



# Assessing Factors Influencing Consumer Purchase Intention for Over-the-Top (OTT) Video Services in China: A Perceived Value Theory and UTAUT Perspective

Jiyuan Shen<sup>(✉)</sup>

School of Asian Studies and School of International Business, Beijing Foreign Studies University, Beijing 100089, China  
toshenjiyuan@bfsu.edu.cn

**Abstract.** Internet access has caused a change in video content consumption led by the spike of over-the-top (OTT) video services. Despite the large market and the growing trend of OTT in China, OTT platforms have been facing the lack of profitability; in addition, few studies exist on how consumers perceive OTT services. This study fills the research gap adjusting and extending perceived value theory and the unified theory of acceptance and use of technology (UTAUT) to design a comprehensive model on consumer purchase intention for OTT services, and tests the model using structural equation modelling on cross-sectional data from 238 OTT users. The results indicate that perceived value, social influence, and personal innovativeness all have a significant positive effect on OTT purchase intention, while perceived cost negatively affects consumers' intention to subscribe. The results also suggest a significant positive impact of personal innovativeness on perceived value and a less significant negative impact on perceived cost. The reasons and implications are discussed.

**Keywords:** Over-the-top (OTT) · Perceived value theory · Unified theory of acceptance and use of technology (UTAUT) · Purchase intention

## 1 Introduction

Digital media expansion and exploration has altered the patterns of media consumption, and thus fostered the emergence of multiple over-the-top (OTT) video services, with an anticipated global market size of \$86.80 billion before 2026. The United States, China, and India, the three largest OTT markets, are projected to account for two-thirds of global OTT revenues by 2025 [1].

Following the global hit of OTT giants such as YouTube and Netflix, the OTT industry in China has been developing rapidly. As of Feb. 2022, the utilization rate of online videos in China reached 94.5% with 975 million users [2]. The main OTT platforms in China, such as iQiyi, Tencent Video, Youku, etc. are widely accepted by people, showing enormous growth potential. However, having just completed the transition from AVoD

dominant model to SVoD focused hybrid model, the problem of inprofitability exists in Chinese OTT industry, with most of the platforms under high deficit.

Therefore, in such a rising, promising, yet competitive, profitability-lacking OTT market, it is vital to conduct a proper assessment of consumer purchase intention for OTT services. In this context, the study investigates the internal mechanism of individual consumption behaviour on OTT platforms, to examine the factors influencing users' willingness to subscribe to OTT services. This study not only improves the research model of OTT services, but also provides practical insights into marketing and promoting strategies for OTT service providers.

## **2 Literature Review and Theoretical Basis**

### **2.1 OTT Video Services**

Recent consensus exists, despite some controversy over the definition, that OTT service is an online controller or distributor that offers direct access to video content via the Internet for viewers [3]. The predominant business model among OTT services can be classified as AVoD (Ad-based video on demand), TVoD (transactional video on demand), SVoD (subscription-based video on demand) and Hybrid Business Models. Most OTT platforms in China adopt the hybrid business model, incorporating the other three business models, with SVoD as the leading model. Hence, this study focuses on purchase intention for OTT services under SVoD.

### **2.2 Purchase Intention for OTT Video Services**

Early studies of internet service adoption have identified information, entertainment, and irritation as main factors [4]. Further research has revealed that perceived ease of use, perceived ubiquity, perceived value, perceived trust, and susceptibility to interpersonal influence are the major attributes underlying Internet-related consumption [5].

Since OTT platforms dominated the entertainment industry, studies have been focusing on the purchase intention factors for OTT services. Limited prior studies show that content, convenience, features, price, quality, and habit [6] are significant factors. Nevertheless, unlike that of other internet-related products, the majority of existing research on OTT services is limited to the features and functions of the video platform or OTT, with little focusing on the internal state of consumers. Therefore, these studies lack generalizability, leaving room for further research.

### **2.3 Perceived Value Theory, UTAUT, and OTT Service Consumption**

Perceived value stands for a consumer's overall assessment of a product or service by weighing the costs and benefits [7]. Certain values a consumer perceives from the corresponding service determine the adoption of a technology, which some research aimed to identify for Internet services [8]. Therefore, it is beneficial to explore from the consumer's perspective the influence of certain values extracted from OTT service adoption.

The unified theory of acceptance and use of technology (UTAUT) unifies different models and theories of user intentions to utilize a technology [9], with four pivotal abstractions: effort expectancy, performance expectancy, social influence, and enabling conditions. It has been extended by different authors with numerous variables such as perceived value, perceived risk, perceived entertainment, and personal innovativeness [10, 11], yet few have been used in OTT user studies.

Hence, integrating effective variables in previous research, combining perceived value theory and UTAUT to construct a new model for OTT users can help better understand consumers' purchase intention for OTT services.

### 3 Research Hypotheses and Conceptual Model

#### 3.1 Perceived Value and Perceived Cost

Previous research has considered three major components of perceived value: functional, social, and emotional [12]. Further research has added monetary and convenience features to make perceived value theory applicable to online services. Studies have found these aspects most appropriate for measuring the cognitive benefits online service adoption and continuation [13]. In addition, the original discussion over the dimensions driving perceived value has divided perceived value into perceived benefits and perceived sacrifices [7]. Therefore, to strengthen the characteristics of OTT services and the purchase behaviour, based on the widely accepted dualistic theory of benefits and sacrifices, this study incorporates the elements from emotional and functional aspects (usefulness, entertainment, and ease of use) that reflect perceived benefits into perceived value, separating perceived cost (i.e. the monetary sacrifices a consumer perceived to acquire a product or service) derived from monetary aspects as the main feature indicating perceived sacrifices. Relevant hypotheses are as follows:

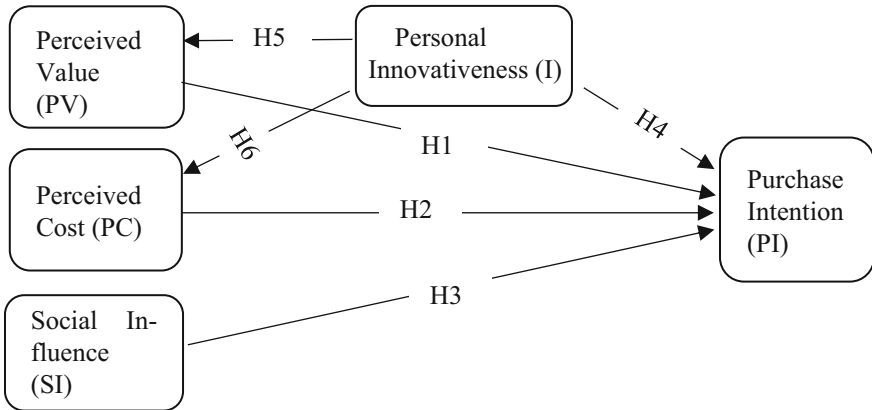
H1. Perceived value positively influences consumer purchase intention for OTT services.

H2. Perceived cost negatively influences consumer purchase intention for OTT services.

#### 3.2 Social Influence and Personal Innovativeness

Studies measuring the usefulness and convenience of technology have found performance expectancy and effort expectancy important [14, 15], while these two categories are not of direct importance, and thus less applicable, to OTT services due to their ease and flexibility [16]. Consequently, this study focuses on the social influence element of UTAUT, replacing the other three constructs with perceived value and perceived cost, and introducing personal innovativeness.

Social influence involves intentional and unintentional efforts to adjust individual behaviour to satisfy the needs of a social environment [17]. Studies have verified that social influence has a significant positive impact on purchase intention. Research has substantiated, in terms of customers' self-esteem, the importance of status [18]. Gratification-related theories also involve self-image and customer status, main factors in social influence [19]. Recent studies have determined companionship as one of the main motives regarding OTT services [20].



**Fig. 1.** Conceptual Model.

Personal innovativeness refers to an individual's willingness to adapt or to experience a new technology [8]. The OTT market in China is relatively new and immature, making personal innovativeness a necessary focus. Studies have substantiated the positive role customers' personal innovativeness plays on purchase intention for online products [21] and internet services [22]. Furthermore, previous research indicates a direct impact of personal innovativeness on perceived value and thus, an indirect impact on users' purchase intention [23].

Hence, the study presents the following hypotheses:

- H3. Social influence positively influences consumer purchase intention for OTT services.
- H4. Personal innovativeness positively influences consumer purchase intention for OTT services.
- H5. Personal innovativeness positively influences perceived value.
- H6. Personal innovativeness positively influences perceived cost.

Figure 1 demonstrates the conceptual model proposed based on the above analysis.

## 4 Methodology

### 4.1 Sample and Sampling Method

The targeted respondents were those with experience as online video viewers on OTT platforms. The surveys were conducted in 2022 among Chinese residents aged between 18 and 54 years. This study distributed questionnaires through research platform Sojump.com and performed a pilot test of 50 respondents to confirm the validity and suitability of the questionnaire design. Based on the demographic information of the online video user population in China [2], data were weighted according to gender and age to ensure a sample that represents the general population. After weighting and eliminating outliers applying Cook's method, a valid sample scale of 238 was obtained. The demographics are shown in Table 1. The wide distribution of the profiles on various parameters proves it to be a heterogeneous, and thus representative sample.

**Table 1.** Demographic profile. [Source: Author's compilation]

	Variable	Values (%)
Gender	Male	46.1
	Female	53.9
Age (years)	<19	4.6
	20–29	41.4
	30–39	35.6
	40–49	16.7
	>50	1.7
Monthly Disposable Income (RMB)	<1000	5.4
	1001–3000	22.2
	3001–5000	26.4
	5001–10000	27.2
	>10000	18.8
Residence	T1 City	35.7
	New T1 City	28.6
	Provincial Capital	13.4
	Other Cities	22.3

## 4.2 Measurement

Based on the hypotheses and the conceptual model, the questionnaire consisted of 5 gratifications sought dimensions using 17 items. The items proposed were adapted from existing and developed scales in previous research (see Table 2) and were further determined after in-depth discussions with two professors in marketing and two marketing directors in OTT service industry. This study explored the factors and modified questionnaire design using a focus group methodology of ten regular users of OTT platforms to confirm the clarity and rationality. These 17 items were evaluated on a five-point Likert scale, with 1 as 'strongly disagree' and 5 as 'strongly agree'.

## 5 Results

The data analysis was conducted via SPSS 26.0 and AMOS 26.0 to perform the examination-execution of the measurement model.

### 5.1 Reliability and Validity Examination

The study used SPSS 26.0 and Amos 26.0 to examine the reliability and validity of the measurement model. Table 3 shows the standard coefficient, Cronbach's  $\alpha$ , combined reliability (CR) and average variance extraction (AVE). Cronbach's  $\alpha$  and CR are both greater than 0.8 (> 0.7 recommended), and the AVE is greater than 0.6 (> 0.5 recommended), with the CR value exceeding the corresponding AVE value. This indicates that the measurement model has good internal consistency reliability and convergent validity.

Table 4 demonstrates the discriminant validity test results. The square root values of AVE of the latent variables on the diagonal are greater than the value of the corresponding inter-measure correlation. This indicates that the measurement model established good discriminant validity.

**Table 2.** Items and adaptation references. [Source: Author's compilation]

Construct	Item	Reference Scales
Perceived Value	PV1. Paying for OTT provides better viewing experiences (resolution, ad blocks, exclusive contents, etc.). PV2. Paying for OTT provides easier access to information and resources. PV3. Paying for OTT brings me more entertainment and enjoyment. PV4. Paying for OTT makes my life convenient and joyful.	Davis, 1989; Agarwal & Karahanna, 2000
Perceived Cost	PC1. I think most OTT services require a high fee. PC2. I think the pricing of most OTT platforms is not reasonable. PC3. The high cost is the main obstacle preventing me from paying for OTT services.	Kuo & Yen, 2010
Social Influence	SI1. I would consider paying for OTT if my family or friends around me are paying for OTT. SI2. Paying for OTT helps me improve my social image and gain recognition and interactions with other OTT users. SI3. Paying for OTT helps me get closer with people.	Venkatesh & Davis, 2000; Agarwal & Karahanna, 2000
Personal Innovativeness	I1. I'd like to be one of the firsts to experience new things. I2. I'd like to experience a new internet function or service. I3. I think I'm a creative person. I4. Usually I try out a new internet function or service before others do.	Agarwal & Prasad, 1998

(continued)

**Table 2.** (continued)

Construct	Item	Reference Scales
Purchase Intention	PI1. I have the intention to pay for OTT services. PI2. I intend to try (or continue) to purchase OTT services in the future. PI3. I'd like to recommend good OTT services to others.	Jarvenpaa, S.L., 2000

**Table 3.** Internal consistency reliability and convergent validity. [Source: Author's compilation]

Latent Variable	Observed Variable	Standard Coefficient	Cronbach's $\alpha$	CR	AVE
Perceived Value	PV1	.811	.836	.889	.667
	PV2	.761			
	PV3	.830			
	PV4	.861			
Perceived Cost	PC1	.915	.869	.919	.791
	PC2	.875			
	PC3	.878			
Social Influence	SI1	.774	.801	.873	.697
	SI2	.874			
	SI3	.853			
Personal Innovativeness	I1	.833	.842	.894	.678
	I2	.788			
	I3	.836			
	I4	.835			
Purchase Intention	PI1	.857	.827	.884	.717
	PI2	.835			
	PI3	.848			

**Table 4.** Discriminant validity. [Source: Author's compilation]

	PV	PC	SI	I	PI
PV	.817				
PC	-.228	.889			
SI	.415	-.545	.835		
I	.273	-.297	.544	.823	
PI	.564	-.446	.636	.588	.847

**Table 5.** Convergent validity and internal consistency reliability. [Source: Author's compilation]

Fit Indices	$\chi^2$	$\chi^2/df$	GFI	AGFI	RMSEA	NNFI	CFI
Recommended Value	N/A	$\leq 5$	$\geq 0.8$	$\geq 0.8$	$\leq 0.08$	$\geq 0.9$	$\geq 0.9$
Results	231.407	2.066	0.901	0.864	0.067	0.930	0.942

**Table 6.** Hypothesis verification results. [Source: Author's compilation]

Hypothesis	Relationship	Coefficients	Verification
H1	Perceived Value $\rightarrow$ Purchase Intention	.366***	Supported
H2	Perceived Cost $\rightarrow$ Purchase Intention	-.087*	Supported
H3	Social Influence $\rightarrow$ Purchase Intention	.253**	Supported
H4	Personal Innovativeness $\rightarrow$ Purchase Intention	.480***	Supported
H5	Personal Innovativeness $\rightarrow$ Perceived Value	.532***	Supported
H6	Personal Innovativeness $\rightarrow$ Perceived Cost	-.714***	Supported

Notes: \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ .

## 5.2 Structural Equation Model

Structural equation modelling (SEM) was performed to analyse the structural model using AMOS 26.0. Table 5 demonstrates the fit indices. The proposed structural model returned a good fit as the main fit indices satisfy the acceptable recommended value criteria. The path analysis of the model was performed, and the standardized path coefficients and significance among the latent variables were obtained as shown in Table 6. This study evaluated the research hypotheses proposed according to the significance and magnitude of the structural path. The results support all the hypotheses, with all of the significance level less than 0.05. The final hypothesis verification results are also revealed in Table 6.

## 6 Discussion

The present study designed an integrated model to evaluate the impact of perceived value theory and UTAUT on consumer purchase intention for OTT services, adjusting the factors proved insignificant (performance expectancy, effort expectancy) while retaining the exogenous variables of significance (social influence), focusing on internal attributes behind consumer behaviour (perceived value, perceived cost), and introducing determinants that pose indirect and direct effect (personal innovativeness). This study confirmed the significant correlation between all the proposed factors and consumer purchase intention.

First, among the four factors proposed, personal innovativeness demonstrates the most significant effect on purchase intention. Previous research emphasized the positive correlation between personal innovativeness and adoption for new technology [24],



and further, for the consumption of internet services or products, in the field of online shopping, mobile commerce, etc. [21, 22]. This study indicated that the positive influence of personal innovativeness on purchase intention is also applicable to OTT services.

This study not only further substantiated and extended previous research on the correlation between personal innovation and consumer purchase intention to the field of OTT services, but also demonstrated the direct positive impact of personal innovativeness on perceived value, incorporating perceived usefulness, perceived entertainment, and perceived ease of use that are linked with benefits in the perceived value theory, and the direct negative effect on perceived cost, which made up for the limitation of prior research that mainly focused on its effect on perceived ease of use aspect in the perceived value theory [23].

Furthermore, as for the two main factors derived from perceived value theory, the results supported the significant positive effect of perceived value and the significant negative effect of perceived cost on consumer purchase intention for OTT services. Previous studies have continuously expanded the attributes of perceived value theory to apply it to online service research [13], yet few studies have divided the attributes into integrative variables according to the original dualistic theory of benefits and sacrifices. To build a construct that better reflects the characteristics and behaviours of OTT users instead of the detailed features and functions, this study extracted two factors from the perceived value theory, namely perceived value, integrating aspects of benefits, and perceived cost, reflecting on the perceived sacrifices. Therefore, the results indicated a positive influence on OTT-purchase intent of perceived usefulness, perceived entertainment, and perceived ease of use in a comprehensive approach. On the other hand, the results supported prior studies that stated the significance of perceived monetary value in assessing users' intention to utilize online services [8], specified to OTT services. This study also, to some extent, supported research that suggested the limited impact of perceived monetary value [25] with a less significant impact of perceived cost shown in the results, which is possibly due to the fact that the pricing of the mainstream OTT platforms in China is similar and relatively reasonable.

Finally, this study confirmed the significant positive effect of social influence. Several studies suggested a limited effect of social influence on users, unless social identity establishment is involved [26]. The positive result of this study could indicate a growing concern about social identity in China. The causes are also possibly that Covid-19 has led to the socialization of OTT platforms, resulting in social watching being a crucial determinant in subscribing OTT services.

## 6.1 Theoretical and Practical Implications

This study provides valuable theoretical insights. Foremost, this study built a comprehensive model to identify the underlying structure of the internal state of consumers paying for OTT services from the user's perspective, instead of the features and functions of the OTT products, which have been the focus of most previous OTT studies. Furthermore, the study analysed and combined perceived value theory and UTAUT to measure consumer purchase intention for OTT services. The variables proposed were integrated from various previous studies, yet few have tested the effect of these variables in the context of OTT services, based on the perceived value theory and UTAUT, and

further, combined both theories to construct a theoretical framework. In addition, in this study personal innovativeness served not only as an external factor for perceived value and perceived cost, but also an internal factor for purchase intention. This unique feature offers implications for the importance of personal innovativeness in future consumer behaviour studies. Moreover, opposite to some prior research, the significant impact of social influence in this study also hints at the possible change of viewer habits and the higher inclination towards social interactions via OTT platforms in the post-pandemic era.

The study also presents managerial implications and strategic guidelines for OTT platforms in China. First, the marketing strategies should be centred on the benefits of the OTT services, such as video resources, ad blocks, contents generation, recommendation system, etc. to practice the impact of perceived value. Second, managers should increase value-added services with reasonable pricing and improve the payment system to reduce perceived cost. Third, OTT platforms should establish online communities to strengthen social interaction attributes. Finally, personal innovativeness should be one of the focuses when new functions or services are designed and promoted.

## 6.2 Limitations and Scope of Future Research

This study has certain limitations. Firstly, the present study employed a cross-sectional design prone to methodological bias. Therefore, the study suggests that future researchers perform longitudinal, methodological bias-free investigations. Secondly, although relevant data were collected, this study did not test the effect of demographic variables, which could be significant, on the OTT purchase intention and the determinants proposed. Future research could incorporate the moderation effects of demographics. Thirdly, in this study, the significant influence of personal innovativeness on perceived value and cost as an external factor and on purchase intention as an internal factor has been confirmed, while its effect as a moderator variable between perceived value and cost and purchase intention has not been examined, which future research could include. Lastly, this research is mainly based on the Chinese OTT platform, most of which follow a hybrid business model of AVoD, SVoD, and TVoD. Hence, future studies should generalise the findings accordingly with cautious to other countries.

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