

# A Model on the Predictors of Adoption and use of the Internet

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**Abstract.** What are the factors influencing the adoption and use of the internet? How is the model? Taking Jinan university's students as the research sample (N = 302), this paper discussed what specific variables, including socio-economic status, weigh needs, perception usability, ease for use, personal statistic feature and so on, exactly affect the Internet adoption time, Internet use time and internet use related to study and work. Research found that socio-economic status positively influences the time of Internet adoption and use. The adoption time of the internet significantly influences the time of internet use. However, the adoption and use time of the internet don't significantly influence the internet use related to study and work, which is significantly affected by the college students' perception about the usability and ease of use of the internet.

**Keywords:** the adoption of the Internet; Internet use; innovation diffusion; uses and gratification; technology acceptance model.

## 1. Introduction

What are the predictors of the adoption and use of the internet? How is integrating into one model? Dutton, Rogers, and Jun framework explicitly underscores the causal links among diffusion, use, and social impact of home computing and thus integrates these processes into a unified framework<sup>[1]</sup>.

The Technology Acceptance Model (TAM) was developed to address a key problem surrounding the field of information technology. The studies primary objective was to assess why performance gains were often inhibited or obstructed by a user's unwillingness to accept new technology<sup>[2]</sup>. The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (PU) - This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". Perceived ease-of-use (PEOU) - Davis defined this as "the degree to which a person believes that using a particular system would be free from effort"

According to the theory above, this study attempt to figure out the following figure 1 which should be tested:

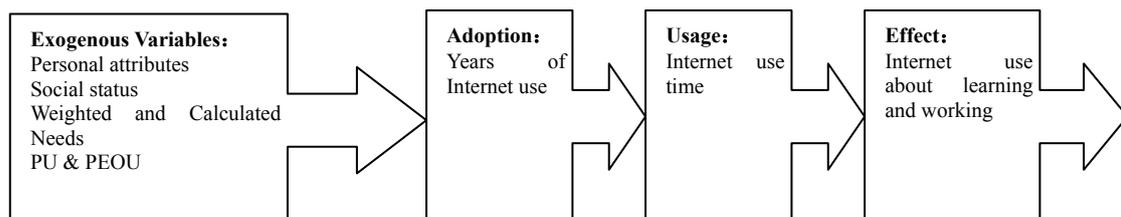


Figure 1. A model on the predictors of the adoption and use of the internet

According to figure 1, this study tries to answer the following questions and testing the following hypothesis: RQ1: How the variable of Personal attributes, Social status, Weighted and Calculated Needs, Perceived usefulness (PU), Perceived ease-of-use (PEOU) predict the Years of Internet use, Internet use time and Internet use about learning and working; Hypothesis 1: The more the years of Internet use are, the more Internet use time is; Hypothesis 2: The more the years of Internet use is, the more Internet use about learning and working is; Hypothesis 3: The more Internet use time is. The more Internet use about learning and working is.

## 2. Methodology

### 2.1. Sample

A research team collected survey data from Jinan universities in Guangzhou, China. The survey was administered during the May, 2010. A total of 335 respondents completed the survey and 302 are valid, the survey completion rate was 90.1%.

### 2.2. Dependent variable

Years of Internet use: Measurement question is that "How long are you online until now?" Years of Internet use is a continuous variable.

Internet use time, Measurement question is that "How much average time do you spend online per day?" Internet use time is a continuous variable.

Internet use about learning and working. According to the research needs, we are mainly to focus whether the conduct of Internet use is to obtain knowledge about learning or working

### 2.3. Independent variable

1. Social status: (1) parents' level of education. (2) Living expenses per months. (3) Birthplace. (4) Educational level.

2. Weighted and Calculated Needs. This study measures the variables of college students needs: know about the news. know about the information about personal living. know about the information about working, entertainment, express personal opinion and attitude, and improve personal relation.

3. Perceived usefulness (PU) and Perceived ease-of-use (PEOU). (1) The concept of Perceived usefulness should be regarded as the perception of the object which is helpful to the living. (2) The concept of Perceived ease-of-use is the attitude toward the particular system is easy to learn and use by users. 4, Personal attributes. (1) Gender. M = 1, female = 0. (2) Age (continuous variable)

## 3. Results

In this study, as the three dependent variables are all continuous variable, independent variable is category variables (dummy variables) or continuous variables, the use of multiple linear regression analysis of the three dependent variables respectively, table 1 is as following:

TABLE I. MULTIPLE LINEAR REGRESSION ANALYSIS OF THE THREE DEPENDENT VARIABLES

		Years of Internet use (model 1)		Internet use time per day (model 2)		Internet use about learning and working (model 3)	
		B	SE	B	SE	B	SE
constant		-4.249	2.072	0.510	2.500	12.326***	2.799
Personal attribute	Gender	-0.432	0.282	-0.089	0.339	-1.223**	0.380
	Age	0.31**	0.087	0.082	0.107	-0.048	0.120
Social status	Father education	0.263	0.354	-0.075	0.425	-0.676	0.476
	Mother education	0.142	0.398	-0.094	0.477	0.914	0.534
	living expenses per months	0.001***	0.000	0.001***	0.000	0.000	0.000

	Place of birth	1.306***	0.326	1.186***	0.401	-0.682	0.456
	Educational level	0.481	0.374	-1.257**	0.449	0.986	0.509
WCN	Weighted and Calculated Needs	-0.003	0.008	0.006	0.010	0.011	0.011
PU and PEOU	Perceived usefulness	-0.019	0.034	0.002	0.041	0.180***	0.046
	Perceived ease-of-use	0.124**	0.037	0.035	0.045	0.176**	0.050
Years of Internet use				0.142*	0.070	0.039	0.079
Internet use time per day						0.036	0.066
R SQUARE		0.269		0.278		0.256	
ADJUSTED R SQUARE		0.244		0.251		0.225	
N		302		302		302	
* p < .05; ** p < .01; *** p < .001.							

### 3.1. Firstly respondent to RQ1

Model 1 shows that the age variable, the living expenses per months, the Place of birth variable, Perceived ease-of-use are significant predictors to the years of Internet use, while the Betas of all independent variable are positively ( $B > 0$ ) Model 2 shows that the living expenses per months, the Place of birth, the educational level are significant predictors to Internet use time per day, while the Betas of living expenses per months, the Place of birth are positively ( $B > 0$ ) .Model 3 show that gender, place of birth, education level, Internet's perception of the usefulness and usability are significant predictors to Internet use about learning and working. The Beta of gender is negatively ( $B < 0$ ) ,

### 3.2. Secondly respondent to hypothesis

According to the model 2, Years of Internet use has significant influence ( $B = 0.142$ ,  $p < .05$ ) on Internet use time per day, and the regression coefficients are positive, therefore, hypothesis 1 is tested, While according to the model 3, the variables of Years of Internet use, Internet use time per day had no significant influence on Internet use about learning and working. Therefore hypothesis 2 and hypothesis 3 are not tested

### 3.3. Thirdly to propose a model on the predictors of the adoption and use of the internet:

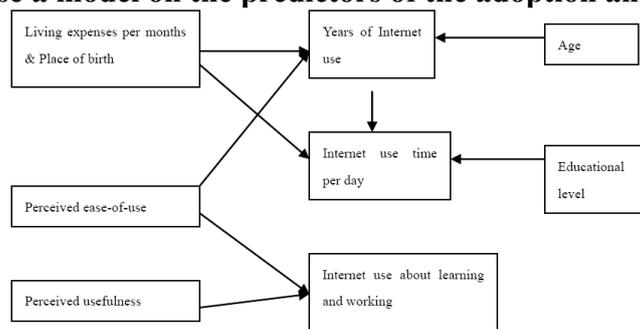


Figure 2. A model on the predictors of the adoption and use of the internet after adjusted

Figure 2 model shows that, in general, social economic status variables have significant influence on the years of Internet use, while the years of Internet use is significant predictor to Internet use time per day. So the variable of social economic status, the years of Internet use, Internet use time per day compose a chain predictors model.

However, the Internet use about learning and working does not correlate with Years of Internet use and Internet use time per day, while correlate with the variable of Internet's perception of the usefulness and usability, which means that if raising the Internet use about learning and working, we should raise the cognition of internet among college and minus the difficulty of internet using by college students.

## 4. Conclusion and Discussion

This study proposes a variable of Weighted and Calculated Needs but has no significant influence on the three dependent variables, which are not consistent with previous researches<sup>[3]</sup>.why? In order to discuss this problem, we divide the comprehensive value of Weighted and Calculated Needs Among these values, the opinion expression demand value is highest. This indicates among the university student group, the most important is opinion expression but not for working and learning information. So when the dependent variable is Internet use about learning and working, the variable of Weighted and Calculated Needs have no influence. This research also has some limitation, such as the sample is not random selected and not enough. Therefore the sample can test the hypothesis but cannot deduct to the whole. Future research should adopt random sample and gain more sample for the reliability and credibility.

## 5. References

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