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### **Abstract**

Technology is critical for facilitating experience value co-creation in tourism. Online platforms in particular enable consumers to develop realistic expectations and to cocreate their experience. Limited empirical research has been done to investigate the experience value co-creation process, especially in tourism. This study fills this gap by proposing a cognition-emotion-behavior model. Scenario experiment approach is used to investigate the experience value co-creation process on destination online platforms in the pre-travel stage. Structural equation modeling analysis shows that online platform use has significant effects on destination emotional experience. This, has significant effects on the five dimensions of destination engagement intention. The mediating effect of destination emotional experience on the relationship between platform-use-experience and destination engagement intention is supported. These findings contribute to a better understanding of the experience value co-creation process and theoretical and managerial implications are proposed.

### **Keywords**

experience value co-creation; platform use experience; destination emotional experience; destination engagement intention; pre-travel; China

### **Introduction**

Marketing thinking has been undergoing a significant paradigm shift. The new

service-dominant (S-D) logic paradigm, mainly shaped by Vargo and Lusch (2004), has gained popularity. S-D logic emphasizes service provision processes and value co-creation, rather than outputs (products) and production through value co-creation. Vargo and Lusch (2016, 7) describe value co-creation as ‘one of resource-integrating, reciprocal-service providing actors co-creating value through holistic, meaning-laden experiences in nested and overlapping service ecosystems’. Minkiewicz, Evans and Bridson (2014) argue that what is co-created is experience; value is derived from and inherent in a co-created experience. Neuhofer, Buhalis, Ladkin (2014) reveal that technology is a key parameter to allow for the co-creation of enhanced experiences.

Although the importance of experience view and value co-creation has been recognized widely, limited empirical research has been done to investigate the experience value co-creation process, especially in tourism. Value co-creation literature is still in its infancy in hospitality and tourism with more qualitative and theoretical studies (Chathoth, Ungson, Harrington, and Chan 2016). It is particularly critical to understand the processes and mechanisms of value co-creation (Choi, Ko, and Kim 2016; Kohtamäki and Partanen 2016; Kohtamäki and Rajala 2016; Lambert and Enz 2012). Payne, Storbacka and Frow (2008) developed a process-based value co-creation framework in which encounter processes refer to ‘the processes and practices of interaction and exchange that take place within customer and supplier relationship’ and encounter spans the whole travel process (i.e. pre-travel, on-site and post-travel). While their study provides a conceptual framework to understand the process of value co-creation, it does not test the process empirically, nor explicitly includes the ‘consumer engagement’ construct .

Consumer engagement is viewed as a micro-foundation for value co-creation (Storbacka, Brodie, and Böhmann et al. 2016). Without consumer engagement, value co-creation can't be realized. In the ICT environment and destination context, tourist engagement can be classified into two sub-concepts based on the focal object: platform engagement and destination engagement. Recent publications explore online platform engagement with social media brands, websites and brand communities (Harrigan, Evers, Miles, and Daly 2017; Islam and Rahman 2016; Zhang, Guo, Hu, and Liu 2016). Little has been done to investigate the influence of online platform-use-experience on destination engagement.

Based on the process view of value co-creation and Stimulus-Organism-Response model (Claffey and Brady 2014; Mollen and Wilson 2010), this study integrates the knowledge of three research fields, namely, website quality, destination emotional image and consumer engagement, to propose a cognition-emotion-behavior model of experience value co-creation process. The platform encounter provides environmental stimuli, which leads to cognitive and emotional experiences (i.e. organism states) and then behavioral responses. This model assumes that prospective tourists obtain platform-use-experiences through encounters with destination online platforms. These experiences lead to tourists' emotional experience and then affect their behavior intention of engagement with the destination. Through this process, tourist online experiences and offline behavior intention are integrated. The model is tested empirically in destination online platforms in the pre-travel stage context.

## **Literature review and research hypotheses**

### *Co-creation of experience value*

Co-creation of value has attracted much attention from different theoretical backgrounds.

The research on co-creation and co-production has grown quickly from 5 published articles in 2002 to 64 in 2014 in Scopus (Kohtamäki and Rajala 2016). Nevertheless, there are different conceptualizations and operationalization of value co-creation in the literature (Cossío-Silva, Revilla-Camacho, and Vega-Vázquez, et al. 2016; Saarijärvi, Kannan, and Kuusela 2013).

From the perspective of S-D logic (Vargo and Lusch 2004; 2008), value is ‘a joint function of the actions of the supplier and the customer and always results from co-creation’.

Cossío-Silva et al. (2016, 1622), suggest that ‘is actualized in the customer usage process rather than in the supplier value chain’ (Gummesson 2007, 114), and ‘is always uniquely and phenomenologically determined by the beneficiary’ (Vargo and Lusch 2016, 8). Hence, value is created and experienced through use in specific context, which refers to value-in-use or value-in-context. Under this perspective, customers are not passive receivers of value and operand resources but active value co-creators, determinators and operand resources (Payne et al. 2008; Vargo and Lusch 2016).

Experience and perception are attributed to S-D logic, namely, experience decides what is valuable to customers (Payne et al. 2008; Vargo and Lusch 2008). Tourism research prefers to use the concept of experience value co-creation (Neuhofer and Buhalis 2012; Neuhofer Buhalis and Ladkin 2014, Prebensen and Dahl 2013; Prebensen, Kim, and Uysal 2016, Rihova, Buhalis, Moital and Gouthro 2013). Comparing with other tangible products and services, tourism is experiential in nature. The value tourists pursue is not hotel rooms and attractions themselves, but the experiences that those physical and service environments bring to tourists. Hence, experience is always the focus of research in tourism and tourist experience is considered as a subjective mental state felt by tourists during a service

encounter, which depends on a variety of factors (Otto and Ritchie 1996; Ryan 2002; Uriely 2005). Although the above notions have been accepted widely, the role of tourists in the creation of experience value still lacks attention. S-D logic and value co-creation motivates research of experience value co-creation. Tourist experience research is going through a paradigm shift, by paying more attention to the active role of tourists in co-creating their own experiences, especially through technology. (Cabiddu et al. 2013; Neuhofer and Buhalis 2012; Prebensen and Xie 2017).

S-D logic emphasizes the importance and centrality of process (Vargo and Lusch 2004). The process of value co-creation has been explored by conceptual, qualitative and quantitative methods. Quantitative methods are mainly used to explore the relationships among value co-creation and other constructs, such as customer participation, mastering, purchase intention, customer satisfaction and loyalty, service quality, involvement, resource and time value (Chen and Wang 2016; Choi et al. 2016; Cossío-Silva et al. 2016; Mohd-Any, Winklhofer, and Ennew 2015; Prebensen and Dahl 2013; Prebensen and Xie 2017).

Co-creation value is measured by different ways in these studies, including total experience value (Prebensen and Dahl 2013), participation behavior and citizenship behavior (Cossío-Silva et al. 2016), enjoyment value, economic value and relational value (Chen and Wang 2016), 4Es value (Suntikul and Jachna 2016) and consumer value and brand value (Choi et al. 2016; Prebensen and Xie 2017).

Payne et al. (2008) use qualitative methods to develop a conceptual framework for co-creation of value. It includes three main processes: customer value-creating processes, supplier value-creating processes, and encounter processes. Customer value-creating

processes emphasize the importance of relationship experiences which a customer has over time. According to the information-processing approach and the experiential approach in consumer research, relationship experience includes three elements: cognition, emotion and behavior. Building on these three elements, our study empirically explores the relationship among destination online platform experience (cognition), destination emotional experience (emotion) and destination engagement intention (behavior) from the consumer value-creating processes perspective.

Encounter processes in Payne et al.'s (2008) framework involve a series of two-way interactions between the customers and suppliers during the value-creation process. Neuhofer and Buhalis (2012) expand the value co-creation space from on-site to pre-travel and post-travel stages. This study specifically explores the value co-creation processes in the pre-travel stages in which tourists search destination information and make the trip plan.

#### *Destination online platforms experience*

The internet has become the main information source when tourists search for travel information (Buhalis, and Law, 2008). With the evolution of ICTs from fixed internet to mobile internet, from web 1.0 to 2.0, more and more destinations adopt technology innovations to build up their own official online platforms. These include official websites, official social media pages (e.g. Facebook, Twitter, You-tube, Sina Weibo, Wechat), and mobile applications. On these platforms, destinations can provide travel information, build destination image and brand, and communicate with tourists, from before to after travel (Williams, Inversini; Buhalis, Ferdinand, 2017). Some platforms also provide booking service.

Recently, technology-enabled value co-creation attracts attention from many researchers.

The role of ICT, social media, SoCoMo and their role in the value co-creation process are gradually addressed (Breidbach, and Maglio 2016; Buhalis and Foerste 2015; Cabiddu, et al. 2013; Neuhofer and Buhalis 2012; Ramaswamy and Ozcan 2016; Singaraju, Nguyen, Niininen et al. 2016). Digitalized platforms (e.g. websites and social media) have become the basis of brand offering (Ramaswamy and Gouillart 2010) and brand relations (Ramaswamy and Ozcan 2016). These platforms provide the space for actor engagement and interaction, through which consumers can get personalized products and services, form subjective experiences about the platforms and destinations and co-create value.

The design quality of platforms has a significant influence on platform-use-experience, platform use intention, purchase intention, destination selection and destination image (Chen, Hsu, and Lin 2010; Chung, Lee, and Lee et al. 2015; Hausman and Siekpe 2009; Li, Pan, and Zhang 2009; Pallud and Straub 2014; Rodriguez-Molina, Frías-Jamilena, and Castañeda-García 2015; Zhang, Xu, and Lu et al. 2015). Platform-use experience is the result of value co-creation encounters between tourists and online platforms. By reviewing the literature of website design and its influence on consumer or tourist experience, this paper develops a five-dimension platform experience structure to assess aesthetics, usefulness, ease of use, trust, and interactivity.

Aesthetic experience refers to visual effect or esthetic feeling of interface design. Pallud and Straub (2014) suggest that aesthetics is the most important design criteria for experiential interfaces. Dedeke (2016) argues that the visual appeal is an important representative of website quality. Quality tourism websites usually have attractive and nice-looking interface design in addition to clear interface navigation (Bai, Law, and Wen 2008). Tourists pursue

aesthetic experiences online that they will find at the destination when travelling. Beautiful natural and cultural landscapes always attract a number of tourists. As the online presence space of destinations, online platforms should render beauty to potential tourists. This then inspires tourists' aesthetic imagination of the destination and the desire to visit it. Therefore, aesthetic experience is an important dimension of platform-use experience.

According to the technology acceptance model (TAM), usefulness and ease of use are two factors that influence the adoption of technological innovation (Davis 1989). Usefulness refers to 'the degree to which a person believes that using a particular system would enhance his or her job performance'. Ease of use refers to 'the degree to which a person believes that using a particular system would be free of effort' (van der Heijden 2003, 542). Kim, Chan and Gupta (2007) compared TAM with their proposed VAM (Value-based Adoption Model). They argue that TAM explains much lower the variance of adoption intention, even though both of usefulness and ease of use have significant effect on adoption intention. In their VAM, usefulness is remained and has a significant effect on adoption intention indirectly. Other studies also suggest that usefulness is an important factor to affect adoption (Chung et al. 2015; van der Heijden 2003). In comparison, ease of use is confirmed to be an important factor by fewer researchers (e.g. Mota, Bellini, and Souza, et al. 2016; Pallud and Straub 2014). Usefulness and ease of use reflect the user experience of official online platforms and are involved in the platform-use-experience construct.

Trust is recognized as a key element of success in the online environment (Etemad-Sajadi 2016; Mota et al. 2016). It is a subjective feeling with the facets such as reliability, ability, integrity, benevolence, and honesty (Etemad-Sajadi 2016; Gefen and



Straub 2004). Prior literature suggests that trust affects the use or purchase intention of websites directly or indirectly (Ert, Fleischer, and Magen 2016; Etemad-Sajadi 2016; Mota et al. 2016). Interactivity experience refers to personalized products or service recommendations provided actively or passively, by destination online platforms, as a response to tourist needs and wants. It is realized through the human-machine interactive interface, in which the destinations, tourists and other tourists interact (Stromer-Galley 2004). Trust and interactivity experience also reflect the user experience of official online platforms.

The above five experiences are cognitive in nature and influence users' emotional experience on the platforms. Claffey and Brady's (2014) study proposed a model of consumer engagement, which supported that online experience (cognitive appraisal) affected the intensity of emotion on the virtual environment. Hausman and Siekpe (2009) revealed that the usefulness, informativeness and entertainment of e-commerce website design influence user's flow experience, which was measured by some items including enjoyable. Pallud and Straub (2014) found that website evaluation (including content, ease to use, aesthetics etc.) affected users' attitude towards the website. In their study, attitude included experiential components (i.e. pleasant, enjoyable) and overall judgment. Although they did not explore the attitude or emotion users have towards firms or tourism attractions (e.g. a cultural museum), some researchers investigated the contribution of website design and use towards the generation and development of tourist destination image. Rodríguez-Molina et al. (2015) pointed out that the destination image was more positive when the website provided emotional messages and did not feel overloaded. Li et al. (2009) illustrated that the overall image and affective image changed significantly and positively after online information

search. Affective image refers to the feelings or emotional responses toward the various features of a destination (Zhang, Fu, and Cai et al. 2014). Building on the above discussion, the following hypothesis is formulated:

H1: Online platform experience (a: aesthetics, b: usefulness, c: ease of use, d: trust, e: interactivity) positively affects tourists' emotional experience about the destination.

### *Destination emotional experience*

In the process-based value co-creation framework developed by Payne et al. (2008), the experience comprises of cognition, emotion and behavior. These three elements of relationship experience have broader meaning than traditional cognition, affect and behavior in the information-processing perspective. Emotion extends beyond affect, which just emphasizes attitudes and preferences. Behavior also extends beyond purchase intention and purchase behavior. Hence, the concept of destination emotional experience replaces affect, and behavior is extended to destination engagement behavior. This can better reflect the co-creation and interactivity. Emotional experience of destination is therefore tourists' feeling and emotional response to a destination after the value co-creation encounters.

There is a tendency in consumer behavior that the experiential view of consumption is absorbing more attention (Payne et al. 2008). Besides utilitarian value, consumer also pursue emotional and symbolic and other non-utilitarian value (Hirschman and Holbrook 1982; Holbrook and Hirschman 1982). For experiential products, such as tourism, hedonic consumption is fundamental as tourists always experience fantasies, feelings, and fun (Holbrook and Hirschman 1982). The emotions, mood and feeling of tourists are more important in tourist experience and value co-creation process. Tourist hedonic experience is

remembered more easily and then becomes memorable tourist experience (Kim, Ritchie, and Tung 2010).

Emotion is a prominent factor that affects human's behavior. Attitude theory is used widely in human behavior research. Cognition, affection, and conation constitute the three main components of attitude. Research has proved that cognitive and affective components significantly influence conative component (i.e. behavior intention) and real behavior. There is limited quantitative research to explore the effect of affect or emotion on behavior in value co-creation literature. In a study to investigate luxury brand value co-creation processes, Chio et al. (2016) identified the emotional attributes besides cognitive attributes of value co-creation encounter. They confirmed the importance of emotional experience in the value co-creation processes. Chen et al. (2016) explored airline value co-creation processes through travelers' encounter with online check-in systems. The results found that enjoyable value significantly influenced system satisfaction, company satisfaction and consumer loyalty. In website design and destination image research, affect or emotion also is an important factor to influence behavior intention (Hausman and Siekpe 2009; Pallud and Straub 2014; Zhang et al. 2014). Therefore, the following hypothesis is developed:

H2: Destination emotional experience positively affects tourists' destination engagement intentions (a: cooperation, b: feedback, c: compliance, d: helping other customers, e: spreading positive WOM behaviors).

#### *Tourists' destination engagement*

Engagement is considered as a micro-foundation for value co-creation (Storbacka, Brodie, and Böhmann et al. 2016). Value co-creation is a macro concept that is difficult to

observe empirically. Value can't be co-created without actor engagement and resource integration (Fehrer, Smith, and Brodie 2015; Storbacka et al. 2016). The concept of customer engagement is also attracting increasing attention from tourism academics and practitioners with the development of the internet and ICTs. Tourist engagement with tourism destinations, through a variety of channels or platforms, enhances the relationship between tourists and destinations and builds loyalty beyond the transaction.

There are different views about the conceptualization of consumer engagement. Generally, two approaches can be concluded: uni-dimensional approach with behavioral dimension as dominator, and multi-dimensional approach or psychological and behavioral approach. Behavioral approach views consumer engagement as 'customers' behavioral manifestations toward a brand or firm beyond purchase, including: word-of-mouth activity, recommendations, customer-to-customer interactions, blogging, writing reviews, and other similar activities' (Marketing Science Institute 2010, 4). While behavioral approach is beneficial to capture the engagement manifestations (Bijmolt, Leeflang, and Block et al. 2010; Jaakkola and Alexander 2014; Verhoef, Reinartz, and Krafft 2010), it is criticized to lack a conceptual basis and an understanding of factors underlying behavior (So, King, and Sparks et al. 2016).

The multi-dimensional approach reflects both psychological and behavioral aspects of consumer engagement. Brodie et al. (2011) defines consumer engagement as 'a psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships. It exists as a dynamic, iterative process within service relationships that cocreate value. It is a multidimensional concept

subject to context- and/or stakeholder-specific expression of relevant cognitive, emotional and/or behavioral dimensions' (Brodie et al. 2011, 260). This definition emphasizes consumer engagement as an indispensable part of value co-creation process, which includes both psychological and behavioral dimensions. This approach is helpful to understand the psychological connection behind behavior and identify the truly engagement consumers (So et al. 2016).

Based on the view of Brodie et al. (2011) on consumer engagement, Storbacka et al. (2016) extends consumer engagement to actor engagement. They define actor engagement as 'both the disposition of actors to engage, and the activity of engaging in an interactive process of resource integration within the institutional context provided by a service ecosystem' (Storbacka et al. 2016, 3009). The disposition of actors to engage is different from a psychological state (of humans), but a central condition for engagement activity. Engagement platform is also a condition or space on which engagement happens. Effective co-creation is dependent on a platform for actors to engage (Frow, Nenonen, Payne, and Storbacka 2015). Digital applications, such as websites, mobile applications and social media, are preferred engagement platforms.

Although multidimensional views get more support, how to measure engagement is still not consensual. So et al. (2014) developed a scale of consumer engagement with tourism brands including five dimensions: identification, attention, enthusiasm, absorption and interaction. Harrigan et al. (2017) tested this scale in a new context and suggested a three-factor scale including identification, absorption and interaction, which reflect the cognitive, emotional and behavioral dimensions respectively. While some researchers

measure consumer engagement based on a multidimensional view, others measure it from behavioral perspectives. Taheri et al. (2014) developed a formative uni-dimensional visitor engagement scale to measure cultural tourist engagement with museums from a behavioral perspective. Jaakkola and Alexander (2014) identified four types of customer engagement behaviors: augmenting, co-developing, influencing and mobilizing behaviors. Storbacka et al. (2016) identified four engagement properties: co-production vs. value-in-use activities, relational properties, informational properties and temporal properties. Verleye, Gemmel, and Rangarajan (2014) proposed a consumer engagement behavior scale, including five dimensions: cooperation, feedback, compliance, helping other customers and spreading positive WOM behaviors. These dimensions are behavioral aspects of consumer engagement.

This study uses the operationalization method of Verleye et al. (2014) because: (1) the framework (see fig.1) is a cognition-emotion-behavior model, in which behavior is defined as tourist engagement behavior; (2) these five dimensions reflect tourists' voluntary, discretionary behaviors. Therefore, it is more suitable for the research context. However, this study doesn't measure the behavior itself. Instead the behavior intention of engagement is measured, because the prospective tourists have no actual on-site engagement behaviors (e.g. cooperation). According to the theory of reasoned action (TRA) (Fishbein and Ajzen 1975), behavioral intention is a proxy to predict the actual engagement. Storbacka et al. (2016) argue that the disposition of tourists to engage with destination is a central condition for engagement activity. Therefore, the tourists' intention of engagement with the destination in pre-travel phase determines the probability of actual engagement behavior on-site.

Prior literature shows that the quality of website design indirectly influences behavior intention through mediating variables such as attitude (Dedeke 2016; Pallud and Straub 2014). Therefore, the experience of tourists through interaction with destinations on their digital platforms may indirectly influence the intention to conduct engagement behaviors. The following hypothesis is proposed:

H3: Tourists' online platform experience indirectly affects tourists' destination engagement intention, through the mediating effect of destination emotional experience.

Insert Fig.1 about here

## **Methodology**

This study chooses two cities in China as sample destinations: Nanjing and Hong Kong. Their official online platforms (e.g. www website, Sina Weibo, Wechat) are chosen as value co-creation encounter platforms. According to China Internet Network Information Center (CNNIC), the number of Chinese netizen has grown up to 731 million in December 2016. Internet penetration grows from 28.9% in Dec. 2009 to 53.2% in Dec. 2016, higher 3.1% than the global average. The size of mobile netizen reached 695 million, occupying 95.1% of all netizen. Such a massive netizen and mobile netizen size inspires the rapid growth of digital marketing and e-commerce. A total of 4.82 million websites were registered in China in Dec. 2016. Almost all capital city destinations and 5A scenic areas have built their own official websites, Apps, official Weibo (equivalent to Twitter) homepage in Sina website, and Wechat public account. Wechat is a mobile application that mainly run in smartphone; it is very

popular and preferred due to the big user size, active use and ease to use.. Its daily active users have reached up to 768 million in 2016 (Tencent Group Holdings Ltd, in Sep. 2016).

The China's 'smart tourism destination' initiative provides a strong impetus to destination digital construction. Nanjing city is one of the first pilot smart tourism destinations. Its digital marketing platforms were developed, better designed than many other city destinations in China mainland. As an international tourism destination, Hong Kong has developed high quality digital marketing platforms for both international and mainland tourist market.

In China, tourism has been experiencing a rapid transformation from groups and tours following the yellow umbrella to individualized, technology-enabled tourism that builds experiences. The advance of ICTs and digital marketing radically change the behavior pattern of Chinese tourists. The Internet has become the main informational, entertainment and relational space for Chinese tourists. Tourists are becoming accustomed to searching for tourism information, booking products and sharing travel experiences on a variety of online platforms. Therefore, tourist experience augment relies on the interaction and co-creation between individual travelers and tourist firms and destinations through online platforms.

#### *Scenario experiment*

This study uses a mixed method approach to combine scenario experiment and post-experiment survey. Firstly, scenario experiment is an important research method in service marketing. It makes complex research variables more easily manipulated and can reduce costs (Bitner 1990). In addition, compared to consumers' recall of experience, the scenario experiment method can avoid the remember bias as time passes (Smith and Bolton 1998). Scenario experiment method is used in tourism research increasingly as an efficient



method to study tourist behavior on the internet. For example, Li et al. (2009) used a scenario experiment method to investigate the effect of online information search on image development. A post-experiment questionnaire measurement was also used in this study to get the data of three main constructs: platform-use-experience, destination emotional experience and tourist destination engagement intention. These measurements are structural and quantitative so that the conceptual model proposed can be tested quantitatively.

The experiment task of this study was ‘Your holiday is coming. You intend to take a trip to Nanjing (or Hong Kong). Please make a three-day long independent travel plan. You need to identify the selected travel route and information about transportation, accommodation, restaurants, time and price on a specific digital platform such as the Nanjing Tour Net: Official Net of Nanjing Municipal Travel Bureau, <http://www.nju.gov.cn/>. You can only search information and plan your trip on this assigned platform’. The duration of experiment is set as 30 minutes. Total 11 platforms were used in this study: official fixed website, official mobile website, official APP, official Weibo in PC, official Weibo in mobile, Wechat for Nanjing and Hong Kong respectively. Because the APP for Hong Kong could not be connected during the experiment, this experiment group was canceled. Selected platforms almost cover all official digital platforms for the two destinations in the China mainland market.

In order to control the irrelevant variables, undergraduate students were recruited to participate in the experiment because they are relatively homogeneous group and heavy user of internet (Pallud and Straub 2014). The experiment was conducted in a computer lab at a Chinese university. Participants were asked to take their own smartphones to access mobile

internet. The experiment included 11 groups with a total of 523 students. Before the experiment, the assistant checked the desktops and internet and provided the official website address, official Weibo link, official Wechat QR code, APP download path, pencil and paper on the table. At the start of the experiment, the assistant explained the experiment scenario to the students and asked them to carry out the scenario task independently. After the experiment, students were required to finish the questionnaire. The experiment lasted for two weeks in Sep. 2016. A total of 495 valid out of 523 completed questionnaires were received; 28 were excluded for incomplete or same answer for all items.

#### *The measurement of constructs*

In order to test the proposed hypotheses and conceptual model, this study measured three constructs: platform-use-experience, destination emotional experience and destination engagement intention. A modified scale of platform-use-experience from previous research (Dedeke 2016; Etemad-Sajadi 2016; Kim et al. 2007; Pallud and Straub 2014) was used to measure the five dimensions identified for platform-use-experience. The twenty-item measures included four items for aesthetic experience, four items for usefulness, three items for ease of use, four items for trust, and five items for interactivity. Destination emotional experience was assessed by items adapted from Baloglu and McCleary (1999), Hausman and Siekpe (2009), Pallud and Straub (2014), including two-items. The consumer engagement behavior scales in Verleye et al. (2014) were adapted to measure tourist destination engagement intention. The sixteen-item measure included four items for compliance, three items for cooperation, feedback, helping others and positive word of mouth respectively. The items were adapted from existing literature in English (see table 2). To reduce semantic

disparity due to cultural and linguistic differences, double-translation approach was used to avoid the inconsistency of meaning and revise the confusing wording and phrases. The scales were then pre-tested with 10 graduate students to improve the clarity and relevance of questions. All items were measured on five-point Likert scales (1 = extremely disagree, 5 = extremely agree). Demographic information and Internet behavior were also assessed at the end of the questionnaire (see table 1). As for the demographics 68.7% of the respondents was female and 58.8% of the respondents had independent travel experience. Most of the student had never been to the assigned destination (Nanjing or Hong Kong) before the experiment, so they were not familiar with them (M=2.65).

Insert Tab.1 about here

## **Results**

### *The measurement model tests*

Following the two-step approach suggested by Anderson and Gerbing (1992), we first examined the measurement model and then tested the structural model. The measurement model test is further divided into two steps. Firstly, the measurement scales of multidimensional constructs (i.e. platform-use-experience and destination engagement intention) were estimated separately by confirmatory factor analysis (CFA) to evaluate the validity of each instrument. Five dimension structures, including 20 items of platform-use-experience, were examined by CFA. The goodness of fit of the model were  $\chi^2=853.59$ ,  $df=161$ ,  $p=0.000$ ,  $\chi^2/df=5.30$ ,  $GFI=0.86$ ,  $IFI=0.87$ ,  $CFI=0.87$ ,  $RMSEA=0.09$ .

Most of the fit index did not meet the critical value, indicating that the model didn't perform well (e.g. GFI, NFI, CFI and incremental fit index (IFI) are lower than 0.90, RMSEA is over 0.08). After deleting the items with low factor loading value (lower than 0.6) and with too high factor loading value (higher than 0.95), the new model was retested and the goodness of fit was proved ( $\chi^2=301.70$ ,  $df=81$ ,  $p=0.000$ ,  $\chi^2/df=3.73$ , GFI=0.93, IFI=0.94, CFI=0.94, RMSEA=0.07). The deleted items are 'the design of the platform is creative' in aesthetics, 'it is convenient to access the platform' in ease of use, 'the platform allows me to interact with it', 'the platform allows to easily find the desired information without having to call the destination', 'the platform allows to easily find the desired information without having to write an email to the destination' in interactivity. Then, five dimension structures including 16 items of tourist destination engagement intention were examined by CFA. The goodness of fit of the model were  $\chi^2=317.69$ ,  $df=95$ ,  $p=0.000$ ,  $\chi^2/df=3.34$ , GFI=0.92, IFI=0.94, CFI=0.94, RMSEA=0.07. Though the model was proved to have satisfied goodness of fit, the average variance extracted (AVE) of two constructs (i.e. feedback, helping others) were lower than the threshold value 0.5. Two items with lower factor loading value were deleted. The revised model was retested and the goodness of fit is proved ( $\chi^2=301.70$ ,  $df=81$ ,  $p=0.000$ ,  $\chi^2/df=3.73$ , GFI=0.93, IFI=0.94, CFI=0.94, RMSEA=0.07). The AVEs of all five constructs were higher than 0.5.

Secondly, the total measurement model was estimated by CFA before the structural equation modeling (SEM). The total measurement model includes 11 constructs, namely, aesthetics, usefulness, ease of use, trust, interactivity, emotional experience, compliance, cooperation, feedback, helping others and positive word of mouth. The goodness of fit of the

total model was good with  $\chi^2=696.21$ ,  $df=379$ ,  $p=0.000$ ,  $\chi^2/df=1.84$ ,  $GFI=0.92$ ,  $IFI=0.96$ ,  $CFI=0.96$ ,  $RMSEA=0.04$ . Table 2 shows the composite reliability (CR) and average variance extracted (AVE) of the 11 constructs in the total measurement model. The composite reliability of latent variables is between 0.72 and 0.95, which is higher than the suggested minimum critical value 0.70 (Dillon and Goldstein 1984), meaning that the scales used here have good internal consistency. The average variance extracted is between 0.50 and 0.72, except one latent variable (i.e. ease of use) with 0.45, which is lower than the suggested minimum critical value 0.50 (Dillon and Goldstein 1984; Fornell and Larcker 1981). Some of the extant website design and information system (IS) literature has found that ease of use is less powerful in predicting the adoption intention, and is not included in their model (Chung et al. 2015; Kim et al. 2007; Saade and Bahli 2005; Koo and Chung 2014), so we excluded the construct from our model. AVE of all the remained latent variables are higher than 0.5 and all standardized factor loading are higher than 0.6, except one item which is also significant at 0.001 level, meaning all the variables have good convergent validity (Hair, Tatham, and Anderson et al. 2006). Table 3 shows that AVE of all the latent variables are larger than the square of corresponding correlation coefficients, indicating the discriminant validity is confirmed.

Insert Tab.2 about here

Insert Tab.3 about here

*Hypotheses tests*

The structural relationships between the latent variables were examined using covariance structure analysis. The goodness of fit of the model are  $\chi^2=744.53$ ,  $df=355$ ,  $p=0.000$ ,  $\chi^2/df=2.10$ ,  $GFI=0.91$ ,  $IFI=0.95$ ,  $CFI=0.95$ ,  $RMSEA=0.05$ , indicating that the fitting level of the hypothesis model and the data is satisfactory. Table 4 presents the results of the structural equation model. Two of four paths from platform-use-experience to destination emotional experience are significant, supporting H1a and H1d. The independent variable accounts for 18% variance in destination emotional experience. Usefulness and interactivity, however, do not significantly contribute to destination emotional experience, hence, H1b and H1e are not supported. Furthermore, all paths from destination emotional experience to tourist destination engagement intention are significant, which supports H2a, H2b, H2c, H2d and H3e. Destination emotional experience accounts for 19% of the variance in cooperation, 18% in feedback, and 14% in compliance, 18% of the variance in helping other tourists, and 37% of the variance in positive word-of-mouth.

In order to test the mediating effect of destination emotional experience on the relationship between platform-use-experience and destination engagement intention, a three-step mediated regression approach, recommended by Baron and Kenny (1986), was used. Usefulness and interactivity do not significantly influence emotional experience. This means that emotional experience does not mediate the relation between usefulness and engagement intention and between interactivity and engagement intention. The remained 10 paths are tested and the results are shown in Table 5. When emotional experience is controlled, the path coefficients of aesthetics-feedback and trust-feedback become not significant. The other eight paths are significant; just the strength of the relationships are

weakened due to the mediation effect of emotional experience. Based on these findings, it is concluded that destination emotional experience serves as a partial or full mediator of the ten links. Among them, eight links (i.e. aesthetics-emotional experience-compliance, aesthetics-emotional experience-cooperation, aesthetics-emotional experience-helping other tourists, aesthetics-emotional experience-positive WOA, trust-emotional experience-compliance, trust-emotional experience-cooperation, trust-emotional experience-helping other tourists, trust-emotional experience-positive WOA) are partially mediating paths. The other two links (i.e. aesthetics-emotional experience-feedback and trust-emotional experience-feedback) are fully mediating paths.

Insert Tab.4 about here

Insert Tab.5 about here

## **Discussion**

The results provide evidence for the research hypotheses. Firstly, aesthetics and trust have significant effects on destination emotional experience (H1a and H1d). Aesthetics is an important attribute in website design. Fascinating and pleasing platform design not only makes users like the platform itself but also like the destination represented by the platform due to the halo effect and attractive projected image information. This is especially true for experiential platforms such as those for tourist destinations. Experience is the essence of tourism. Potential tourists who have not been to a place have no on-site visit experience and are unfamiliar with the destination. Through the destination official online platform, they can

get their first impression about the destination. Fascinating platforms usually inspire user's emotional response to the platform and destination. High aesthetics evaluation on the platform design can lead to strong emotional experience on the destination. Tourists feel that visiting the destination will be pleasurable and exciting.

Trust is also an important factor to influence user behavior in the virtual world. Due to lack of physical contact, it is difficult for individuals to judge the truthfulness of people and organizations in the virtual world as well as the information provided online. Therefore, those platforms and destinations which can make users feel trust receive favor. Prior research (Mota et al. 2016) found that trust in organization had a fully positive influence on the use of organization websites, whereas trust in internet had no such significant influence. This study extends prior research and argues that trust in platforms has positive influence on user emotional evaluation of the destination.

Two facets of platform-use-experience (i.e. usefulness and interactivity) were not confirmed to have a significant influence on tourist emotional experience on destination (H1b and H1e). Usefulness is considered as an important factor to influence technology adoption in technology acceptance model (TAM). Prior studies supported that website usefulness has a significant effect on website continued usage intention, and influence intention to visit destination (Chung et al. 2015). But no study has tested the influence of platform usefulness on tourist emotional evaluation of destinations. Our study tested this but found no significant influence. A possible explanation for this result is that usefulness is more functional and related to task completion. If the platform is useful to complete the assigned task, it will be used continuously. But it does not lead to user emotional response to the destination directly.



Maybe there exist mediating variables between them, such as cognitive evaluation on the destination and platform engagement.

In addition, this study indicates that interactivity has a positive effect on tourist emotional experience on destination, although it is not significant at 0.05 level ( $\beta=0.17$ ). Prior studies has found that online real-time interactivity significantly increases the website patronage intention (Etemad-Sajadi, 2016). Little research has been done to explore the effect of interactivity on destination emotional experience. Zhang et al. (2016) pointed out that social interaction had no significant effect on the functional value of company social network, but had significant effect on hedonic value. Therefore, a possible explanation of this result is that the experiment design asked the respondents to complete a task of planning a trip, which may lead to task orientation. It is difficult for the respondents to develop an emotional bond with the platform and destination through task orientation interaction. Another reason maybe that the interactive activities in our experiments were based mostly on human-machine interaction, which lack the emotion element in human-human interaction.

Nevertheless, prior studies also found that website design and information search increase destination affective image (Li et al. 2009). This study supports these arguments because two important facets of platform-use-experience (i.e. aesthetics and trust) have significant influence on destination emotional experience. This indicates that optimal platform-use-experience increases the positive emotion towards destinations.

Secondly, this study confirms that destination emotional experience has a strong influence on destination engagement intention (H2a-H2e). High destination evaluation leads to high intention of cooperation, compliance, feedback, helping others and positive WOM.

Prior studies revealed that cultural motivation, serious leisure, self-connection, object-based authenticity (Bryce, Curran, and O'Gorman et al. 2015), prior knowledge, recreational motivation and cultural capital (Taheri, Jafari, and O'Gorman 2014) had significant influence on visit engagement. This study extends previous research to explore the effect of destination emotional experience on destination engagement intention and confirms their relationship. Although the measurement scales of engagement are different, all these studies use behavior method, whilst visitor engagement is also considered as formative construct.

Thirdly, the mediating effects of destination emotional experience on the relationship between platform-use-experience and destination engagement intention were investigated. The results support the mediating effect. Destination emotional experience mediates the relationships between aesthetics, trust and feedback fully, and mediates other relationships partially. However, when destination emotional experience is in control, the path coefficients with partial mediation between platform experience and destination engagement intention decrease less. This suggests that there is a direct influence of platform-use-experience on destination engagement intention.

### **Conclusion and implications**

The purpose of this study is to investigate the process of co-creation of experience value in destination official-online-platform encounters in the pre-travel stage context. It proposed a cognitive-emotion-behavior model and empirically tested the relationships among platform-use-experience, destination emotional experience and destination engagement intention as well as the mediating effect of destination emotional experience by using the structural equation model and regression approach. The results indicate that

platform-use-experience increases tourist emotional evaluation of a destination, and then increases tourist engagement intention with the destination. The cognitive-emotion-behavior model is confirmed. In addition, destination emotional experience is found to mediate the relationships between platform-use-experience facets and destination engagement intention facets fully or partially. The following paragraphs highlight the theoretical and managerial implications of this research.

### *Theoretical implications*

This study makes contributions to the existing probes in value co-creation process. Firstly, S-D logic emphasizes the process of service provision and value co-creation. A process-based value co-creation conceptual framework has been proposed to address the customer process, supplier process and encounter process and their relationships (Payne et al., 2008). But little has been done to explore the value co-creation process empirically (e.g. Cabiddu et al. 2013; Reypens, Lievens, and Blazevic 2016). There has been no study to integrate the constructs of platform-use-experience, destination emotional experience and destination engagement into one model in order to explore the mechanism of interaction among them from a value co-creation perspective. This research proposes a cognition-emotion-behavior model of experience value co-creation process by integrating these constructs. Empirical investigation supports this model in destination official-online-platform encounters in the pre-travel stage context. platform-use-experience (cognition), destination emotional experience (emotion) and destination engagement intention (behavior) are proved as core concepts in tourist-destination value co-creation process.

Secondly, the model proposed in this study bridges the online platform and destination

from potential tourist perspective. Prior website design literature indicates that website evaluation influences website attitude, then influences website use intention and then visit intention (Pallud and Straub 2014). The proposed model supports that platform evaluation influences behavior intention beyond platform itself; that is to extend to the organization behind the platform. The influenced behavior intention is also beyond visit intention to engagement intention. Actor engagement is the micro-foundation of value co-creation (Storbacka et al. 2016). Therefore, engagement should be a core component in value co-creation model. The encounter between tourists and destinations on official platforms may lead to two kinds of engagement: platform engagement and destination engagement. The latter is the important goal of destination marketing. The model makes an important contribution for understanding how platform-use-experience influences destination engagement intention, which is viewed as a proxy for actual engagement behavior.

Thirdly, this study supports the experience value co-creation in pre-travel stage and the role of potential tourists in the experience value co-creation process. Destination official websites, Weibo, Wechat and APP platforms provide digital encounters for tourist-destination interaction. Through these platforms, potential tourists can actively participate in experience co-creation process. Advanced ICTs promote the tourist-destination interaction in all travel process. The co-creation space is extended from on-site to the pre-travel and post-travel stages. Experience value co-creation in the pre-travel stage promotes or constrains the on-site value co-creation processes by the participation positivity of tourists. As operant resource, tourists with different knowledge and skills have different platform-use experience and destination engagement intention. This further supports the premise that value is always

uniquely and phenomenologically determined by the beneficiary (Vargo and Lysch 2016).

### *Managerial implications*

In ICT and S-D logic era, tourist engagement is the foundation of value co-creation and the goal of destination marketing. Destinations should fully use ICTs and digital platforms to improve the level of tourist destination engagement intention, which includes compliance, cooperation, feedback, helping other tourists and positive WOM. Because destination emotional experience influences strongly these facets of destination engagement intention, destinations should motivate tourists' positive emotional response through high quality platform design and management.

Platform-use-experience is an important starting point in the value co-creation. Platform design quality influences strongly user experience and subsequent behavior. Aesthetic and trustful platforms inspire user emotional response and engagement intention with destinations. Therefore, destinations should continuously improve the quality of their platforms. Esthetic platform design with fascinating color, images and layout is a basic factor to attract visit's attention and produce good first impression for both the platform and destination. More importantly, trust in the platform influences tourist emotional experience on destination. Hence, destination should improve the trustiness of platforms, including information reliability, user privacy and personal information protection and online pay secure.

It is evident that the emotional experience initiated from platform interaction is a bridge to connect tourists' platform experience and destination engagement. Affective component in attitude theory and affective image in destination image theory are widely recognized as important factors influencing behavior. In order to inspire potential tourists' positive

emotional response destination platforms should provide aesthetic and trustful online interaction environments. These two dimensions of platform-use-experience are more important to initiate emotional response than perceived usefulness, perceived ease of use and even interactivity. Emotional messages in the platforms are also helpful to improve destination affective image (Rodríguez-Molina et al. 2015; Zhang et al. 2015).

### *Limitations and future research*

The limitations of this paper are listed here. Firstly, this study just explores the value co-creation in the pre-travel stage context. More research should be done to empirically investigate the value co-creation process during the on-site and post-travel stages. Secondly, this study uses almost all the official online platforms of the two selected destinations (i.e. Nanjing and Hong Kong) to test the proposed model. Generalization requires further verification in other destinations and other samples. In the proposed model, usefulness and interactivity have no significant effect on destination emotional experience, which also need further testing. Cross-cultural research can be conducted to expand generalization. Thirdly, ease of use is excluded in the final structural model due to measurement issue. Future research needs to improve the measurement scale and further test its effect on destination emotional experience. Fourthly, there are different conceptualizations and measures of engagement. This study measures destination engagement intention from behavior perspective; future studies can try other measures to triangulate the model. Fifthly, this study just explores the relationships among platform-use-experience, destination emotional experience and destination engagement intention. The model can be expanded by taking into

account the effect of platform-use-experience on platform engagement and other behavior variables. Future research can also investigate these relationships in a more comprehensive or a high order model. In addition, there are different viewpoints about the sequence of three attitude components. While the sequence of cognition-emotion-behavior intention is accepted widely, it is also worthwhile to investigate value co-creation process from different order, such as emotion-behavior-cognition. Besides attitude theory, many other social-psychological theories such as self-determination theory should be suitable to explain value co-creation process. Lastly, this study doesn't compare the model based on different type of platforms, such as website vs social media, PC platform vs mobile platform. Due to the task orientation of our experiment design, some platforms may have high task-technology fit than other platforms. Further research needs to explore the difference and the influence of task-technology fit for each platform use-experience.

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## Tables

**Table 1 Demographic and behavior characteristics (n=495)**

Variable	Level	N (%)	Variable	M(SD)
Sex	Male	155(31.3)	Familiarity with internet	3.69(0.81)
	Female	338(68.7)	Familiarity with assigned destination	2.65(0.87)
Visit experience to assigned destination	Yes	150(30.3)	Network connection speed	3.29(0.97)
	No	345(69.7)		
Independent travel experience	Yes	291(58.8)		
	No	204(41.2)		

Note: M= mean; SD=standard deviation

**Table 2 Composite reliability (CR), Factor loading, and Average variance extracted (AVE)**

<b>Constructs</b>	<b>Items</b>	<b>Factor loading</b>	<b>CR</b>	<b>AVE</b>
Aesthetics	The design of the platform looks pleasant	0.79	0.92	0.69
	The layout of the platform is fascinating	0.82		
	The design of the platform looks aesthetic	0.88		
Usefulness	Using the platform enables me to accomplish tasks more quickly	0.85	0.95	0.72
	Using the platform enhances my task effectiveness	0.87		
	Using the platform makes it easier to do my task	0.86		
	The platform is useful in performing my task	0.81		
Ease of use*	It is easy to use the platform	0.57	0.72	0.45
	It is easy to get the platform to do what I want it to do	0.75		
Trust	I trust the reliability of information found on this platform	0.75	0.90	0.55
	I trust this platform to keep personal information secure	0.74		
	The platform looks trustworthy	0.74		
	I trust the information given by the platform	0.75		
Interactivity	The platform has interactive features to meet my needs	0.54	0.76	0.50
	The interaction with the platform is efficient	0.84		
Emotional experience	Travel to the destination will make me feel pleasant	0.83	0.88	0.67
	Travel to the destination will make me excited	0.80		
Compliance	I will perform all required tasks	0.83	0.94	0.69
	I will help the destination with those things that are required	0.79		
	I will adequately complete all expected behaviors	0.79		

	I will fulfill my responsibilities to the destination	0.90		
Cooperation	I will cooperate with the service personnel of the destination	0.60	0.85	0.52
	I will try to help the service provider to deliver the best possible treatment	0.81		
Feedback	I will do things to make the personnel's job easier	0.74		
	I will let this destination know of ways to better serve my needs	0.69	0.80	0.54
Help other tourists	I will inform destination personnel if I experience a problem	0.77		
	I will assist other tourists in finding their way within the destination	0.77	0.83	0.59
Positive word of mouth	I will explain to other tourists which services are provided by the destination	0.76		
	I will recommend this destination to people interested	0.74	0.88	0.59
	I will recommend this destination to family and friends	0.82		
	I will say positive things about this destination to others	0.74		

\*Construct that is deleted in the final analysis due to low AVE.

**Table 3 Discriminant validity: Latent variable correlations with AVE**

Constructs	PE1	PE2	PE3	PE4	EE	DE1	DE2	DE3	DE4	DE5
Aesthetics (PE1)	<b>0.69</b>									
Usefulness (PE2)	0.35	<b>0.72</b>								
Trust (PE3)	0.33	0.27	<b>0.55</b>							
Interactivity (PE4)	0.48	0.82	0.37	<b>0.50</b>						
Emotional experience (EE)	0.27	0.27	0.28	0.29	<b>0.67</b>					
Compliance (DE1)	0.17	0.11	0.26	0.13	0.30	<b>0.69</b>				
Cooperation (DE2)	0.28	0.16	0.30	0.32	0.35	0.48	<b>0.52</b>			
Feedback (DE3)	0.16	0.17	0.18	0.29	0.38	0.56	0.49	<b>0.54</b>		
Help other tourists (DE4)	0.26	0.08	0.19	0.20	0.36	0.39	0.62	0.47	<b>0.59</b>	
Positive word of mouth (DE5)	0.28	0.19	0.30	0.30	0.53	0.54	0.53	0.55	0.75	<b>0.59</b>

Note: Diagonal elements show average variance extracted (AVE).

**Table 4 Result of hypotheses tests**

<b>Hypothesis</b>	<b>Standardized Coefficient</b>	<b>t-value</b>	<b>Result</b>
H1a	0.15*	2.364	Supported
H1b	0.07	0.586	Not supported
H1c	-	-	-
H1d	0.21***	3.515	Supported
H1e	0.14	1.005	Not supported
H2a	0.43***	6.206	Supported
H2b	0.42***	4.669	Supported
H2c	0.37***	6.487	Supported
H2d	0.42***	6.603	Supported
H2e	0.61***	9.485	Supported
H3			Partially supported

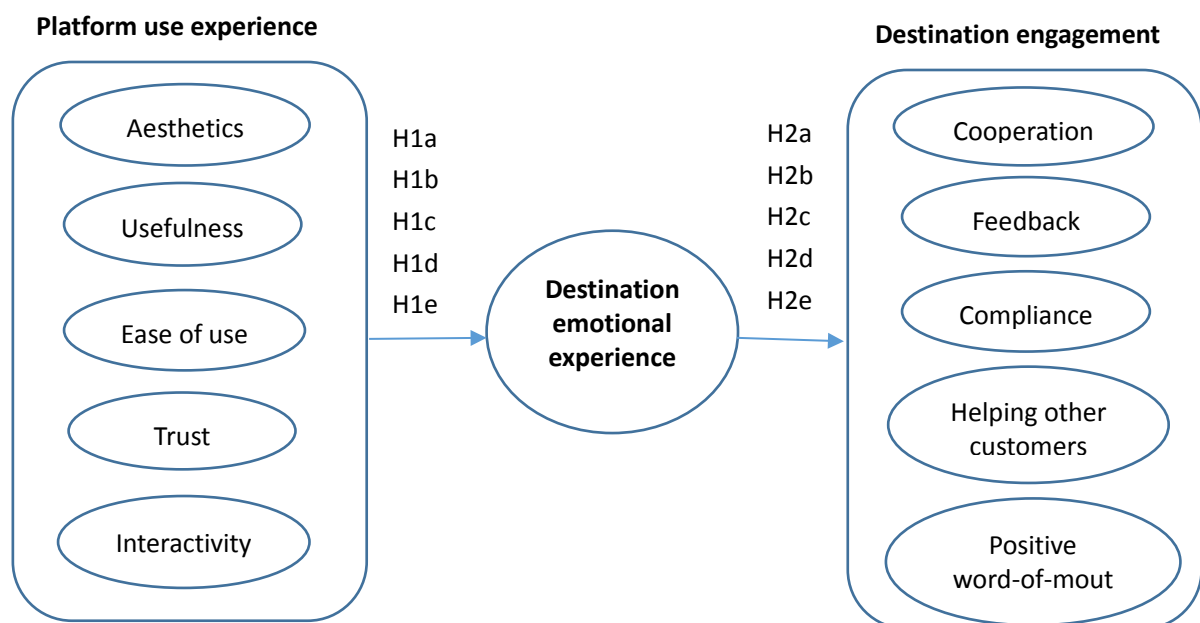
Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

**Table 5 Mediation tests**

PE1→EE	EE→DE1	(PE1→DE1)	PE1→DE1	PE3→EE	EE→DE1	(PE3→DE1)	PE3→DE1
0.22***	0.26***	0.16***	0.11*	0.22***	0.26***	0.22***	0.17***
PE1→EE	EE→DE2	(PE1→DE2)	PE1→DE2	PE3→EE	EE→DE2	(PE3→DE2)	PE3→DE2
0.22***	0.29***	0.23***	0.17***	0.22***	0.29***	0.25***	0.20***
PE1→EE	EE→DE3	(PE1→DE3)	PE1→DE3	PE3→EE	EE→DE3	(PE3→DE3)	PE3→DE3
0.22***	0.29***	0.13**	0.07n.s	0.22***	0.29***	0.13**	0.07n.s
PE1→EE	EE→DE4	(PE1→DE4)	PE1→DE4	PE3→EE	EE→DE4	(PE3→DE4)	PE3→DE4
0.22***	0.27***	0.21***	0.15**	0.22***	0.27***	0.15**	0.10*
PE1→EE	EE→DE5	(PE1→DE5)	PE1→DE5	PE3→EE	EE→DE5	(PE3→DE5)	PE3→DE5
0.22***	0.43***	0.24***	0.16***	0.22***	0.43***	0.25***	0.16***

Note: \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

**Figure**



**Fig. 1 The conceptual model for this study**

