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Analysis of the Factor Affected Chinese Audience Choice Behavior between Traditional TV and Network Video in PLS-SEM

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Abstract

Since the technical barriers of media industry were resolved, audience has become the determinant that impacted the development of media industry who would choose different media products depending on their perception. In order to find the key factors that impact Chinese audience's choice behavior and provide practical guide for media industry to improve its service, the paper studies influence of audience's perception on their choice between traditional TV and network video by building PLS-SEM. And then, partners and age which were proved to be the most important demographic characteristics affecting audience choice of video terminal in author's previous studies are selected as moderator variables to explore how demographic characteristics influence the different paths of assumptions. The statistical results indicate that relative performance expectancy, relative effect expectancy, relative social influence and habit have significant positive effects on choice intention, relative time-related risk has no significantly negative effects on choice intention, relative physical risk has significant negative impacts on choice intention, habit and choice intention have significant positive effects on choice behavior. In the different paths of assumptions, partners and age exist significant differences.

Keywords

1. Introduction

Nowadays, Chinese society is becoming an information based society, the mass media is affecting people's life

in every aspect. In the traditional sense, the mass media refers to the four media: newspapers, magazines, radio and traditional TV. And the traditional TV is the most influential mass media which has the important influence on the life of the common people. It is watched almost across all age groups and all occupation groups in China.

However, in recent years, with the popularization of computer, smart phone as well as the accelerate development of network technology, network video is rapidly integrated into the daily life of the Chinese masses, leading to the change of the traditional Chinese viewing behavior. The traditional Chinese viewing behavior which contains one-to-all spread and passive receiving features is suffering a heavy challenge from network video, which provides a fully new viewing model to the pubic with the diversity, informative, easy to store, interactive and controllability features.

Network video refers to the network video service which provided by video service providers. In China, the network video can be divided into four kinds: IPTV (such as PPS and PPLive), video portal (such as Sina video and Tencent video), video download (such as Thunder download, eMule download), video sharing (such as Youku and Potatoes). Since 2008, the size of the network video industry has been a growing trend. As of December 2014, the size of the network video users reached 433 million, an increase of 4.78 million over last year. However, as of October 2014, there were 179.253 million families which had cable digital TV. It suggests that the traditional television and network video may be not a perfect substitute for relationship.

2. Literature Review

The changes in the internal structure of the Chinese video industry attract the attention of the academia, one part of the researchers analyze and forecast the future trend of video industry from the industrial point of view, but most of them agree that although the traditional television was impacted by the network video, the relationship of them is a mixed development in the future instead of completely alternative. Haiting Yu argues that the emergence of internet television has a marked impact on the traditional TV, but it will not replace the traditional TV and become the terminator [1]. Shaohua Yi thinks that it is the necessity of historical advance, technological development and the market rules' evolution for TV to become networked. In order to acclimatizing networking environment much better, the pressing problem in front of leader is how to develop a suitable strategy and tactics [2]. Xingxiao Lai argues that although traditional TV is facing new challenge brought by the network video, TV media still have their own independent audience. With intersection and independent, TV and network video jointly occupy the video market [3]. Some researchers hold that with the rise of the Internet TV, smart phones, social TV and other television terminals, great changes have taken place in the audience market structure, viewing habits and TV industry, which implies both opportunities and challenges for the traditional TV [4].

Some scholars explore the factors that influence the usage of network video mainly focusing on audience perception field. Yi Jiang considers the internet TV features mainly reflected in the effect expectancy of information access, personalized information services and interactive information dissemination, then analyzes the internet television audience viewing behavior and psychological characteristics [5]. Xueqin Fang takes the technology acceptance model as the theoretical basis, and finds that satisfaction has significant impact on behavior intention and usage, behavior intention has a significant impact on usage, perceived performance expectancy, perceived effect expectancy, perceived entertainment, relative social influence, trade-off demand and perceived risk have a marked effect on satisfaction [6]. Meeyoung Cha *et al.* find that the transformation of TV programs is associated with its rating by analysing the date from the world's largest IPTV system. When audience watches popular programs usually rarely change channels, in addition more than 60% of the audience will change the channel when they watch shows, and it has important influence on the experience of user [7]. Delin Hou *et al.* explore the relationship between satisfaction of video service and use's behavior through structural equation model. The research results show that the site quality, information quality and service quality have significant impact on video user satisfaction, then the satisfaction has a significant effect on use intention [8]. Qian Xiao decomposes the user behavior mode into three parts which include structure factor, choice of factor and the process factor based on the innovation diffusion theory. The results show that the content of programs is the most important influence factor affecting satisfaction of the audience, and demographic characteristics affect the user's behavior [9].

Some researchers think that culture have impacts on the usage of traditional TV. Danlin Peng *et al.* find that culture has influence on TV news ratings by surveys [10]. Tongdao Zhang *et al.* (2003) find that traditional TV sneaked into the Chinese audience's life and has become common household items [11]. Ming Ying thinks that

the traditional culture and subculture are the intrinsic drive of the choice among programs [12]. Xingxiao Lai thinks that because there is only one traditional TV for Chinese family, most TV audience have to watch the TV program that they don't want to watch. He also finds that most Chinese agree with that TV can match most people's needs but network video matches meet the needs of individuals. We consider that the result is very important, because the young people have more individual's need comparing with the old people. And China also has a special culture, which may cause a different viewing mode [3]. Xuewei Zhai thinks that confucianism plays an important role in Chinese interpersonal relationships. Confucianism emphasizes the old people to be treated well, thus it leads to a strength power for the old people [13]. Tongdao Zhang *et al*. think that the remote control is a symbol of power in Chinese families. Thus the old people may have more power to choose the program they prefer mostly when family watches TV program [11]. In our previous study, we find that Chinese audience prefer using TV to watch programs with intimate partners, however they prefer using network video to watch programs when alone; The Chinese young people at 18 - 25 year old are more willing to choose the network video for watching, while the old people whose age are over 60 are more willing to choose the traditional TV.

Considering the traditional TV and network video are both technology product, we can refer to Unified Theory of Acceptance and Use of Technology to find the factor that influence Chinese audience choice behavior. Venkatesh *et al*. put forward Unified Theory of Acceptance and Use of Technology (UTAUT) which is designed to unify the multiple existing theories about how users accept technology. UTAUT explains usage intention to adopt technology product by proposing four predictive determinants: performance expectancy, effort expectancy, social influence and facilitating conditions. Four key moderators is identified which believed to affect the relationship between key determinants and usage intention: gender, age, voluntariness and experience [14]. However, some researcher think that UTAUT can explain user's information technology well only at the beginning of the user information technology acceptance, can not effectively explain the sustained usage. Gefen D thinks that habit may explain sustained usage behavior more effectively than intention does [15]. Yu Chen *et al*. find that habit has a significant influence on the sustained usage of post-adoption users in the information system [16].

We think that audience choice behavior is not only affected by positive utility (such as performance expectancy, effort expectancy etc.) but also affected by negative utility (such as perceived risk). Bauer firstly put forward perceived risk. He believes that the consumer is also facing uncertainty in the process of consumption, so consumer behavior is a risk commitment [11]. Stone & Gronhaugsummed divide the perceived risk into six dimensions: performance, physical, financial, psychological, social and time-related risk [17].

In a word, the previous studies about new or old media mainly focused on the industrial angle or a single video terminal usage, involving less in the video terminal selection field. But in reality, the audience is not only facing a choice whether or not to use a given terminal, but also confronted with a selection between traditional TV and network video which they want to use. Based on the UTAUT and Perceived Risk theory, we explore the factors that influence audience choice behavior by building PLS-SEM, hoping to support practical guide to media industry.

3. Questionnaire Design and Development of the Hypotheses

3.1. Questionnaire Design

The questionnaire can be divided into three parts: the first part is the information of basic demographic characteristics (such as sex and age); the second part is the information of the video usage (such as viewing place and viewing partners); the third part is the information of audience perceptions (such as relative effort expectancy and relative performance expectancy). The variables of the first part and second part are attribute variables and the variables of the third part are continuous variables.

The third variables are used in relative value, referred Likert seven point scale. Regarding relative effect expectancy as an example, 1 point indicates that the operation of traditional television is entirely easier than the operation of network video; 2 point indicates that the operation of traditional television is obviously easier than the operation of network video; 3 point indicates that the operation of traditional television is easier than the operation of network video; 4 point represents there is no difference between the operation complexity of tradition TV and the operation complexity of internet video; 5 point indicates that the operation of network video is easier than the operation of traditional television; 6 point indicates that the operation of network video is obviously easier than the operation of traditional television; 7 point indicates that the operation of network video is entirely

easier than the operation of traditional television. Relative effect expectancy, relative performance expectancy, relative social influence, choice intention, choice behavior questionnaires are referred to Agarwal R [18], Venkatesh [14], Xueqin Fang [6]. Time risk and physical risk questionnaires are referred to Stone R N *et al.* [17], Almousa M [19], Dahai Dong *et al.* [20]. Habit questionnaire designed by self-report measurement, mainly was referred to Verplanken B [21], Mingtao Zhu [22].

3.2. Development of the Hypotheses

we summary that audience choice behavior are effected by relative performance expectancy, relative effect expectancy, relative social influence, relative physical risk, relative time-related risk, associating with habit which reflects the influence of audience past behavior on their current decision.

Effort expectancy is similar to the perceived ease of use which was defined as the degree which a person believes that using a system would be free of effort [23] [24]. In the paper, relative effort expectancy reflects user perception of how difficult it is to use traditional TV (or network video) comparing with network video (or traditional TV). When audience feels that the usage of traditional TV (or network video) is easier than the one of network video (or traditional TV), they will have stronger desire to use traditional TV (or network video) for watching programs than network video (or traditional TV). We hypothesize:

H1: Relative effort expectancy positively influences audience choice intention.

Performance expectancy is similar to perceived usefulness which was defined as the degree which a person believes that using a particular system would enhance his or her job performance [23] [24]. In the paper, relative performance expectancy reflects user perception of utility improvement by using traditional TV (or network video) comparing with network video (or traditional TV). The more utility audience can gets from a terminal, the stronger intention they have to use the terminal. We hypothesize:

H2: Relative performance expectancy positively influences audience choice intention.

Physical risk refers to the possibility of bodily harm to the consumer [17]. In the paper, relative physical risk is defined as the degree which audience believes that using a particular video terminal would increase the physical risk comparing with the other one. Generally, the higher physical risk the video terminal products, the less usage intention the audience has. We hypothesize:

H3: Relative time-related risk negatively influences audience choice intention.

Time-related risk suggests that the product purchased may deteriorate over time [17]. In the paper, relative time-related risk is defined as the degree which audience believes that using a particular video terminal would increase the time-related risk comparing with the other one. Generally, The higher time-related risk the video terminal products, the less usage intention the audience has. We hypothesize:

H4: Relative physical risk negatively influences audience choice intention.

Social influence is similar to subjective norm which was defined as a person's perception that most people who are important to him think he should or should not perform the behavior in question [24] [25]. In the paper, social influence is defined as a person's perception that most people who are important to him think he should use traditional TV or network video. Generally, a person will have a stronger intention to use a particular video terminal when people who are important to him suggest that he should use the one. We hypothesize:

H5: Relative social influence positively influences audience choice intention.

Habit reflects automatic behavior tendencies developed during the past history of the individual, such that particular stimuli elicit the behavior even when the individual does not instruct himself or herself to perform it, and habit has influence on intention and actual usage behavior [26]. In the paper, habit is defined as the automatic behavior of using some particular video terminal during his past history of the individual. It follows that as a behavior becomes routinized, it comes under the influence of habits, but before it is routinized, it will be under the influence of behavioral intentions [27]. In the Chinese information system, habit has a significant influence on the sustained usage of post-adoption users [16]. We hypothesize:

H6: Habit positively influences audience choice intention.

H7: Habit positively influences audience choice behavior.

From the UTAUT model [23], we can conclude that behavior intention will have a significant positive influence on technology usage. In the paper, we hypothesize:

H8: Audience choice intention positively influences audience choice behavior.

As shown in **Figure 1**, our research model closely resembles UTAUT.
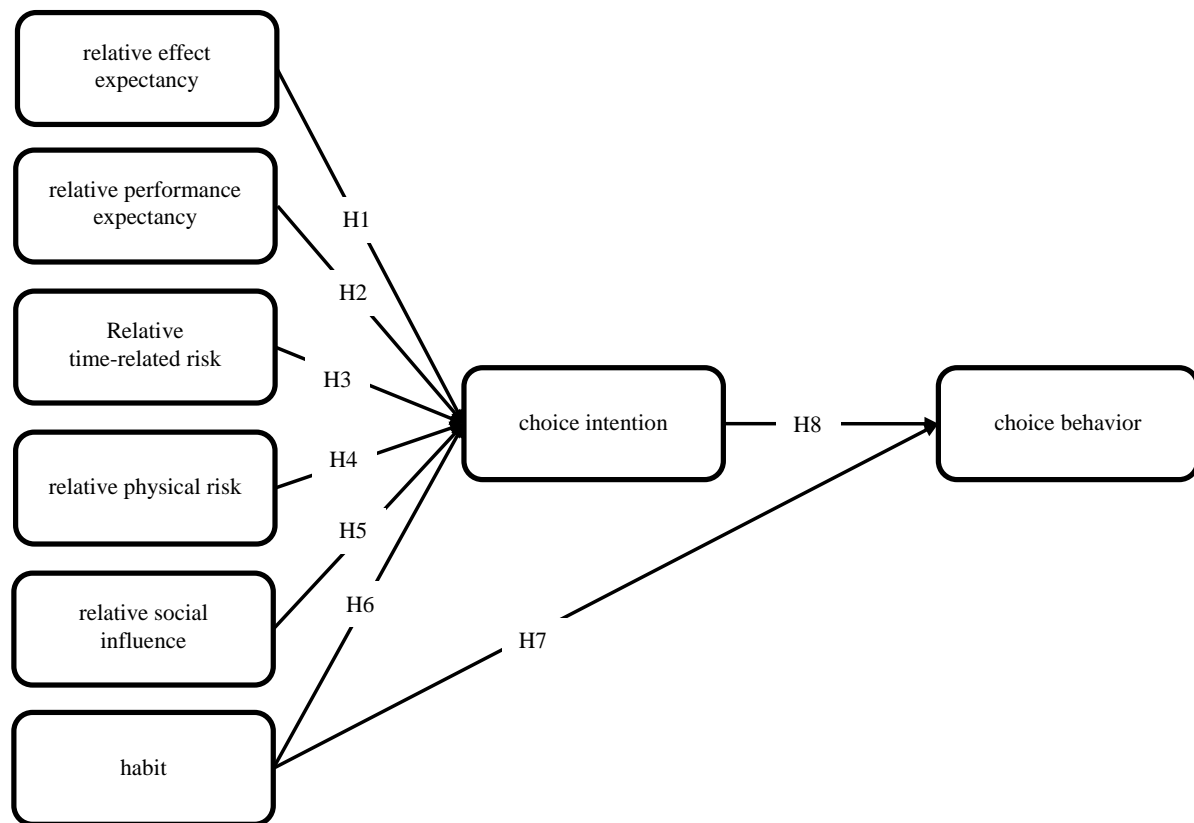
Figure 1. Research mode.

4. Research Methodology

Partial least square equation model is a non-parametric statistic method which studies the correlation between variables. It doesn't need strict data assumption and has a good adaptability of non-normal and Small sample data. As follow:

$$\eta = B\eta + \Gamma\xi + \zeta \tag{1}$$

η is endogenous latent variable vectors and ξ is exogenous variable vectors. B is an endogenous latent variable coefficient matrix and Γ is an exogenous latent variable coefficient matrix. ζ is a residual vector.

In the paper, the research model is divided into two parts: the first part is the outer model where the relationships between observed variables and latent variables are established and the second one is the inner model which describes the relationship between latent variables. As follow:

$$Y = \Lambda_y \eta + \varepsilon \tag{2}$$

$$X = \Lambda_x \eta + \delta \tag{3}$$

Y is observed variable vectors of inner latent variables and X is observed variable vectors of outer latent variables. Λ_y and Λ_x are vectors of unknown loadings. ε and δ are vectors of errors of measurement.

The paper adopts the software tool R language to build structure equation model. R is a free software environment for statistical computing and graphics which has a large number of statistical software packages that can be done in a variety of statistical analysis. In this paper, plspm package is used to build our model.

5. Empirical Research

5.1. Data Collecting

Data came from the questionnaire surveys which divided into online surveys and field surveys. By online survey,

we collected 321 questionnaires and 635 valid questionnaires were collected by field surveys. Through normality test, we find that the sample data are not normally distributed, thus the paper adopt partial least squares to build structural equation modeling.

5.2. Reliability and Validity Text

We use C. alpha as indicator of reliability and DG. rho as indicator of reliability. The validity can be divided into convergent validity and discriminant validity. The first eigenvalue, the second eigenvalue and AVE value are treated as indicator of convergent validity. If the square root AVE are not less than the correlations among latent constructs, it indicates good discriminant validity [28]. AVE value must be lager than 0.5 and the square root must be not less than the correlations among latent constructs [29]. The first eigenvalue should lager than 1, the second eigenvalue should less than 1 and both of C. alpha and DG. rho should lager than 0.7 [30]. As we can see from **Table 1**, all the C. alpha are above 0.8 and all the DG.rho are above 0.9, indicating good reliability. It presents good convergent validity as AVE value above 0.7, the first eigenvalue above 2 and the second eigenvalue lower than 0.5 (see **Table 1**).

As we can see form **Table 2**, all the square root of the AVE value are not less than the correlations among latent constructs, presenting good discriminant validity.

5.3. PLS-SEM Analysis and Testing the Hypotheses

Partial least square structural equation model test mainly includes the estimated coefficient of path and R^2 values. The estimated coefficient of path stand for the influence among latent constructs and R^2 value presents the

Table 1. Reliability and validity.

Latent variable	C. alpha	DG. rho	eig. 1st	eig. 2nd	AVE
Relative effect expectancy	0.917	0.942	3.21	0.372	0.801
Relative performance expectancy	0.894	0.934	2.48	0.309	0.759
Relative time-related risk	0.844	0.906	2.29	0.406	0.763
Relative physical risk	0.845	0.906	2.29	0.387	0.780
Relative social influence	0.859	0.914	2.34	0.351	0.844
Habit	0.908	0.942	2.54	0.298	0.825
Choice intention	0.905	0.941	2.52	0.292	0.840
Choice behavior	0.935	0.954	3.36	0.416	0.838

Table 2. Correlations matrix among latent constructs.

	Relative effect expectancy	Relative performance expectancy	Relative time-related risk	Relative physical risk	Relative social influence	habit	Choice intention	Choice behavior
Relative effect expectancy	0.895							
Relative performance expectancy	0.713	0.871						
Relative time-related risk	−0.298	−0.320	0.873					
Relative physical risk	−0.606	−0.641	0.454	0.883				
Relative social influence	0.615	0.599	−0.090	−0.456	0.919			
Habit	0.724	0.713	−0.307	−0.690	0.591	0.908		
Choice intention	0.790	0.814	−0.341	−0.761	0.709	0.822	0.917	
Choice behavior	0.715	0.731	−0.310	−0.663	0.597	0.852	0.837	0.915

Note: The bold diagonal values are the square root of AVE of each construct. Off-diagonal values are the correlations between constructs.

degree explanation of exogenous latent variables on endogenous latent variables and also reflects the prediction ability of the model in a certain extent. Chin [31] thought that there are substantial relations among different latent constructs if the R^2 value is above 0.67. The conclusion of the paper is shown at **Table 3** which depicts the summary of standardized coefficient estimate results and corresponding significance (p-values), standard errors (SE), and the t-values associated with each structural path.

As seen, the final PLS-SEM results suggest that only hypotheses H5 with a level of p being more than 0.05 with weak path coefficient indicating that relative time-related risk don't have statistically significant influence on choice intention. Relative performance expectancy, relative effect expectancy, relative social influence and habit have significant positive effects on choice intention, relative time-related risk has no significantly effects on choice intention, relative physical risk has significant negative impacts on choice intention, habit and choice intention have significant positive effects on choice behavior. Based on the results, we can see that habit are the most influencing factors with the highest positive correlations. The main reason that relative time-related risk don't have statistically significant influence on choice intention is that Chinese audience often watch entertainment programs which do cost lots of time, thus leading audience have a low sensitivity of time flying (**Figure 2**).

6. Group Analysis

In order to analysis how demographic characteristics affect the different paths of assumptions, we select partners and age as moderator variables which are the most important demographic characteristics' factors that influence Chinese audience choice in the author's previous studies. The previous studies show that Chinese audience prefer using TV to watch programs with intimate partners, however they prefer using network video to watch programs when alone; The Chinese young people at 18 - 25 year old are more willing to choose the network video for watching, while the old people whose age are over 60 are more willing to choose the traditional TV. Thus, the partners group is divided into two groups: the one is audience who watch programs with their intimate partners (A group) and the another one is audience who watch programs alone (B group). The age group is divided into two groups: the one is audience whose age is 18 - 25 (a group) and the another one is audience whose age is above 60 (b group).

6.1. The Group Analysis of Partner Group

As we can see from **Table 4**, in A group, relative effect expectancy have no significant positive effects on choice intention; relative time-related risk have no significant negative effects on choice intention; relative performance expectancy, relative social influence and habit have significant positive effects on choice intention; relative physical risk has significant negative impacts on choice intention; habit and choice intention have significant positive effects on choice behavior. In B group, relative performance expectancy, relative effect expectancy, relative social influence and habit have significant positive effects on choice intention; relative time-related risk has no significantly effects on choice intention; habit and choice intention have significant positive effects on choice behavior.

Table 3. Path coefficient estimates of the PLS-SEM.

| Path	Standardized coefficient estimate	Standard errors	t-Value	Significance (p)	R^2 value
H1: relative effect expectancy → choice intention	1.70e−01	0.0445	3.81e+00	1.86e−04	
H2: relative performance expectancy → choice intention	2.43e−01	0.0445	5.47e+00	1.37e−07	
H3: relative time-related risk → choice intention	−1.36e−02	0.0310	−4.38e−01	6.62e−01	0.859
H4: relative physical → choice intention	−2.40e−01	0.0415	−5.78e+00	2.90e−08	
H5: relative social influence → choice intention	2.12e−01	0.0370	5.73e+00	3.75e−08	
H6: habit → choice intention	2.31e−01	0.0466	4.94e+00	1.65e−06	
H7: habit → choice behavior	5.04e−01	0.0583	8.65e+00	1.80e−15	0.783
H8: choice intention → choice behavior	4.23e−01	0.0583	7.26e+00	8.92e−12	
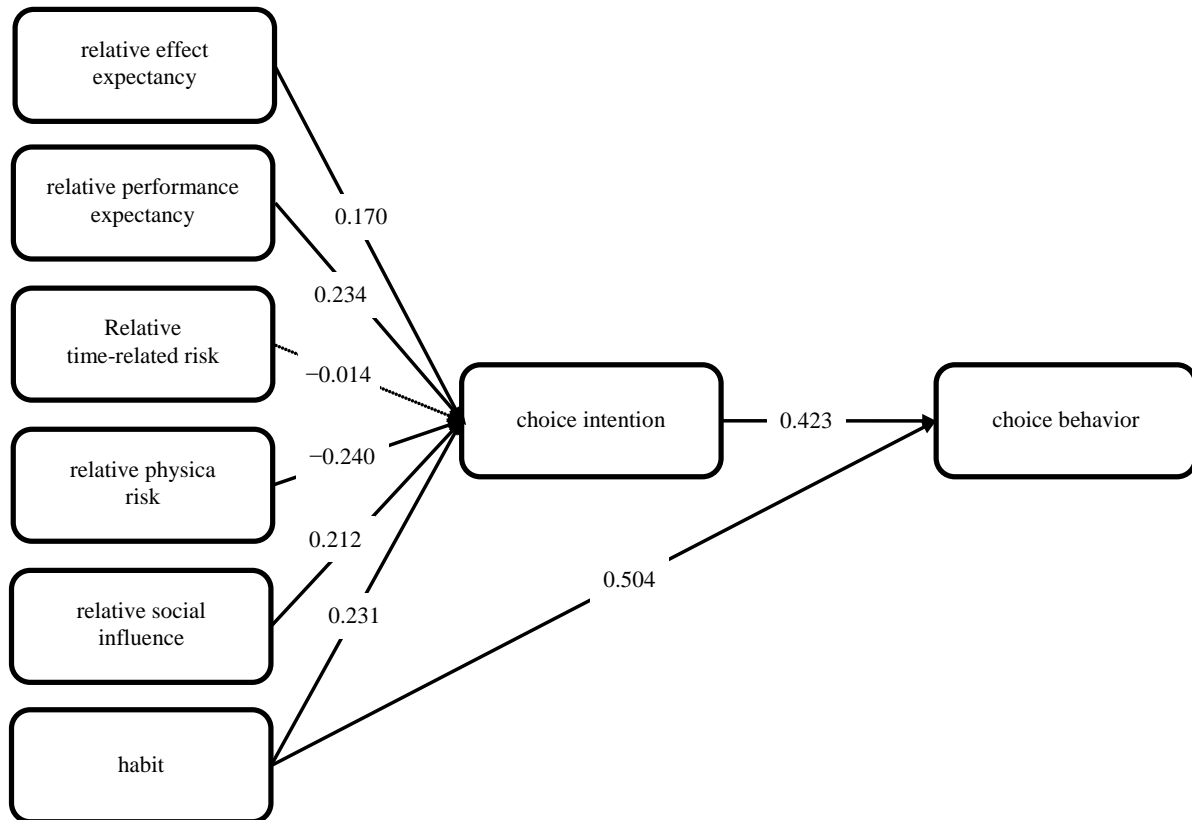
Figure 2. Result (Research model).

Table 4. Summary of findings.

Paths	A group	B group	Absolute difference	T-value	Significance (p)	Explanation
H1: relative effect expectancy → choice intention	**5.62e−02**	**1.87e−01*****	0.1308	2.1834	0.0147	Effect stronger for B group
H2: relative performance expectancy → choice intention	**1.40e−01*****	**2.88e−01*****	0.1487	2.9721	0.0015	Effect stronger for B group
H3: relative time-related risk → choice intention	2.57e−02	−2.33e−04	0.0259	0.7943	0.2136	none
H4: relative physical risk → choice intention	**−1.46e−01*****	**−3.70e−01*****	0.2241	3.6804	0.0001	Effect stronger for B group
H5: relative social influence → choice intention	**3.92e−01*****	**1.69e−01*****	0.2229	4.1101	0.0000	Effect stronger for A group
H6: habit → choice intention	**3.45e−01*****	**9.17e−02*****	0.2536	3.1344	0.0009	Effect stronger for A group
H7: habit → choice behavior	**2.48e−01*****	**4.65e−01*****	0.2178	2.9547	0.0016	Effect stronger for B group
H8: choice intention → choice behavior	**7.20e−01*****	**4.19e−01*****	0.3015	4.4449	0.0000	Effect stronger for A group

Note: *stands for <0.1; **stands for <0.05; ***stands for <0.01.

We can also conclude that there is no significant difference between the path coefficients of A group and the one of B group except the coefficient of path 3. The choice intention of B group is more affected by relative effect expectancy and relative performance expectancy, while relative physical risk have has stronger significant negative impacts on choice intention for B group (see **Table 4**).

The reason as follow:

In the first path, when Chinese audience watch programs with their intimate partners, the operating behavior can be completed by the intimate partners, so audience have the expecting of free rider which reduces the sensitivity of operation. But the audience who watch programs alone must operate the video terminal by themselves that leading a high level's sensitivity of operation existing in the people who watch programs alone.

In the second path, programs can provide entertainments and opportunities of emotional communication to audience. The audience who watch programs with their intimate partners not only focus on programs, but also interactive communication and emotional communication. However audience who watches programs alone are more affected by programs itself because they can't get a positive utility of interactive communication and demands more compensation of program content.

In the fourth path, comparing with audience who watch programs alone, the audience who watch programs with intimate partners may be more likely addicted into programs content and emotional communication ignoring the physical risk may existing.

In fifth path, comparing with the audience who watch programs alone, the choice behavior of audience who watch TV with intimate partners is more affected by relative social influence. The reason is that people is less influenced by other people when they are alone.

In the sixth and seventh paths, habit can through choice intention indirectly influence choice behavior and directly influence behavior. The choice behavior more easily influenced by the habits for B group. The reason is that the people who watch programs alone are more independent who influenced less by outside information but more by themselves, so their choice behavior are more easily affected by their habit.

In the eighth path, choice intention effects choice behavior is weaker for the audience who watch programs alone. The reason is that choice behavior is stronger influence by habit, so the habits produces the "crowding out effect", leading the weaker effects of choice intention.

6.2. The Group Analysis of Age Group

As we can see from Table 5, In a group, relative effect expectancy, relative performance expectancy, relative social influence and habit have significant positive effects on choice intention; relative time-related risk have no significant negative effects on choice intention; relative physical risk has significant negative impacts on choice intention; habit and choice intention have significant positive effects on choice behavior. The hypothesis test of b group is the same as a group except the H6 where habit have no significant positive effects on choice intention.

The reason is shown as follow:

In the first path, the young people have higher learning ability and operating capacity. Thus comparing with the old people, relative effect expectancy less affects choice intention for young people.

In the second path, in generally, the people whose age is above 60 is in retirement and have kinds of entertainment in China, so they have less demand of entertainment by watching programs. The another reason is the

Table 5. Summary of findings.

Paths	a group	b group	Absolute difference	T-value	Significance (p)	Explanation
H1: relative effect expectancy → choice intention	1.79e−01***	6.26e−01***	0.4465	5.6743	0.0000	Effect stronger for b group
H2: relative performance expectancy → choice intention	2.37e−01***	7.34e−02	0.1634	1.9632	0.0251	Effect stronger for a group
H3: relative time-related risk → choice intention	1.54e−03	6.46e−02	0.0631	0.8066	0.2102	None
H4: relative physical risk → choice intention	−4.31e−01***	−1.09e-01**	0.3222	3.3275	0.0005	Effect stronger for a group
H5: relative social influence → choice intention	1.87e−01***	2.62e−01***	0.0747	0.8472	0.1986	None
H6: habit → choice intention	8.93e−02***	1.57e−02	0.0157	0.6999	0.2422	None
H7: habit → choice behavior	4.55e−01***	4.52e−01***	0.0034	0.0012	0.4995	None
H8: choice intention → choice behavior	3.88e−01***	5.44e−01***	0.1552	1.1081	0.1342	None

Note: * stands for <0.1; ** stands for <0.05; *** stands for <0.01.

old people are located in a high family status in China, who consider more emotional communication and family solidarity than the entertainment.

In the fourth path, on the one hand, because young people use electronic equipment more frequently, their bodies are subjected to damage by electronic equipment in a higher level, leading the high sensitive of relative physical risk for the young people; on the other hand, the young people contact more negative information of electronic products, so leading their health risks in a high sensitive level.

7. Conclusions and Suggestions

7.1. Conclusions

It can be seen that relative effect expectancy, relative performance expectancy, relative time-related risk, relative social influences and habit by acting on choice tendency to influence choice behavior, and relative time-related risk impact on choice behavior is not significant.

Relative effect expectancy, relative performance expectancy and relative time-related risk, relative physical risk are from the audience perception of terminal which reflect the influence of the material essential attributes on selection intention; relative social influence mainly from perspective the of social relations reflects a person's choice affected by the others who are important to him; while habit mainly from automatic behavior tendencies developed during the past history of the individual, reflects the impact of past behavior of the audience on current and future choice behavior. In previous part, the R^2 of choice intention is 0.859 (see **Table 3**), it can be proved the three parties above have a very good explanation on the audience choice intention.

Habit has the greatest influence on choice behavior. Its impact includes two parts: the first one is the direct effect which habit directly affects the choice behavior which is 0.504; the other part is the indirect effect where habit affects influence the choice behavior through choice intention. The indirect is 0.098 (0.231 * 0.423). From what has been discussed above that habit's impact on choice behavior mainly embodied in its direct effect on choice behavior.

Relative time-related risk has no significant effect on choice intention. This study argues that the main reason is when audience watching video program, they will mainly choose recreational ones to pass time, so the audience is not sensitive to the loss of time and considers it less when they choose a video terminal.

Different watching partners will lead audience perception affecting choice intention differently. The empirical analysis shows that, in addition to the path from relative time-related risk to choice intention the two partner groups have no difference; A group and B group were significantly different in the rest of the path.

Of different ages will generate audience perceive having different effects on its choice intentions. Through the empirical analysis, we find that the old group and youth group on the three paths that from relatively effect expectancy to choice intention, relative performance expectancy to choice intention and relative physical risk to choice behavior exist significant differences.

7.2. Suggestions

Under the condition of without segmenting customers, whether traditional television or network video, manufacturers can transform and upgrade products from the following aspects:

Firstly, for video terminal manufactures, they can upgrade the video terminal equipment, simplify the operation steps of terminals and create green product. Video terminal equipment is the basis of the video industry. The simpler the terminal operation is, the more convenient it will be, the easier it is to produce usage behavior. If video terminal is less harmful to the body and more environmental protection, the less relative physical risks the audience faces, audience will more likely to use the product. Therefore, video terminal manufactures should increase investment in technical development and upgrade product equipment. The sooner to product humanized, easy to use, green video terminal equipment, the quicker to occupy the market as soon as possible.

Secondly, for video content providers, they can enrich the video content and improve the quality of video. Video content is the core of the video industry. Diverse, rich and high quality content is the fundamental driving force to promote audience rating. Therefore, enhancing the breadth and depth of video content is the key to survival of a video content provider, video content providers not only can produce high quality products but also let ordinary people become the source of the video content through the platform of the media. It can also work closely with other video producers to jointly produce high-quality video content.

Thirdly, for the old and new media industry, they can step up publicity efforts and pay more attention to the word of mouth. Relative social influence also has remarkable impact on audience selection of video, thereby through all-round, three-dimensional propaganda to let the video terminal devices become a social fashion items and make video content become the topic of audience's daily conversation, which can continue to strengthen effect on the audience from others so as to enhance the level of audience choice intention. In the manufacturers promotional activities, they also can use the construction of "we media" to actively guide its word of mouth so as to make propaganda to achieve a multiplier effect.

Fourthly, it's of great importance to understand the audience demand and developing audience habit for the old and new media industrial manufacturers. The results indicate that habit is the most important factor affecting the choice of video terminal, but its formation is a long process. Only on the basis of fully understanding the needs of the audience, audience habit can be cultured. Hence more attention should be paid to audience's usage experience, communicating with the audience actively and providing more personalized service.

If the manufactures taking the heterogeneity of customers into account and expecting to provide targeted products and services to make themselves effectively in market competition with limited resources, they may consider strengthening their products and services from the following aspects:

Firstly, the group watching video alone prefers network video to traditional TV, the other group watching video with their close partners has just the opposite. With The group analysis of partner group results, it can be found that relative effect expectancy, relative performance expectancy, relative physical risk and habit are the comparative advantages of the network video manufacturer to the traditional one's. Network video equipment manufacturers need to focus on upgrading the video equipment performance, pay attention to make viewing terminal product simple operate and environment friendly, and do their best to meet the hardware requirements of the group watching video alone which is also very sensitive to relative performance expectancy, therefore online video content providers need to provide high-quality video services to meet the video programs demand of the group watching video alone. Considering habit is the most important factor that influencing the audience watching video alone, the network video industry need to focus on cultivate customer habits. And the speed of upgrading, the efforts of reforming and the degree of adapting should be organically combined when upgrading products and services to avoid damaging audience habit and losing customer.

Secondly, relative social influence is the entry point of the traditional TV industry. The group watching video with their close partners prefers traditional television, and the choice intention of this group is more sensitive to relative social influence. The traditional TV industry need strengthening the spread of marketing and word-of-mouth to form the relative advantage of network video and better compete with online video.

Thirdly, in terms of age division, 60-year-old or older population are more loyal to traditional television and their choice intention is more likely to be affected by relative effect expectancy, thereby traditional television video equipment manufacturers in their production of video terminals should try to design the operating of video terminal equipment easy and more in line with the operating characteristics of the elderly.

Fourthly, the youth group range from 18 to 25 prefers the Internet video, and their choice will is more sensitive to relative performance expectancy and relative physical risks, and therefore network video producer should take relative performance expectancy and relative physical risks into consideration when developing competitive strategy. Network video terminal equipment manufacturers need to produce green technology products and minimize the physical damage to the audience. And online video content providers should pay attention to the characteristics of young people from age 18 to 25, such as be fond of fashion, the pursuit of independence, so their content should be combined with popular element and novelty which can be more attractive to the youth group.

8. Closing Words

With the popularization of computer, smart phone as well as the accelerate development of network technology, the structure of Chinese video industry has already changed. Based on the background, we expect to find the key factors that influence Chinese audience's choice between traditional TV and network video and support practical guide for media industry to improve its service.

Firstly, through literature reviewing, we find that previous research scholars studied the relationship between traditional TV and network video mainly from the perspective of industry. Therefore, we decided to construct the structural equation model of video terminal choice behavior to explore the factors that influence the audience

choice and expect to make up the previous literature's lack of research in this area. Secondly, we extract the factors which influence audience's video selection: relative effort expectancy, relative performance expectancy, relative time-related risk, relative physical risk, relative social influence and habit. By considering the audience past habits will affect their current selection, habit is introduced in this paper which improved the explanation of the modified model. Thirdly, we inquired for the important factors affecting the public choice of video terminal from the perspective of empirical. Fourthly, in order to make the result more precise, we select partners and age as moderator variables to analysis how demographic characteristics impact the different paths of assumptions. The results show that partners and age have significant differences in the different paths of assumptions. Fifthly, we provided recommendations to the old and new media industry. The recommendations were divided into two parts: the first part one is under the condition of without segmenting customers; the second one is the condition of with segmenting customers.

The results show that relative effort expectancy, relative performance expectancy, relative social influence and habit can positively influence audience choice; relative physical risk negatively influences audience choice; relative time-related risk have no influence on audience choice. And habit is the most important factor that influence audience choice. We also find that partners and age play important roles as moderator. In the different paths of assumptions, partners and age have significant differences.

Under the condition of without segmenting customers, we think that manufactures can improve their products and services based on the result of PLS-SEM. But if the manufactures take the heterogeneity of customers into account and expect to provide targeted products and services to make themselves effectively in market competition with limited resources, they may consider strengthening their products and services based on the result of group analysis.

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