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Chien-Li Shen

Yen-Chang Liang

Eldon Y. Li

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THE IMPACT OF EXPERIENCE IN SERVICE VIRTUALIZATION ON TRAVEL INTENTION - THE CASE OF FORBIDDEN CITY TOUR

Chien-Li Shen¹, Yen-Chang Liang², Eldon Y. Li³, Department of Information Management, College of Commerce, National Chengchi University, Taiwan
E-mail: ¹ 99356508@nccu.edu.tw; ² 98356017@nccu.edu.tw; ³ eli@nccu.edu.tw

Abstract

The advent of Internet and home shopping economy in the recent years has reduced the intention of people to leave home for sightseeing. This has significantly impacted the growth of physical tourism industry. This paper utilizes the virtual tour of Forbidden City to conduct a sequence of experiments in tourism experience. Before using the system, Theory of Planned Behavior and Involvement are employed to measure the intention of traveling. After then, two constructs, emotion and system, are adopted to explore how the experiential value of virtual tourism impacts the intention of travelling. The experience of tour virtualization allows customers to create unforgettable feelings in the virtual world. It can affect not only the customer's experiential value of virtual tourism, but also intention of traveling in the future.

Keywords: Virtual experience, experiential value, service experience, virtualization, behavior intention

Introduction

Virtual Experience (VE) has become a new life style to customers because VE has emerged as a key determinant of decision making and shopping behavior. Pine and Gilmore (1998) proposed the first-ever concept of virtual experience in the Harvard Business Review and elaborated more details in the book, *The Experience Economy* [34]. Schmitt also presented the experiential marketing is

in the way of getting in touch and interacting with customers. The transitional marketing is focused on the quality and functionality of products, but the experiential marketing is intended to provide unforgettable experience to customers [36]. In the competitive era of commercial industry, the corporate advantage does not only come from the functional attributes of products, but consumption value derived from customer experience.

Cheong (1995) stated that a virtual reality system plays a significant role of helping customers to experience their intended destinations and affects customers' decision making on travel arrangement [14]. The more interactive, interesting, and attractive environment a website can offer the more richness of virtual experience customers can nourish. This paper uses a virtual system of the Forbidden City as an example to explore how the factors of virtual experience will influence customers' experience value and consumption intention, as well as their involvement with the virtual world.

Literature Review

Theory of Planned Behavior

Theory of Planned Behavior (TPB) is considered as a theoretical, architecture, and stabilized method to develop and assess consumption intention in different consuming domain and industry [3]. TPB has been applied to predict behavioral intention, which can be utilized to explain individual behaviors, as well as

the new behavioral models [1][11][39]. TPB consists of four key constructs, which are as below:

(1) **Attitude** refers to a concept and inclination toward general recognition of products or services, for example, a person like or dislike a specific product [30]. In general, customers will take the possible benefits or advantages into consideration when they act in response to a particular behavior [20].

(2) **Subjective Norm** is defined in terms of how people are led to decide their behavioral intention under social pressure or suggestions and ideas from the others, who would be families, classmates or business partners [3] [31]. Cheong also indicated that when an individual perform a behavior, he/she will be influenced by organizations or other persons, and the influenced intensity depends on how important the organizations or persons are to the individual [14].

(3) **Perceived Behavioral Control (PBC)** is regarded as control belief, which is considered to be easy or difficult to perform a behavior [3]. A study showed the PBC factors, which are related to control belief, increase or decrease behavioral intention. Individuals, who have control power on time, money or resources, own some of PBC in their personality characteristics [2].

(4) **Consumption Intention** represents the probability to perform a behavior subjectively, and it reflects that if customers are willing to perform some particular actions [3]. We can examine and measure by using the indices of behavioral intention to see if customers are more like to make a trip to a specific

destination or to recommend the trip or service to their friends.[5][10] [15] [27].

Involvement theory

The Involvement theory has been adopted to describe individual psychological level or state, so involvement is an internal state of mind. Customers are influenced by the factors of human beings, environment, service or products, and so on; therefore, they have different attention levels of each product or service. Petty and Cacioppo claimed that involvement is considered as the intensity of decision and individual involved when customers choose among services or products to make a purchasing decision [33]. Therefore, involvement is also included in our research model along with TPB to discover if it has a significant impact on customers' behavior intention before customers conduct the virtual experience.

Hypotheses Development

Not only TPB but also Intention is taken to assess the intensity of consumption intention in this paper, and to see if general recognition of products or services is influenced before customers conduct the virtual experience. In the first half of the experiment, we believe these constructs, which are Attitude, Subjective Norm, PBC and Involvement, will be significantly related to consumption intention before the virtual experience is conducted. Thus, we hypothesize:

H1. *Attitude* has a direct impact on *Consumption Intention* to visit the Forbidden City.

H2. *Subjective Norm* has a direct impact on *Consumption Intention* to visit the Forbidden City.

H3. *PBC* has a direct impact on *Consumption Intention* to visit the Forbidden City.

H4. *Involvement* has a direct impact on *Consumption Intention* to visit the Forbidden City.

System

The factor of **System** is regarded as tele-presence in the paper, since we have controlled some factors related to experiment environment, such as the stability of host device and the speed of internet access. In the specific condition, the participants are expected to have the same virtual experience while touring the Forbidden City in the virtual world.

Tele-presence means the perceived sensation derived from the virtual world [39], and stands for the identical and must-to-have factor as presence when being adopted to evaluate the virtual environment [7]. The stronger the presence customers perceive, the more experience value they will obtain. [16] The dimension of system in the paper is designed to be more related to virtual architecture design and what a virtual environment would provide to make customers feel like in the real world.

Emotion

We adopt awareness and impressed as the factors of emotion in this paper. Awareness is what people response to perception or recognition of a condition or an event. In the virtual environment, participants can interact with other participants or virtual characters, not only just watch it [8][19]. Impressed is considered as a factor enables users perceive a magic and overwhelming desire to keep staying in the virtual world [40].

Experience Value & Intention

Pine and Gilmore believed that interaction is an important factor, by interacting between experience service and customers, customers invoke a particular

sense and perceived favorability toward products or services [34]. Experience value is also a crucial factor of influencing customer consumption intention [12], but in the travel industry, studies, which investigate the relationship directly from customer value to behavioral intention, are hardly found in the Empirical studies [5]. As the result, we have employed this concept into our research model.

In the second half of the experiment, we believe these constructs, which are system and emotion, have positive influences on experience value. In addition, consumption value has a positive influence on consumption intention for customers to visit the Forbidden City after the virtual experience is conducted.

From the above discussion, we hypothesize:

H5. *System* has a positive influence on *Experience Value*.

H6. *Emotion* has a positive influence on *Experience Value*.

H7. *Experience Value* has a positive influence on *Consumption Intention* to visit the Forbidden City.

After two phases of experiment and the virtual tourism, we expect that customers are more willing to visit the Forbidden City in the future. Based on this understanding, the hypothesis is suggested as below.

H8. *Consumption Intention* increases significantly after the virtual experience.

Methodology

Research Model and Operationalization of Variables

According to our research model in Figure 1, this paper attempts to evaluate the relationship among

each dimension and construct, and in the end to compare the difference between two values of consumption intention before/after the service experience of virtualization. In this study, we chose the customers, who haven't been to the Forbidden

City in China, as our research participants. Table 1 lists the operational definitions and sources of our research constructs, and all constructs have been modified to meet our research context.

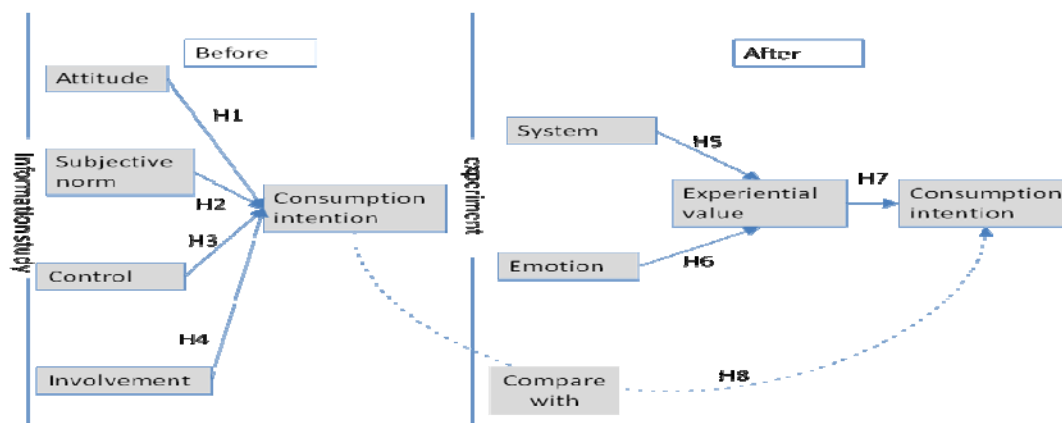


Figure 1. Research model

Table 1. Definition of research constructs

Construct	Definition	Source
Attitude	The customer evaluation or perceived favorability of products or services	[28][31]
Subjective Norm	The group influence on customers to change their behavioral intention	[17][32]
Perceived Behavioral Control	The perception of self-controlling (Constraints of time or money) to buy products or services	[2][6][15]
Involvement	The customer attention of products or services	[44][24][26][29]
Consumption Intention	Customer intention to perform future favorable behavior	[43][38][23][41]
System	The virtual architecture design to make customers feel like in the real world	[35]
Emotion	The perceived sensation provided in the virtual world	[16][40]
Experience value	The perceived favorability toward products or services.	[25][42][13]

Questionnaire Design

The research questionnaire, which are listed in Appendix A, has referred to the relevant papers and been designed to utilize the factors in the research framework according to the literature review. This paper is the prior study and aims to confirm if all the factors and items are qualified to meet the objective of the study. All items of focal constructs are anchored at the six-point Likert scale, ranging from “1 = very strongly disagree” to “6 = very strongly agree.”

Sample

In order to collect the prior data, first of all, we posted an announcement on BBS (telnet://ptt.cc) to ask for volunteers to participate in the study. Secondly, we invited those who have not been to the Forbidden City and asked them to fill in the questionnaires.

We received a total of 123 returned questionnaires, in which 116 were valid. Out of 116 responses, 48.29% were male and 51.72% were female. The bulk of samples ranged in age from 18 to 30 years old. Also,

87.07% of samples have monthly income less than 20,000 N.T. dollars. 94.83% had at least college degree. In terms of average consumption frequency, 1.72% use internet four days per week, 5.17% for five days per week, 6.03% for six days per week, and 87.7% for every day per week. Moreover, 87.93% of the samples have experience of travelling abroad.

Result

The confirmatory factor analysis (CFA) has been employed as a measurement model to verify whether the constructs are qualified to fulfill the standard of validity and reliability. The structural model is used to investigate the strength and direction of the relationship between the theoretical constructs. In this study, the software, AMOS 18, was utilized to assess the measurement and the structural models.

Some factor loadings of the items do not meet the statistical standard. As a result, 12 items (A3, C3, I2, CI1, S3, E3, E4, EV1, EV2, EV5, EV6, CI1) are

removed in order to reach the threshold of validity and reliability. Table 2 shows the statistics of the remaining data.

Fornell recommended the factor loading should be greater than 0.5, and our values range from 0.502 to 0.971 as standard [18]. In order to make sure the constructs are consistent, we evaluate the CR value and all the values are higher than 0.7 [4]. The values of the average variance extracted (AVE) range from 0.704 to 0.9102.

Table 3 and Table 4 elaborate that the values in the diagonal line are the AVE values and the remaining are the correlation coefficients between constructs. If the AVE value is higher than others in the same column and row, so that means this questionnaire prove to satisfy the Discriminant validity.

Table 2. Reliability

Construct	Item	Factor loading	Cronbach's α	Composite reliability	Average variance extracted
Attitude	A1	0.798	0.82	0.8223	0.8353
	A2	0.871			
Subjective Norm	SN1	0.748	0.7511	0.7463	0.7043
	SN2	0.715			
	SN3	0.646			
Control	C1	0.751	0.7937	0.7998	0.8164
	C2	0.877			
Involvement	I1	0.502	0.6379	0.7012	0.7485
	I3	0.932			
Consumption Intention(before)	CI2	0.938	0.8703	0.8752	0.8819
	CI3	0.822			
System	S1	0.726	0.806	0.806	0.7622
	S2	0.761			
	S4	0.798			
Emotion	E1	0.953	0.7883	0.8106	0.8291
	E2	0.683			
Experience Value	EV1	0.858	0.8252	0.8298	0.8422
	EV2	0.826			
Consumption Intention(after)	CI2a	0.971	0.9014	0.9058	0.9102
	CI3a	0.845			

Table 3. Discriminant validity(before)

	Involvement	control	subjective norm	attitude	Consumption Intention
involvement	0.7485				
control	0.383	0.8164			
subjective norm	0.344	0.329	0.7042		
attitude	0.747	0.402	0.478	0.8353	
Consumption Intention	0.565	0.456	0.531	0.694	0.8119

Table 4. Discriminant validity(after)

	involvement	control	subjective norm	Consumption Intention
System	0.7622			
Emotion	0.757	0.953		
Experience Value	0.735	0.721	0.8422	
Consumption Intention	0.303	0.435	0.462	0.9102

Table 5 and Table 6 indicate the values of model-fit evaluation, GFI (goodness-of-fit index), NFI (normalized fit index), CFI (an incremental fit index of improved NFI) and RMSEA (root-mean-square error of approximation). As the result of our hypothetical model, those values have been verified and all located in the acceptable range.

RMSEA with values under 0.05 represent good fit; those between 0.05 and 0.08 suggest reasonable fit; those between 0.08 and under 0.1 suggest mediocre fit, and those higher than 0.1 consider poor fit [37]. In the first half of the hypothetical model before the virtual experience, the RMSEA values, ranging from 0.08 to 1, are acceptable. However, the NFI values are not able to reach the standard, and that means some of the items would not be designed appropriately and should be adjusted to improve the goodness of fit.

Table 5. Overall fits of models (before)

Fit index	Criteria	Results	Suggested by authors
$\chi^2/d.f.$	<3	2.123	[9]
GFI	>0.85	0.895	[21]
NFI	>0.9	0.859	[9]
CFI	>0.9	0.918	[9]
RMSEA	<0.08	0.099	[22]

Table 6. Overall fits of models (after)

Fit index	Criteria	Results	Suggested by authors
$\chi^2/d.f.$	<3	1.333	[9]
GFI	>0.85	0.944	[21]
NFI	>0.9	0.944	[9]
CFI	>0.9	0.985	[9]
RMSEA	<0.08	0.054	[22]

Tests of the structural model

The result of the first half of the model indicated that the empirical data supports the hypothesis H1, H2, H3. Attitude had a significant influence on consumption intention ($\beta=0.521, p<0.05$), subjective norm had a significant effect on consumption control behavior ($\beta=0.255, p<0.05$), and control behavior had a significant effect on consumption intention. Contrary to prediction, no association was found between involvement and consumption ($\beta=0.087, p>0.05$), so hypothesis 4 was not supported. We suspect it would be resulted in the poor design of item I1 and I3.

The result of the second half of the model showed that system had a significant effect on experience value ($\beta=0.514, p<0.001$) and emotion had a significant effect on Experience Value ($\beta=0.335, p<0.05$), supporting hypotheses 5 and 6, respectively. As we expected, experience value had a significant,

positive influence on consumption intention ($\beta=0.503$, $p<0.001$), supporting hypotheses 7.

To conclude the differential of before-and-after consumption intention, the values were summed up and divided by 2 respectively (before=437, after = 552.5). The result indicated that the after-VE intention is higher than the before-VE intention, supporting hypotheses 8.

Conclusions and Discussion

The objective of this paper aims to explore whether the virtual system of the Forbidden City can influence customers on making a real trip. Using factor analysis, a set of underlying dimensions for the key constructs was revealed in this study: TPB, involvement, system, emotion, and experience value. The study also investigated how the virtual experience can affect the user's experience value and intention when experiencing the virtual world.

This paper is an exploratory study and is intended to verify if involvement impacts consumption intention as hypothesized in H4. According to the result above, there is not enough evidence to support this hypothesis.

People have been creating virtual experience in their daily lives. If a product or service can provide more unforgettable experience to customers, customers will be willing to pay more time and money. Therefore, research into the effect of virtual experience is very important and warrants further research effort. Future study should use a revised model, and the target participants should be who have decided to visit the Forbidden City. The objective is to explore if the virtual experience value impacts the real experience value.

More future work will investigate the potential factors for travel companies to implement virtual systems or to provide virtual services. Furthermore, more studies can be concentrated on how the experience value impacts customers' loyalty and satisfactions.

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Appendix A. List of items by construct

Attitude	A1	After studying the information of the Forbidden City, I desire to travel there.	[2]
	A2	After studying the information of the Forbidden City, I like to travel there.	
	A3	After studying the information of the Forbidden City, I feel positive/negative about it.	
Subjective norm	S1	If the Forbidden City is on the hot-list, I want to go as well.	[2]
	S2	I would like to visit the Forbidden City that has been recommended by friends/family	
	S3	Tourist information providers (such as: Internet, television, magazines, agents, etc.) can affect me to visit the Forbidden City.	
control	C1	Next time when I travel to China ,I have enough money to visit the Forbidden City	[2]
	C2	Next time when I travel to China ,I have enough time to visit the Forbidden City	
	C3	Next time when I travel to China, no reason can stop me from visiting the Forbidden City	
involvement	I1	I spend plenty of time collecting and studying the information of the Forbidden City	[16] [30]
	I2	I ask my family/friends for the travel suggestions regarding the Forbidden City	
	I3	After studying the information of the Forbidden City, I am attracted.	
Consumption Intention(before)	CI1	I would like to go to the Forbidden City	[2]
	CI2	I would like to spent money on visiting the Forbidden City.	
	CI3	I would like to spent time on visiting the Forbidden City.	
system	S1	The experience provided by the virtual reality system is the same as that in the real world.	[17] [7]
	S2	The virtual objects are vivid to me.	
	S3	The system provides a quite adequate information	
	S4	Your interactions with the virtual world seem natural to you, like those in the real world.	
emotion	E1	I feel like in the real world while touring the virtual system.	[17] [7]
	E2	I was aware of the tourist.	
	E3	The virtual tour of Forbidden City is impressive.	
	E4	The characters or objects bring the virtual tour of Forbidden City alive.	
Experience value	EV1	The virtual tour of Forbidden City makes me feel like in the real world.	[42]
	EV2	After the virtual tour, I feel that I had fulfilled the wish of traveling.	
	EV3	When I take the virtual tour of Forbidden City, I feel enjoyable.	
	EV4	When I take the virtual tour of Forbidden City, I feel joyful.	
	EV5	After the virtual tour, it offered me the knowledge about the Forbidden City.	
	EV6	After the virtual tour, my curiosity has been satisfied.	
Consumption Intention(after)	CI1a	I am willing to visit the Forbidden City	[24] [40]
	CI2a	I am willing to spend money on visiting the Forbidden City.	
	CI3a	I am willing to spent time on visiting the Forbidden City.	