understanding college policies, investing in hardware facilities, and ensuring the maintenance of online teaching platforms by software companies.

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