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Empirical Study on Flow Experience in China Tourism E-Commerce Market

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Abstract:

Purpose: While tourism e-commerce develops rapidly in China, these channels are truly new to both web providers and web consumers, understanding the nature of these media attaches greater importance. This study investigates the mediation effects of flow experience on the relationship between motivation and behavior intention in tourism e-commerce.

Design/methodology/approach: Based on the technology acceptance model, an empirical study is designed to test this relationship. We estimated the measurement model with 13 manifest indicators and 4 latent constructs by CFA to assess the reliability and validity of the construct measures, then tested hypotheses by OLS regression and a formal three-step mediation procedure.

Findings: Overall, the results reveal that trust is incorporated in motivation and play it's role together with other motivations; telepresence and concentration are confirmed in flow experience, and both partially mediated the relationship.

Research limitations/implications: This study demonstrates that to improve consumers' usage adoption, marketers should pay much attention to not only consumers' motivation but also the areas such as flow experience.

Originality/value: this study takes flow experience as a new perspective to explore China tourism e-commerce, estimates its measurement and tests its roles between motivation and behavior intention.

Keywords: tourism e-commerce, flow experience, consumer motivation, mediation

1. Introduction

With rapid growth of China's national economy and improvement of internet, e-commerce, as a mode of living and consuming, plays an increasingly important role, and China e-commerce shows a rapid development momentum since the first tourism website built in 1996 (Wang, 2000). While Chinese people's income steadily increasing under global economic depression, the budgets of travel go higher, and therefore boost the online booking market. In 2020, China will be the top one tourism market as predicted by World Tourism Organization. According to the report of China Internet Network Information Center, the online tourism e-commerce grows rapidly, the china net citizens have reached 357 million with annual increase of 73 million new users and 48.6% online order; the net citizens of booking ticket, hotels and travel itinerary have been up to about 133 million, which accounting for about 22% of Internet users by 2013. the industry is stepping into a growth stage with high speed and long term development (Yang, Hu, Huang, & Liu, 2002).

As former studies show, such as Werthner and Ricci (2004), Mahadevan (2000), Lu, Deng and Wang (2007), tourism e-commerce is a business system which electronically operates tourist industry and its distribution system with the application of the network, based on the tourism database and e-commerce bank. The interactive nature of e-commerce offer many opportunities to increase tourism efficiency by improving the availability of product information, enabling multiple attribute comparisons, and reducing buyer costs (Alba et al., 1997). Although previous researches suggest that creating a compelling online environment will have numerous positive consequences for e-commerce (Hoffman & Novak, 1996), very little is known about the factors that make using the Web a compelling customer experience until flow experience is explored in recent decade (Novak, Hoffman & Yung, 2000; Dai & Salam, 2011). As of today, marketers and researchers are beginning to gain an understanding of flow state, and it is well-recognized that it is the flow experience that enables the necessary manifest function of e-commerce that engages web providers and web customers in order to show the "truth" of e-commerce service.

While tourism e-commerce develops rapidly in China, using Internet as a sales channel has received much attention from both the academy and industry (Dan, Xu & Zhang, 2012). However, these channels are truly new to both web providers and web customers,

understanding the nature of these media attaches greater importance given the promise that e-commerce will increase price competition and reduce seller monopoly power (Bakos, 1997). Chinese people's tourism attitude and behavior may hinder the tourism development if not guided properly (Koyuncu & Lien, 2003). As indicated above, this study (Figure 1) focused on exploring the mediation effect of flow experience in china tourism e-commerce by extending the technology acceptance model (TAM). Specifically, this work explored China tourism e-commerce market, modified construct measurements in China context, investigated the mediation of flow experience. The purpose of this study was to enhance our understanding of tourism e-commerce behavior, and aim at providing China tourism e-commerce some guidance and knowledge to improve their compelling advantage in both the short term and long run.

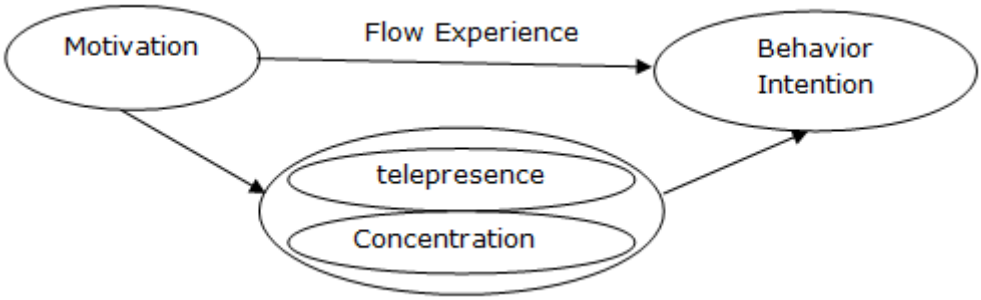

Figure 1. The Proposed Research Model of Flow Experience in China Tourism e-Commerce

2. Conceptual Background and Hypotheses

TAM has received considerable attention of researchers in the information system field over the past decade (Hsu & Lu, 2004), and been adopted to examine usage adoption in the Cyberspace, such as online retail shopping (Childers, Carr, Peck & Carson, 2001) and online games (Hsu & Lu, 2004). We extend TAM to explore tourism e-commerce.

2.1 Customer Motivation For Tourism E-Commerce

Tourism purchase motivation is the internal driving force leading tourism travel customers to make decisions of buying certain travel products, and also the premise of purchase behaviors (Yoon & Uysal, 2005). Although many motivations exist as shopping goals, customers are described as either "problem solvers" or in terms of customers seeking "fun, fantasy, arousal, sensory stimulation, and enjoyment", meaning that motivations are categorized as instrumental and hedonism. The most typologies maintain a basic underlying presence across consumption phenomena (Babin, Darden & Griffen, 1994). As for online shopping motivations, Rohm and Swaminathan (2004) summarized 6 types: Shopping convenience, Information

seeking, Immediate possession, Social interaction, The retail shopping experience and Variety seeking. In summary, a typology based upon these items will thus capture the mix of motives influencing the various types of online customers.

In TAM, perceived usefulness (PU) and perceived ease-of-use (PE) are thought as two determinant motivations for IT usage. PU of the technology refers to the degree to which using the system or technology will improve the user's performance in the workplace, and PE refers to the process leading to the final outcome while usefulness refers to the outcome of the shopping experience. PU and PE are two determinants, but may not exactly reflect the motivation of tourism e-commerce customers. When shopping on the web, the third motivation enjoyment are taken into consideration, and has been reported to affect technology adoption (Igbaria, Parasuraman & Baroudi, 1996). These motivations are found to be related with e-commerce adoption (Childers et al., 2001).

In addition, The global nature of the Internet raises questions about the trust effects across cultures as well. Customer trust is an important aspect of e-commerce, and understanding its antecedents and consequences is a prime concern (Teo & Liu, 2007). As Teo and Liu (2007) research showed, the China e-commerce customer trust is low compared with the united state, it's very necessary to take trust as key motivation in china context. In summary, Combined former studies such as Childers et al. (2001), Teo and Liu (2007) and Rohm and Swaminathan (2004), the psychological motivations of online customers can be analyzed in the form of rational motivation, trust motivation, and personalized service motivation.

This characterization of TAM is consistent with research on tourism e-commerce behavior, and 4 motivations are explored: PE, PU, Enjoyment and Trust, which has supported the presence of both utilitarian and hedonism motivations. While some customers may engage in e-commerce motivated by rational and instrumental purposes, others may enjoy the interactive process, and both factors can ultimately affect their attitude toward e-commerce usage adoption. Therefore, the following hypothesis should be explored to test if the same proposition holds in China tourism e-commerce (Figure 1).

Hypothesis 1: motivations are positively associated with tourism e-commerce users' behavior intention.

H1a: As the usefulness of tourism e-commerce increases, behavior intention will become more positive.

H1b: As the ease of use of tourism e-commerce increases, behavior intention will become more positive.

H1c: As the enjoyment of tourism e-commerce increases, behavior intention will become more positive.

H1d: As the trust of tourism e-commerce vendor increases, behavior intention will become more positive.

2.2 Flow Theory

The optimal experience, also known as flow experience, was originally proposed by Csikszentmihalyi in 1975, and described as "the holistic sensation that people feel when they act with total involvement." A flow experience takes place when people are engaged in their chosen activity, including work (Csikszentmihalyi, 1990). While interviewing certain professional and amateur dancers, chess players, rock climbers, surgeons and many others , people would express a deep devotion to their preferred sort of activity. In return, they could have a special feeling common to many of them, which they could estimate very highly, and call this sort of the holistic experience as flow.

Flow related studies are of both practical and theoretical significance, and have been adapted and accepted within cyberspace to explore users' behavior in recent years. In 1990s' Chen, Wigand, and Nilan (1999) found the interactivity, involvement, and its distinction from everyday activity may provide Web users with an environment to experience flow. From then on, more researches about flow in internet have enriched our knowledge. Finneran and Zhang (2005) found that the original flow studies could simply treat activity and task interchangeably. In computer-mediated environments, the activity was nebulous as "Using the Web" did not by itself demonstrate a clear goal, and tasks were needed to differentiated. Further more, just like any phenomenon, flow is a neutral experience and can result in positive and negative effects in its application. (Woszczynski, Roth & Segars, 2002). The positive effect includes improving satisfaction, enhancing exploring behavior and motivating instinctive interest; while negative effect contains excessive involvement even addiction.

Flow is defined as an optimal, extremely enjoyable experience when an individual engages in an activity with total involvement, concentration and enjoyment, and experiences an intrinsic interest and the sense of time distortion during his/her engagement (Chen, Wigand & Nilan, 2000). Flow has been studied and identified as a possible measure of on-line user experience. Although most studies take flow as one dimension, multiple dimensions seem confirming with its definition better. Csikszentmihalyi (1975, 1993) summarized nine characteristic dimensions:

- clear goals;
- immediate feedback;
- personals kills well suited to given challenges;
- merger of action and awareness;

- concentration on the task at hand;
- a sense of potential control;
- a loss of self-consciousness;
- an altered sense of time; and
- experience which becomes autotelic.

These influential nine dimensions have become important determinants of flow. the diverse "flow models" are based on the slightly different sets of characteristics, including vividness, interactivity, (tele)presence, mediated perception of an environment, control, concentration, enjoyment, curiosity, intrinsic interest and so on (Hoffman & Novak, 1996; Chen et al., 1999; Hsu & Lu, 2004). Among those dimensions, telepresence and interactivity are probably the best terms to characterize the specifics of flow experienced in cyberspace environments (Voiskounsky, 2008).

Since the flow experience itself by definition is a positive and optimal experience, the consequence of its application in the real world does not necessarily generate positive effects, and empirical studies have confirmed that. In practice, flow experience is generally positively associated with customer attitude and behavior intention (Koufaris, 2002), but has negative effect in on-line games context (Hsu & Lu, 2004). Chen (2006) confirmed 3 dimensions labeled as telepresence, time distortion and concentration in flow. We merged the above three dimensions into telepresence and concentration as time distortion and concentration had similar meaning. Therefore, the following hypothesis becomes one of our validation tests to confirm whether this proposition holds in China tourism e-commerce:

Hypothesis 2: flow experience are positively associated with tourism e-commerce users' behavior intention.

H2a: As the telepresence during tourism e-commerce increases, behavior intention will become more positive.

H2b: As the concentration during tourism e-commerce increases, behavior intention will become more positive.

In TAM framework, motivations affect customer attitude and behavior directly, such as PU and PE. As a psychological construct, flow is sort of holistic sensation state experienced by consumers, and may be the new path from motivation to customer attitude and behavior. Empirical studies reveal that flow experience, motivations and customer behavior are generally correlated and flow experience essentially mediates between motivations and customer behavior (Hsu & Lu, 2004; Chen, 2006). As shown in Figure 1, we assume flow experience mediates the relationship between motivations and behavior intention. Therefore, the following

hypothesis becomes one of our validation tests to confirm whether this proposition holds in China tourism e-commerce:

Hypothesis 3: flow experience mediates the motivation and behavior intention.

Hypothesis 3a: telepresence mediates the motivation and behavior intention.

Hypothesis 3b: concentration mediates the motivation and behavior intention.

3. Research Method

3.1 Research Design

The questionnaire design of the flow experience in tourism e-commerce was mainly based on the following steps:

- Preparation of the initial questionnaire. In accordance with survey of CNNCI on frequently used services on the internet, there are 32 service types Among tourism e-business consumption, main consumption contents of customers in tourism e-business websites include search engine, value-added services, information inquiry, forum browse, on-line hotel, and tickets booking etc. Combined with Ma's (2003) and Wu's (2004) study, we chose 4 key tourism e-commerce services representing four major customer activities: information inquiry, tourism forum, tickets and hotel booking, and group tourism booking.

- The preliminary investigation and study. As the scales of the research items were identified from comprehensive former researches, furthermore applicable conditions and objects were different, these scales might not be in line with our tourism e-commerce market. In order to check the quality of the initial questionnaire, we took a small sample of preliminary investigation. The investigation mainly targeted at the friends who often booked online and had a better understanding of tourism products and services. Through reliability test on the initial questionnaire and theoretical analysis, we further modified the questionnaire, and ultimately formed a formal questionnaire.

- The formal investigation and study. We handed out 300 paper-based forms. In addition, 200 respondents filled in the survey electronically. In total, we had 474 responses back. After questionnaire analysis, we found that 42 responses were invalid due to the irregularity with their returns, for instance missing significant number of answers to the questions. Hence, the final number of valid responses was 432, including 145 electronic returns and 287 paper-based responses. The effective survey return rate was 86.4%. Note that during the period of data collection, we talked to or asked respondents first.

Only when he/she indicated that he/she was interested in the study, then a formal survey request, either paper or electronic-based, was issued. As a result, the quality of the conducted survey in light of the completion of individual responses was high.

3.2 Measures

There were three parts in the questionnaire:

- Customer profiles: The first part of the subject was the investigation of the basic information of the respondents, including gender, age, education level and income; these basic information collections of investigators were customer personal attributes variables in analysis of behavior differences.

- The tourism e-commerce information of respondents: Respondents were asked to fill in questions reflecting the personal tourism e-commerce information, such as website browsing purpose, common tourism e-commerce activity, motivation and factors for their tourism e-commerce. this part was to describe China tourism e-commerce market.

- Self-reporting measurement for research variables: A five-point response format was adopted (1 = strongly disagree to 5 = strongly agree).Thinking about their their recent tourism e-commerce engagement, respondents were required to evaluate items. We hoped to explore relationships among psychology factors, motivation, flow experience and behavior intention. The internal reliability of a survey, Cronbach's alpha, was the most common measure of internal consistency of an adopted scale, which should be greater than 0.70 to be considered as a good reliability.

As for motivations, we developed 4 single-items matching the above discussed dimensions. Except the item for trust was revised from Doney and Cannon (1997), other items were chosen from Hsu and Lu (2004) for PU, PE and enjoyment. Furthermore, to develop a scale for measuring behavior intention, we utilized measures of Hsu and Lu (2004), with modifications to suit the setting of tourism e-commerce, and 2 items are adopted.

The word ‘‘flow’’ was used to describe a state of mind sometimes experienced by people who are totally involved in some activity. The scales were developed from Chen (2006), and slightly modified to suit the context of tourism e-commerce. We used telepresence and concentration to construct flow experience, then measured telepresence by 4 items and concentration by 3 items.

As indicated in Table 1, we estimated the measurement model with 13 manifest indicators and 4 latent constructs by CFA to assess the reliability and validity of the construct measures. Our analysis showed that the measurement model met these criteria ($x^2/df=1.942$ CFI=0.89,

NNFI=0.92, and RMSEA=0.065), thus suggesting a good fit for the data. Once again, all item loading on their respective constructs were relatively high and significant (t-value >1.96), thus providing additional evidence of convergent validity. Furthermore, reliability analysis demonstrated a high level of internal consistency among the "motivation" items (alpha=0.76), the "telepresence" items (alpha=0.85), the "concentration" items (alpha=0.82), and the "behavior intention" items (alpha=0.81).

Dimensions	Measurement Items		Std. Loading
Motivation (α=0.76)	M1	It enables me to fulfill the purpose of engaging in tourism e-commerce effectively.	.766
	M2	It is easy for me to become skillful at engaging in tourism e-commerce.	.829
	M3	It is enjoyable to engage in tourism e-commerce.	.764
	M4	This tourism e-commerce vendor is trustworthy.	.907
Telepresence (α=0.85)	T1	I forget about my immediate surroundings when I engage in tourism e-commerce.	.767
	T2	Engaging in tourism e-commerce often makes me forget where I am.	.571
	T3	Time seems to go by very quickly when I engage in tourism e-commerce.	.876
	T4	When I engage in tourism e-commerce, I tend to lose track of time	.784
Concentration (α=0.82)	C1	when engaging in tourism e-commerce, I am so involved in what I am doing.	.867
	C2	when Engaging in tourism e-commerce, I concentrate on my task.	.814
	C3	I fulfill my expectation when Engaging in tourism e-commerce.	.684
Behavioral intentions (α=0.81)	I1	It is worth to engage in tourism e-commerce.	.838

Table 1. measurement items

4. Research Results

4.1 Demographic Profile of Respondents

The profile of the respondents was shown as following: the sample consisted of 267 male and 165 female, the gender was almost mixed (61.8% males; 37.2% female). Most of the respondents were young, 24.1% respondents were in the age of 18–24 years old, 62.3% respondents were in the age of 25–24 years old, 12.7% respondents were in the age of 35–24 years old, and 0.9% respondents were in the age of over 45 years old.

Moreover, a majority of the respondents was well educated. 93.4% of the respondents was higher than junior college (including junior college). In addition, majority of respondents had medium level wage, 39.6% respondents were engaged at a salary of $1000-3000 a month, 35.8% respondents were engaged at a salary of $ 3000-5000 a month.

About half of the respondents said they visited tourism website more than one time per week, 41.5% of the respondents visited tourism websites 1-4 times per week. The dealing were not frequent, 9.4% of respondents reported that they often had deals on internet, 36.1% of respondents sometimes had deals on internet, 45.8% of respondents occasionally had deals on internet, and 8.7% of respondents never had deals on internet.

4.2 Descriptive Analysis

In the study, four tourism e-commerce activities were concerned: information inquiry, tourism forum, tickets and hotel booking, and group tourism booking. Based on the activities chosen percentage, information inquiry (78.2%) led others, tickets and hotel booking (61.2%) followed, 46.3% respondents participated in tourism forum, 17.3% respondents booked group tourism, and 12.3% respondents chose other activities.

Motivation was measured by single item from the following aspects: perceived usefulness, perceived ease-of-use, enjoyment and trust. As for the above four common activities, respondents reported their motivations respectively (seen in Table 2). Take Tickets and hotel booking for example, 47.20% of respondents were motivated by trust, 33.50% of respondents were motivated by perceived easy-of-use, 19.30% of respondents were motivated by perceived usefulness, and 17.50% of respondents were motivated by enjoyment. In it's Chi-square tests, 2 sided Asymp. Sig. of Pearson Chi-square and Likelihood Ratio all were .000, indicating customers' motivation has significant effects on tourism e-commerce activities.

		Motivation			
		PU	PE	Enjoyment	Trust
Activity	Information inquiry	37.80%	42.50%	13.90%	27.20%
	Tourism forum	44.60%	12.90%	26.80%	27.80%
	Tickets and hotel booking	19.30%	33.50%	17.50%	47.20%
	Group tourism booking	45.20%	24.10%	20.10%	28.50%

Table 2. motivations in tourism e-commerce activities

From Table 2, we found that respondents were more motivated by rational purpose than hedonism purpose while PU, PE and trust were almost higher than enjoyment in all the above four activities, and they might compare a lot before consumption. Further more, trust played important role especially in Tickets and hotel booking (47.20%), it was no doubt reputation of tourism website could influence customers' choice and behavior. In addition, perceived ease-of-use was preferred by large percentage of respondents, which seemed to be the top two motivation for tourism e-commerce.

4.3 The Mediation Effect of Flow Experience

For every construct in the study, correlations among measured items were positive and significant in general, therefore we used factor score as the constructs value, and tested hypotheses with correlation and regression like many empirical studies. We tested Hypothesis 1 by regressing behavior intention on motivation using OLS regression (see Table 2, Model l). motivation did predict customer behavior intention (b=0.407, p<0.01), Hypothesis 1 was supported. As correlations among PU, PE, enjoyment and trust were positive and significant, Hypothesis 1a, 1b, 1c and 1d were supported.

As flow experience was measured by two dimensions, Hypothesis 2 was tested by regressing behavior intention on telepresence and concentration separately (see Table 3, Model 2.1 and Model 2.2). Telepresence did improve behavior intention (b=0.281, p<0.01), Hypothesis 2a was supported; concentration did improve behavior intention (b=0.390, p<0.01), Hypothesis 2b was supported, therefore Hypothesis 2 was supported.

We tested Hypotheses 3 and 3a and 3b with a formal three-step procedure proposed by Baron and Kenny (1986), this procedure is conventionally used in organization psychology to investigate the impact of a mediator variable. So we needed to show that flow experience leaded to behavior intention. To unpack the effects of the two components of flow experience, we repeated the mediation analysis with telepresence and concentration as the mediating variable.

Firstly, the predictor variable (motivation) should be significantly related to the outcome variables (behavior intention). As model 1 in Table 3 showed, we regressed behavior intention on motivation, and found t motivation did predict behavior intention (b=0.407, p<0.01), the first criterion of mediation was satisfied for flow experience.

Secondly, the predictor variable (motivation) should be significantly related to the mediator (telepresence). We regressed the mediator (telepresence) on the predictor (motivation). As model 3.2 in Table 3 showed, motivation had significant effects on telepresence, the results showed that motivation had a significant effect on telepresence (b=0.140, p<0.01). We repeated the procedure for concentration, motivation had significant effects on concentration, the results showed that motivation had a significant effect on concentration (b=0.154, p<0.05) as model 4.2 in Table 3 showed. This satisfied the second criterion for mediation.

Lastly, the mediator (telepresence) should affect the outcomes (behavior) with the predictor (motivation) included in the equation. For complete mediation, the direct effect of predictor on outcome variable should be negligible; for partial mediation, the direct effect of predictor on outcome variable should be smaller than the total effect. As model 3.3 in Table 3 demonstrated, telepresence had significant effects on behavior intention, and the direct effect of motivation on behavior (b=0.319, p<0.05) was smaller compared with 0.40. As model 4.3

in table 3 demonstrated concentration had significant effects on behavior intention, and the direct effect of motivation on behavior (b=0.304, p<0.01) was smaller compared with 0.407. Hypothesis 3, 3a and 3b were supported, exactly, they partial mediated the relationships between motivation and behavior intention (See Table 3).

		Model						
		Model 1 (BI)	Model 2.1 (BI)	Model 2.2 (BI)	Model 3.2 (T)	Model 3.3 (BI)	Model 4.2 (C)	Model 4.3 (BI)
(Y) Variable	Motivation	0.407**			.140**	.319*	.154*	.304**
	telepresence		.281**			.188**		
	Concentration			.390**				.271**
	R Square	.317	.224	.186	.153	.401	.147	.435

Note: *p<0.05, **p<0.01

Table 3. mediation effect of telepresence and concentration

5. Conclusions and Implications

In this paper, we focused on understanding the construct flow experience and motivation in the China tourism e-commerce, and then extended previous research findings by outlining how motivation can influence flow experience and behavior intention in cyberspace. This empirical study essentially provides insight into three findings:

- As there surely is a cultural and industry difference, trust is incorporated as an additional motivation, and play it's role together with previous PE, PU and enjoyment. Customers were motivated differently in four major tourism e-commerce activities, specifically customers were motivated primarily by perceived ease-of-use in information inquiry activity, perceived usefulness in tourism forum activity, trust in tickets and hotel booking activity, perceived usefulness in group tourism booking activity. Suggestions for marketer are segmenting tourism e-commerce market and personalizing services based on customers' motivation.

- Two dimensions are confirmed for flow experience in China tourism e-commerce: telepresence and concentration. While flow experience has nine influential characteristic dimensions, it is often taken as single dimension in some previous researches, and different dimensions are developed in other context. This study shows that there is a definite need for local instruments for exploring flow experience in the China tourism e-commerce.

- Our study suggested that motivation was positively related to flow experience, which in turn was positively related to behavior intention. In other words, customers' flow experience partially mediated their motivation and behavior intention. Therefore, marketers should pay much attention to not only customers' motivation but also the

areas such as flow experience that can significantly help improve customers' usage adopt in within cyberspace.

There are some limitations in the study. Firstly, as motivation is not concerned mostly in the study, PE, PU, enjoyment and trust are directly measured with single item while multi-items may indicate their meaning comprehensively, so a bias may exists and results should be treated with caution, deep insight into motivation may be needed. Secondly, there are different type tourism e-commerce activities, customers will be labeled differently as their motivations play roles differently in these activities, so result may be more precise if a specific activity is concerned. Lastly, the study focuses on flow experience, external factors will be studied in the framework to know more about tourism e-commerce.

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