Research on Influencing Factors of College Students' Willingness to Use Voice Social Software Based on Technology Acceptance Model

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ABSTRACT
After the video and text, social platforms are widely used, voice social networking has become the blue ocean market. This study combines the background of voice social development, based on the technology acceptance model, through the data collection method of questionnaire survey and data analysis method of multiple linear regression, studies the influencing factors of college students' willingness to use voice social software. The analyzed data shows that perceived value and social connection have a positive impact on the willingness to use voice social software. This study concludes that the most important factors affecting the willingness to use voice social software are its sociability, social significance and value gained in social interaction.

Keywords: *Technology acceptance model, voice, social networking software, college students*

1. INTRODUCTION

The popularity of the instant voice social software Clubhouse in the world makes us notice a trend of "auditory turn" in social communication. Compared with traditional video text socialization, it has the advantages of lighter content supply than video and more diverse forms of expression than text. Users only need to obtain and transmit information through ears and sounds, without resorting to visual and tactile senses, which reduces social threshold and social burden. At the same time, the anonymous voice social functions provided by some voice social software can meet the current personal demand for lightweight social relationships. According to the data survey of Ai Media Consulting, in 2020, 21.4% of users in China Mobile's social networking often use voice to socialize, and the proportion is more than twice that of video social networking [1]. In the era of absolute "visualization center", people began to call for an "auditory regression" to get rid of the shackles of the screen, and voice social software may become a new outlet for the development of social platforms in the future.

This study will combine the background of the gradual rise of "sound economy," based on the technology acceptance model, and will target college students, studying the influencing factors of their willingness to use voice social software, in order to explore the future development direction of voice social software.

2. METHODOLOGY

2.1 Technology acceptance model

Technology Acceptance Model (TAM) was first proposed by Fred D. Davis[2] when studying users' acceptance of information systems: Davis applied rational behavior theory (TRA) and planned behavior theory (TPB) to the field of information systems to explain users' acceptance of information technology, thus obtaining the initial technology acceptance model. Davis's technology acceptance model puts forward two main indicators to judge technology acceptance behavior, which is also the core of the technology acceptance model, perceived usefulness and perceived ease of use. Perceived usefulness is the degree of job performance that users subjectively think the target system has improved [3], and perceived ease of use is the degree of ease that users subjectively think the target system is used [4]. The proposal of the technology acceptance model has been widely concerned by academic circles, and it has also been widely cited. However, at that time, the

research focus was mainly on the framework of the model, and there were still some limitations, such as no consideration of social influence, strong homogeneity of research objects, single target research software and limitations of measurement methods [5].

With the development of the times, the technology acceptance model has been continuously developed and perfected, and the research focus on the technology acceptance model has gradually shifted and deepened, showing a trend of interdisciplinary and new theory combination.

2.2 Research questions and assumptions

Based on the above literature review, this study will focus on the influencing factors of the technology-based acceptance model on college students' willingness to use voice social software.

First of all, the two key influencing factors of the technology acceptance model are perceived ease of use and perceived usefulness, so in this study, we put forward the following assumptions:

H1: Perceived usefulness has a positive impact on the willingness to use voice social software.

H2: Perceived ease of use has a positive impact on the willingness to use voice social software.

We divide perceived value into social existence and emotional value. The perceived degree of social existence when using social software is very important for building trust. If people feel something similar to real-life in voice social software, he/she is likely to get encouragement from other people [6].

H3: Perceived value has a positive impact on the willingness to use voice social software.

Before using voice social software, people can't know for sure whether their expectations meet their own expectations, and some results may make people feel unpleasant. Therefore, people's decision-making implies uncertainty about the results, and this uncertainty, that is, perceived risk, has been found by many scholars that perceived risk is negatively correlated with willingness to use [7].

H4: Perceived risk has a negative impact on the willingness to use voice social software.

To a great extent, people want to have a reputation, be popular with others and be recognized or promoted by others. According to social exchange theory [8], people use voice social software because they want their actions to generate rewards to some extent, such as respect, status and recognition. Opportunities to improve personal reputation provide an important reason for college students to use voice social software [9].

H5: Self-recommendation motivation has a positive impact on the willingness to use voice social software.

In general, groups with high face value have a wide social range [10], but those with low face value have low personal self-esteem and an even greater desire for social identity and social recognition. Voice social software provides them with a platform to acquire social identity and social recognition of others, so we put forward the following assumptions:

H6: Yan value has a negative impact on the willingness to use voice social software.

Secondly, voice also has a certain influence on the willingness to use voice social software. People will have more confidence in online voice social interaction if the cognition of their voice is pleasant. But if you think the voice is not pleasant, you will lose confidence and motivation to use voice social software. To sum up, we think:

H7: Sound has a positive influence on the willingness to use voice social software.

Social connection factors will affect the willingness to use voice social software. Social identity represents a sense of belonging to the social environment in which people are motivated to interact socially with others. Through communication and contact with others in the social environment, we can learn other people's behavior, which can bring a sense of belonging and accomplishment to enhance our social identity.

H8: Social connections have a positive impact on the willingness to use voice social software.

3. RESEARCH DESIGN

3.1 Research sampling

In this study, data were collected through an online questionnaire survey. The target population is full-time college students. We received 196 responses in total. After excluding invalid questionnaires, the final sample size was 187.

3.2 Questionnaire design

The question of the questionnaire covers three parts: the dependent variable, independent variable in the model and independent variable of population information.

3.2.1 dependent variable

According to the research purpose, the dependent variable of this study is the willingness to use, and the specific question to measure the willingness to use is: I am very willing to use voice social software. The variable was measured by Likert scale 7 (1= totally disagree, 7= totally agree; Mean: 5.11; Standard deviation: 1.81)

3.2.2 Population information variables

The questionnaire measures the demographic information of the subjects, including seven variables: gender, grade, emotional status, whether they are the only child, whether their parents divorced or died, family monthly income and personal monthly living expenses.

Among the 187 valid questionnaires, 83 were males (44.4%) and 104 were females (55.6%). There are 131 only children (70.1%) and 56 non-only children (29.9%). 173 (92.5%) parents are alive and not divorced, and 14 (7.5%) parents are dead or divorced. 57 single people (30.5%) and 130 non-single people (69.5%).

When collecting grade information, the questionnaire lists nine grades from freshman to sophomore for subjects to choose from. When calculating variables, we treat them as continuous equidistant variables ("freshman" =1, "sophomore" = 9; Average value: 3.49; Standard deviation: 2.04; Maximum value: 9; Minimum value: 1).

3.2.3 Independent variables

In addition to demographic information variables, according to research questions and models, the questionnaire measured eight independent variables, namely perceived usefulness, perceived ease of use, perceived value, perceived risk, self-recommendation motivation, face value, voice and social connection.

When designing the scale of independent variables, according to the previous scholars' research on technology acceptance model and the characteristics of voice social software, this study used the scale that has obtained professional support and passed the reliability and validity test, and made slight changes according to the research purpose and research problems. All variables were measured by Likert scale 7, and from 1 to 7, they represented: 1- very different, 2- disagree, 3- compare disagree, 4- generally agree, 5- compare agree, 6- agree and 7- strongly agree.

3.3 Data analysis method

In this study, IBM SPSS Statistics 23 is used for analysis, and the statistical method of ordinary multiple linear regression is used to calculate whether the predicted independent variable has an influence on on the dependent variable and how much. Whether the hypothesis is valid or not is indicated by the significant P value. If P is less than 0.05, the research hypothesis is valid, otherwise, it is overturned.

4. ANALYSIS

After the multiple linear regression of the model, we know that, first of all, the effect of independent variables on dependent variables in the whole model is significant, and it explains about 63.6% change of dependent variables, with adjusted R^2=0.636, F (8,178) = 41.637, P<0.001. Secondly, research hypothesis 3 and research hypothesis 8 believe that perceived value and social connection have a positive impact on the willingness to use voice social software. We find that perceived value (β=0.421, P<0.001) and social connection (β=0.213, P<0.05) do have a positive impact on the willingness to use voice social software, that is, the subjects who can get more social value and emotional value and their sense of belonging to their social environment. However, perceived ease of use, perceived usefulness, perceived risk, self-recommendation motivation, face value and voice have no significant influence on the willingness to use voice social software.

Table 1 Summary of insignificant variables

	β	p
Perceived usefulness	0.067	0.479
Perceptual ease of use	0.057	0.352
Perceived risk	-0.040	0.576
Self-recommendation motivation	0.067	0.274
appearance index	0.083	0.362
sound	0.050	0.502

In addition, we also calculated the correlation between population information variables as independent variables and willingness to use. The results are as follows.

Table 2 Correlation between population information variables and willingness to use

	T value, F value or Pearson correlation	significance
Gender (male =0, female =1)	0.026 (F=0.885 , p=0.348)	0.979
Grade (freshman =1, sophomore =9)	-0.069	0.349

Are you single (Yes =0, No =1)	-0.910 (F=0.246 , p=0.621)	0.346
Only child (yes =0, no =1)	1.082 (F=0.180 , p=0.672)	0.281
Whether parents divorced or died (Yes =0, No =1)	-0.065 (F=1.476 , p=0.226)	0.948
Monthly household income	-0.052	0.483
Personal living expenses per month	-0.071	0.339

As can be seen from Table 2, there is no significant difference in the willingness to use voice social software among the subjects with different gender, grade, emotional status, family composition, family, and personal economic statuses.

5. CONCLUSION

From the data, it can be concluded that the influence of perceived usefulness, perceived ease of use and perceived risk on the willingness to use voice social software is not significant. Therefore, it seems that voice social software, and Internet technology, may not be suitable for measuring by technology acceptance model, and the experimenter should pay more attention to the value embodiment of social apps. This finding can supplement the research dimension of technology acceptance model in the Internet age. More realistically, the designers and developers of modern social software can pay attention to the use-value of the products themselves, which is the goal of software development, to enhance the users' willingness to use and generate use behaviors, and to provide a technical basis for the innovation of social software.

The sample types of this study are relatively simple, mainly college students, whose social functions are incomplete, which may lead to insignificant data analysis results of some independent variables. Therefore, the experimental results are not universal, but significant among college students. It is possible that expanding the number of experimental samples will change the results of this experiment.

Follow-up research can also re-select some sample groups, such as the working class's willingness to use voice social software and the elderly people's willingness to use voice social software, so as to enrich the research content and find out the common factors that affect the willingness to use voice social software.

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