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Research on factors affecting the consumers to use pirated software based on TPB**Xudong SHENG, Lun HOU, Liangqiang LI****The School of Management and Economics of UESTC, Chengdu, China.****E-mail: shengxudong2005@126.com****Abstract**

This paper takes consumers in China as samples to research out the influential factors on their behavior of using pirated software. The result indicates that The TPB model is still popular in our country; value consciousness, novelty seeking and collectivism play important roles in influencing consumer attitudes toward software piracy. This research, which provides an in-depth understanding on Chinese consumers, can be used in designing an effective prevention strategy in China.

Key words: Software piracy; TPB model; Chinese situation

1 Introduction

Piracy is a familiar word for the general netizens and computer users. The Business Software Alliance (BSA) estimates that worldwide piracy rate was 41% generally, but our country's was 80% in 2008^[1]. It is so serious that we need to deal with it right now.

Understanding the influencing factors, especially nonfinancial factors are one effective way to fight against piracy. At present, most of pirated software research has been conducted in the West, little is known about Asian consumers^[2].

Although software piracy in China is very serious, the empirical study about Chinese consumer actually is insufficient^[3]. So this paper takes consumers in China as samples to research the influential factors on their behaviors of using pirated software through path analysis.

2 Literature Review

TRA and TPB models are two popular models to

explain the behavior of piracy. The TPB model was proposed by Icek Ajzen as an extension of TRA. This theory hypothesizes intention is an important influencer in individual behavior. The intention changes by three factors (attitude toward the behavior, subjective norm and perceived behavioral control).

Using TRA model, Woolley and Eining^[4] found that attitude and subjective norm have a positive effect on consumer intention toward software piracy. They also had concluded that students understanding and knowledge of copyright laws have been much better, but this knowledge has not influenced software piracy rates.

Cronan and Al-Rafee^[5] used the TPB model to determine factors that influence digital piracy. They concluded that the attitude, the behavior control, the past pirated the behavior and the morality are important in influencing consumer intention toward software piracy.

3 Model and hypotheses

To understand the factors which influence software piracy, we use the TPB model to predict the software piracy. This model represents the theoretical model for predicting software piracy intentions and behavior. The research model as shown in Figure 1-1. In the next section, we will provide a description of the relevant factors in the model.

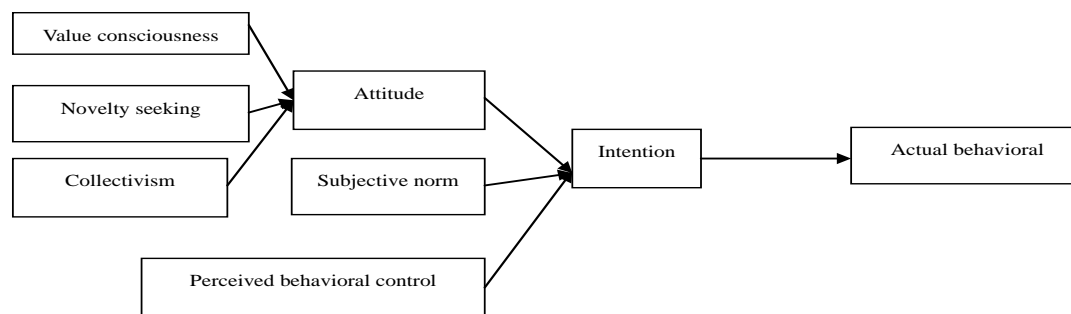


Figure 1-1 A model of this research

3.1 Intention

TRA and TPB models indicate that the intention influences the actual behavior. The intention has been long acknowledged as the most important construct influencing actual behavioral [6]. Many researches pointed out when people use the pirated software, individuals' intention to use pirated software has a positive effect on the behavior of software piracy [7][8].

H1: Individuals' intention to pirate software has a positive effect on the actual behavior.

3.2 Attitude

Based on the TPB theory, the attitude is considered to be highly correlated with one's intention. Trafimow and Finlay [9] discovered that the attitude was the best forecast factor of intention in twenty nine out of thirty studies. Many works indicated that consumer's attitude toward software piracy leads to their purchase intention [3][10][11].

H2: consumer attitude toward software piracy leads to their purchase intention.

3.3 Subjective Norm

Subjective norm is a social factor referring to the perceived social pressure to perform or not to perform a given behavior [12]. Obviously, when customers think they should use the pirated software, his intention toward piracy is bigger than others [10][11][13].

H3: the subjective norm will directly influence the intention of people pirated software.

3.4 Perceived Behavioral Control

Comparing with the TRA theory, the TPB model

introduced the variable of perceived behavioral control, considered that perceived behavioral control directly influence the intention. Limayem [13] defined facilitating conditions as those factors in an individual's environment that facilitate the act of pirating software. Many scholars found that perceived behavioral control has a positive effect on intention toward software piracy [13][14].

H4: perceived behavioral control has a positive effect on intention toward software piracy.

3.5 Collectivism

Lai and Zaichkow [15] sky pointed out that the reason why pirates is popular in Asia is the Oriental and westerner's viewpoint is different. An important characteristic of software is that it can very easy to make the copy, thus they share mutually. This created the proportion of pirated software stay at a high level for a long time in our country. The numerous researches pointed out that collectivism has the close relationship with the attitude toward pirated software [3][16].

H5: collectivism has a positive effect on consumer attitudes toward software piracy.

3.6 Novelty Seeking

Essentially, the human is one kind of pursue novel and stimulation animal. Cheng [17] discovered that "wants to attempt the software" is important attribute to use pirates. Wang [3] also found novelty seeking has very tremendous influence to the attitude of people pirated software.

H6: novelty seeking has a positive effect on consumer attitudes toward software piracy.

3.7 Value Consciousness

Bloch et al^[18] consider that the reason why people use counterfeit is that counterfeiting a distinct price advantage over genuine product. Because the present piracy technology is mature, the consumer can spend very little or no money to obtain the same service likes genuine software. Many scholars thought that consumers who are value-conscious may have positive attitude towards software piracy^{[3][18]}.

H7: consumers who are value-conscious may have positive attitude towards software piracy.

4 Method

4.1 Sample choice and data collection

A survey was conducted among consumers in Chengdu. We provide questionnaire to collect the data though network and field combination. The network questionnaires were carried out in the wozuo.com website. Field questionnaires were distributed randomly in some university in Chengdu. A total of 220 paper questionnaires were distributed, 197 responses were received; we collected 80 questionnaires in the website. There are 261 valid questionnaires total. The demographic characteristics of respondents shown in Table 4-1

Table4-1 Demographic characteristics of respondents

Category		Total	Percentage (%)
Gender	Male	157	60.2
	Female	104	39.8
Age group	0-19	61	23.4
	20-29	142	54.4
	30-39	34	13
	40-49	20	7.7
	>50	4	1.5
Job occupation	Soldier	1	0.4
	Civil servant	6	2.3
	Business management personnel	29	11.1
	Company officer	19	7.3
	Student	192	73.6

Finance, negotiable securities, safe practitioner	6	2.3
Others	3	1.1

4.2 Reliability and validity

The test of construct reliability (see Table 4-2) shows that these values are all higher than 0.7, which demonstrates sound reliability of measures in these constructs.

We also used the Average Variance Extracted (AVE), to assess the discriminant validity. The cross-loadings of cross-variable are less than 0.5 (see Table 4-3), which shows that The discriminant validity of the measurement model was verified; and Convergent validity is checked by examining the significance of item loadings (are all greater than 0.5) on their corresponding factor.

Table 4-2. Reliability of constructs

Factor	Items	Cronbach's a
Collectivism	3	0.834
Value consciousness	4	0.916
Novelty seeking	3	0.875
Attitude	4	0.884
Intention	4	0.875
Subjective norm	3	0.936
Perceived behavioral control	3	0.921
Actual behavioral	3	0.879

Table 4-3 Factor analysis of attitude measures

Factor	Factor loadings				
	1	2	3	4	5
Collectivism1	.388	.154	.507	.107	.536
Collectivism 2	.090	.208	.249	.176	.825
Collectivism 3	.263	.129	.676	.156	.598
Value	.187	.189	.749	.005	.405

consciousness1					
Value consciousness2	.201	.111	.784	.150	.186
Value consciousness3	.075	.138	.854	.234	-.006
Value consciousness4	.225	.260	.763	.280	-.046
Novelty seeking 1	.408	.194	.213	.576	.168
Novelty seeking 2	.369	.165	.338	.722	.062
Novelty seeking 3	.192	.294	.187	.818	.173
Attitude 1	.286	.504	.179	.446	.214
Attitude 2	.211	.532	.330	.538	-.093
Attitude 3	.283	.632	.075	.388	.033
Attitude 4	.169	.859	.153	.109	.116
Intention 1	.214	.689	.208	.383	.144
Intention 2	.329	.540	.472	.115	.088
intention 3	.519	.600	.197	.155	.197
Intention 4	.488	.642	.202	.077	.186
Subjective norm 1	.737	.386	.170	.108	.200
Subjective norm 2	.750	.465	.064	.106	.191
Subjective norm 3	.551	.571	.104	.163	.244
Perceived behavioral control 1	.795	.203	.248	.309	-.131
Perceived behavioral control 2	.787	.128	.301	.281	.034
Perceived behavioral control 3	.697	.259	.320	.284	.131
Actual behavioral 1	.747	.310	.270	.185	.125
Actual behavioral 2	.631	.440	.316	.179	.071
Actual behavioral 3	.554	.544	.135	.321	.050

5 Statistical results

SPSS software was used for stepwise regression analysis.

5.1 The consumer to pirates software's actual behavior

We found the intention of pirated software was found to be an important influencer in consumer's actual behavior of pirated software (see Table 5-1). Hypothesis 1 is supported.

Table 5-1 results on factors influencing actual behavior

	B-values	T-value	Significance level
intention	0.763	18.983	0.000

5.2 The consumer to pirates software's intention

When assessing the variables influencing behavioral intentions, it was found that attitude (p=0.000), subjective norm (p=0.000) and perceived behavioral control (p=0.002) are found important in influencing consumer intention toward software piracy (see Table 5-2),so H2,H3 and H4 are supported.

Table 5-2 results on factors influencing intention

	B-values	T-value	Significance level
attitude	0.549	10.934	0.000
Subjective norm	0.219	4.381	0.000
Perceived behavioral control	0.163	3.172	0.002

5.3 The consumer to pirates software's attitude

Considering the antecedents of attitudes significant paths were found for Value consciousness (p=0.000), moral consciousness (p=0.000) and collectivism (p=0.000) are found important in influencing consumer attitudes toward software piracy(see Table 5-3), H5,H6 and H7 are supported.

Table 5-3 results on factors influencing attitude

	B-values	T-value	Significance
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			level
collectivism	0.319	4.992	0.000
Value			
consciousness	0.272	4.354	0.000
novelty			
seeking	0.240	4.813	0.000

6 Conclusion and suggestion

In summary, seven hypothesises are mentioned in this article, and the TPB theory is still suitable under the Chinese situation.

The subjective norm is found to affect the intention (H3). This implies that we may carry on the persuasive education through the teachers, the family members, the friends and other interpersonal ways.

Perceived behavioral control is also found to affect intention (H4). Rahim et al ^[19] declared that the practice of software piracy could decrease among employees, faculty members, and students, if the legal copy is not convenient to obtain. Software company should expand legal copy marketing channel's multiplicity and enhance the legal copy software's procurability.

Collectivism is found to affect the attitude (H5). People shares some material objects (e.g. cutting tool and so on) not to violate the law, but many people may not realize that sharing pirated software is illegal. Therefore, the government may provide related training and the propaganda together with the software company, and build an environment which emphasis on software protection.

Novelty seeking is found to affect the attitude(H6). At least, for young students, who were samples in our research, novelty seeking is an important factor in using pirated software. This finding supported the conclusion of Wang's study that software piracy sometimes is just a way that consumers try out new software.

Value consciousness is found to affect the attitude (H7). The software company on one hand must improve own product quality and the degree of satisfaction; on the other hand they should cut the high software price. The software company also should tell the consumers why the legal copy software is so expensive. At the same time, the

software company should also change the sales way, for example Microsoft sighs namely rents the way with (Pay-as-you-go) is also feasible.

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