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Are they companions or intruders? The impact of advertising tourists' images on consumers' purchase intention to tour packages

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Declarations of competing interest

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Tourists' images, as one of the most common elements in travel product advertising, play an important role in product promotion. Despite their significance, few studies have examined how advertisements with tourists' images affect consumers' perceptions and purchase intentions to tour packages. In this study, we analyze the features of tour package advertisements with tourists' images, and construct a theoretical model based on cognitive consistency theory. Our study finds that advertisements with tourists' images promote consumers' purchase intention to group tour packages but weaken purchase intention to self-guided tour packages. This process is found to be mediated by embodied mental simulation. Moreover, this difference between group and self-guided tour packages is significant only for consumers with more relevant travel experience. The findings enrich travel product marketing research and offer practical insights for tourism marketing.

Keywords: tourists' images, tour packages, cognitive consistency theory, embodied mental simulation, relevant travel experience, purchase intention

Introduction

In 2022, nearly 70% of consumers expressed a preference for booking travel products from online travel agencies (OTAs) rather than directly from suppliers (Condor Ferries, 2023). To promote travel products, photo advertisements (ads) have long been one of the most predominant forms of advertising for OTAs. Offering superior information conveyance and authenticity (Lundby, 2014), these photo ads

prompt potential consumers to simulate travel situations and experience (Tercia et al., 2020), and also influence their online purchasing (He et al., 2023).

Within OTA marketing contexts, tourists' images are very common in photo advertisements (Figure 1). Moreover, the impact of tourists' images in photo ads is likely to vary across different scenarios of travel product. These tourists' images as "other strangers", drawing from Urry's notion of the gaze, if were viewed as objects of the "cluster gaze", they are "companions" symbolizing group journeys and celebration (Urry & Larsen, 2011); alternatively, through the "romantic gaze", the images may convey the idea of "intruders" disrupting own private journeys (Urry & Larsen, 2011). This difference inspired us to think further about whether advertising tourists' images play the same role in the promotion of different types of tour packages, one of the most important products provided by OTAs.

As the world's second largest OTA market after the United States (Hotel Mize, 2020), two main types of tour packages are provided in the Chinese market: the traditional group tour package (GTP) and the self-guided tour package (STP). The former have long been popular in the Chinese market because they are competitively priced, save preparation time, and reduce uncertainty in unfamiliar environments (Jin et al., 2014; T. Wen et al., 2021). However, GTPs are also characterized by less freedom of social interaction and movement (T. Wen et al., 2021), tourists will always form a group with strangers and carry out the tour activities under the guidance of a professional guide (Chiang & Chen, 2014; Wang et al., 2013; Wong & Wang, 2009),

and, more recently, the health risks of being within a group during the COVID-19 pandemic received attention (J. Wen et al., 2021). For these reasons, travelers nowadays tend to have a greater desire for packages that allow them to autonomously find new experiences on their own or with their friends at destinations (Jin et al., 2014). In response to these market changes, OTAs have offered a new type of tour package, the STP, which is more customized and appealing. Tourists on an STP are free to add or remove package components from the menu provided by the merchants, which means the tour route are all flexible (T. Wen et al., 2021). More importantly, STPs do not require the tourist to be a member of a group with strangers, which is more suitable for individuals and acquaintance tourist groups (Lin & Kuo, 2018; T. Wen et al., 2021). STPs presently account for nearly 20% of China's travel product market and the proportion is growing at a very high rate (CT News, 2023).

Given the significant differences between the GTP and STP, especially in social interaction, tourists' images as an object of gaze, may elicit divergent responses in the advertising of the two types of tour packages (Lin & Kuo, 2018; T. Wen et al., 2021). To be precise, these images as "others" may have differentiated impacts on consumers in different tour package ads, but this has not been studied hitherto. To bridge the gaps, our research had two primary objectives. First, we explored how the contents and forms of photo ads for tour packages were characterized when tourists' images are present (vs. absent). Secondly, we explored interactions between advertising tourists' images and different tour packages. Accordingly, we posed the following research questions:

RQ1: what features of tour packages' photo advertisements are associated with the presence (vs. absence) of tourists' images?

RQ2: Considering the main features, how do advertising tourists' images (vs. their absence) affect consumers' mental processes and behavioral intentions in relation to different tour packages?

To answer these questions, this research comprised four studies. Based on the cognitive consistency theory, it was found that the effects of tourists' images (vs. their absence) on consumers' intention to purchase tour packages were mediated by embodied mental simulation, and the process was moderated by consumers' relevant travel experience. The study makes several important contributions. First, it highlights a key boundary condition under which tourists' images exert positive marketing effects. Second, it enriches the literature related to tourists' images, especially in the context of travel products' advertising. Finally, this study identifies the root causes of consumers' mental and behavioral differences, and the findings offer evidence-based insights for the precision and long-term promotion of travel products.

Literature review and hypotheses

The impact of tourists' images in photos

Recent research has underscored the pivotal role of tourists' images in photographs (Bakhshi et al., 2014; Deng & Liu, 2021; Lu et al., 2023; Schoner-Schatz et al., 2021; Zhang et al., 2023), for example in enhancing audiences' intention to visit

the destinations and promoting word-of-mouth (Schoner-Schatz et al., 2021). Most of these studies have focused on particular features of the tourists in the images, such as their facial expressions (Schoner-Schatz et al., 2021), gender and age (Deng & Liu, 2021). However, studies that have assessed simply the influence of their presence versus absence have produced mixed results, some finding positive effects (Joe et al., 2021; Park et al., 2021; Zhang et al., 2023) and others negative impacts in terms of (Back et al., 2020; Lu et al., 2023).

For example, for tourist-generated photos, Zhang et al. (2023) found that appropriately proportioned human elements can promote viewers' willingness to visit the destination (Zhang et al., 2023), while Lu et al. (2023) pointed out that the presence of tourists in such photos will weaken the viewer's preference for the venue in the photo (Lu et al., 2023). On hotel booking websites, tourists' images can encourage viewers to book rooms (Joe et al., 2021; Park et al., 2021). However, this positive effect may be determined by the size of the photo (Back et al., 2020): when these images are added to large-size photos, they weaken the perceived transportation and reduce consumers' booking intentions (Back et al., 2020). Evidently, the role of tourists' images may produce bias effect in different travelling situation. Despite the complexity, it is crucial to acknowledge that most of the research regard the images of tourists as "companions" who build up social atmospheres (Joe et al., 2021; Park et al., 2021). However, as Lu et al. (2023) pointed out, in some particular situations they are often considered to be the "intruders" of the venue, which weakens the viewer's psychological ownership and

behavioral intentions (Lu et al., 2023). Yet the latter situation remains underexplored and warrants further attention.

Cognitive consistency theory

Cognitive consistency theory suggests that when faced with a large quantity of information, consumers will prefer to access the parts that are consistent with their existing cognitive systems (Festinger, 1957). This state of cognitive harmony is pleasurable to consumers and thus they show favorable attitudes to and higher evaluations of phenomena or objects that enhance the coherence of their frames of reference (Osgood & Tannenbaum, 1955; Tseng & Wang, 2023). Conversely, cognitive dissonance (Akerlof & Dickens, 1982) may develop if the information conflicts with consumers' own knowledge, experience, or cultural beliefs (Akerlof & Dickens, 1982); to reduce that dissonance and the associated state of mental discomfort, consumers need to deploy psychological resources to rectify the incongruence, resulting in aversion to or lower evaluations of the objects (Guo et al., 2018; Iyengar & Hahn, 2009).

It is important to ensure the information conveying by the merchants is consistency with consumers' cognition, as the cognitive harmony state could promote the attitude and behavior intention towards the brand and products (Hsieh, 2023; Ma et al., 2021; Tseng & Wang, 2023). In the field of tourism, this effect also has been validated. Lin and Kuo (2018) found that tourists will make different responses in various context to maintain cognitive consistency: in tourists' cognition, GTP restricts their freedom, while STP is more autonomous, as a results, GTP tourists put less effort

into autonomously constructing a unique image of the destination in the trip, whereas STP tourists engage in a more proactive construction process (Lin & Kuo, 2018).

The effect of tourists' images on purchase intention

Consumers' cognitions of different types of tour packages diverge markedly, influencing their cognitive biases towards GTP and STP, and these biases in turn affect their behavioral intentions (Liu et al., 2015). To be specific, consumers consider GTPs as having strong group attributes and necessary interaction with strangers, and the bundled services make consumers feel more restricted in their social interactions (Chiang & Chen, 2014; Wang et al., 2013; Wong & Wang, 2009). The STP, on the other hand, is associated with greater autonomy, with tourists typically traveling alone or with just a few others, typically without unfamiliar people (Lin & Kuo, 2018; Prayag et al., 2015; Wang et al., 2000), tourists still feel free for their social interactions.

Serving as an important source of information in photo advertisements for destinations and tours, as the object of consumers' gaze, tourists' images as "other strangers" create a traveling situation full of unfamiliarity, social atmosphere, and collective attributes (Joe et al., 2021; Park et al., 2021; Urry & Larsen, 2011). For GTPs, photo ads with tourists' images convey information representing social restrictions that are consistent with consumers' cognition of GTPs, such as "needing to be accompanied by strangers," "traveling in a unfamiliar group," and "guided tours" (Chiang & Chen, 2014; Wong & Wang, 2009). Thus they enhance consumers' purchase intention for GTPs. However, for STPs, they creates a dissonance with consumers' cognitions, in

relation, for example, to “autonomy,” “no need to be in a group,” and “traveling alone or with my own acquaintances” (Lin & Kuo, 2018), and instead hinder consumers’ purchase intention. Based on the above discussion, this study proposes:

H1. The effect of tourists’ images on purchase intention may varies in different tour packages.

H1a. For GTPs, tourists’ images promote purchase intention.

H1b. For STPs, tourists’ images weaken purchase intention.

The mediating effect of embodied mental simulation

Given the differences in consumers’ cognitions of GTPs and STPs, particularly regarding the social interaction, the cognitive harmony or dissonance between the tour packages and the advertising tourists’ images could probably affect consumers’ mental processes as well. From the point, how tourists’ images affect consumers’ behavioral intention is assumed here to be linked with embodied mental simulation, a mental process derived from the foundational principles of mental simulation and embodied cognition theory (Robin & De Bont, 2023).

Embodied mental simulation suggests that consumers activate their memory and cognitive systems in response to visual, auditory, tactile, and olfactory representations (Elder & Krishna, 2011), and use these information cues to simulate specific consumption situations and relate them to their own sensory experiences (Bagatini et al., 2023; Yeh & Barsalou, 2006). For instance, Elder and Krishna (2011) demonstrated that the orientation of the spoon in an image of a yogurt can significantly

influence the strength of embodied mental simulation of consuming it, particularly if the orientation aligns with the dominant hand of the viewer (Elder & Krishna, 2011). This finding underscores that embodied mental simulation is closely related to an individual's cognition and experience, and that stimulus images are more likely to facilitate embodied mental simulation if they are consistent with individual's cognition or hinder the process if there is a mismatch (Elder & Krishna, 2011; Xie et al., 2016).

In the field of tourism, research has shown that mental simulation is also common in tourists' pre-visit mental activities (Tercia et al., 2020; Walters et al., 2012). Photo advertisements, as external visual stimuli, can provide tourists with effective materials to assist them in simulating and imagining their future traveling situations and experiences (Tercia et al., 2020), and the process is thought to be tide with individuals' cognition (Walters et al., 2012). From the perspective, as the viewed others, the images of tourists may also inspire consumers' mental simulation if consistence with consumers' cognition. Also, recent studies have confirmed that embodied mental simulation induced by visual stimuli can promote positive behaviors, such as consumer's preference and the purchase intention to tourism products (Bagatini et al., 2023; Chen & Lin, 2021; Elder & Krishna, 2011; Walters et al., 2012). Based on the above discussion, this study proposes:

H2. The impact of tourists' images on purchase intention is mediated by embodied mental simulation.

The moderating role of relevant travel experience

Relevant travel experience is defined as the sum of a consumer's experience of travel activities associated with the travel product (Alba & Hutchinson, 1987), and it reflects consumers' actual consumption behaviors and purchase experiences with a particular type of travel product (Bettman & Park, 1980). It can be measured both subjectively and objectively (Dodd et al., 2005), where the former draws on consumers' own cognitions and evaluations (Brucks, 1985; Dodd et al., 2005) and the latter reflects the actual total amount of consumers' accumulated experience, usually in terms of the duration and frequency of product consumption over a certain period (Li et al., 2021; Tussyadiah & Pesonen, 2016). Relevant travel experience is cumulative and shapes individuals' knowledge and cognitive system, which in turn directly or indirectly influences decision-making (Dodd et al., 2005). Moreover, the impact of relevant travel experience may vary; for example, Li et al. (2021) found that for tourists with more travel experience, travel time scarcity significantly enhances their impulse purchasing intentions, while for tourists with less travel experience, travel time scarcity reduces their intentions (Li et al., 2021).

Based on the discussion above, the study proposes that relevant travel experience moderates the influence of tourists' images on embodied mental simulation and purchase intention. Specifically, consumers who lack travel experience are initially still in the stage of learning and accumulating experience and do not construct different cognitions for the two types of tour packages (Bettman & Park, 1980); consequently,

the series of effects proposed in this study are not manifested. However, as the amount of travel consumption experience increases, consumers' experience will have more entrenched heuristic cognitive patterns (Li et al., 2021), and consequently integrate photo ads with that experience to simulate GTP or STP consumption, which will intensify either cognitive consistency or dissonance in response to the advertisements. Therefore, this study proposes:

H3. For consumers with rich relevant travel experience, there is a significant impact of tourists' images on embodied mental simulation and purchase intention, while the impact is not significant for consumers with little relevant travel experience.

Figure 2 sets out the theoretical frame for the present research.

Methodology

To answer RQ1 and RQ2, we conducted an exploratory content analysis (Study 1) and three experimental studies (Studies 2-4) in total. Study 1 analyzed the content of different photo advertisements and characterized the features when tourists' images were present and absent. Study 2 examined the main effect of photo advertisements for tour packages on purchase intention (H1). Study 3 examined the mediating role of embodied mental simulation (H2) and again tested H1 and H2. Study 4 examined the moderating role played by relevant travel experience in the influence of advertising tourists' images on embodied mental simulation and purchase intention (H3). Before the experimental studies could be done, it was necessary to conduct a pre-survey to determine the experimental materials.

Study 1: the features of photo advertisements for tour packages

Data collection

We selected Ctrip (https://www.ctrip.com/) as the case platform, which belongs to Trip.com, the third largest OTA in the world in terms of market capitalization, as well as currently the largest OTA platform in China in terms of users and market share, occupying 36.3% market share and ranking first in the industry (Hotel Mize, 2020). We reviewed the report published by the China Tourism Academy (CTA, 2023) and chose Sanya, Lijiang and Suzhou as the case destinations, largely on the basis of the total number of tourists in 2022 and a range of landscapes among these destinations. To ensure the diversity of the advertisement samples, we captured the ads on two of the peak tourist dates in China, i.e., the golden weeks of May Day (5/2023) and National Day (10/2023), and on each occasion we randomly collected 150 photo ads for each destination. After eliminating duplicates, it was felt that a saturation point had been reached, in that there was little further variation in the style or content of the advertisements. Our final dataset comprised 804 photo ads, with Sanya, Lijiang and Suzhou contributing 262 (33%), 273 (34%) and 269 (33%) ads, respectively.

Manual coding

First, 100 advertisements were randomly selected from the total sample, and two researchers independently coded these to establish preliminary coding frames. Subsequently, the two researchers checked, negotiated, and consistently interpreted the coding frames under the supervision of a third researcher to determine the final coding

frame used in this study. Then, the two researchers fully coded the 804 photo advertisements based on the frame. The third researcher performed the calculation and assessment of coding consistency. We employed Holsti's reliability (Holsti, 1969) and Cohen's kappa value (Cohen, 1960) as the consistency test indicators; these had values, respectively, of 0.967 and 0.908, indicating high consistency, and that there were no issues with the dataset.

Features of advertisements without tourists' images

Of the photo ads, 409 (51%) did not feature tourists' images at all. As detailed in Table 1, the predominant element across these ads for the three cities was destination landscapes, accounting for 72%. These landscapes typically showcased iconic features of the destinations, such as the sandy shores and ocean vistas in Sanya, the snow-capped mountains and unique residential architecture in Lijiang, and the picturesque water town scenes in Suzhou, each highlighting the distinct appeal of these destinations. Moreover, for Sanya and Lijiang, where the hotel lodging and vacation industries are relatively well developed, hospitality facilities frequently emerged as the thematic focus of the ads, a trend less observed in Suzhou. Other elements, including transportation and recreational facilities, plants, and animals were less prominently featured, appearing in less than 5% of the advertisements.

Features of advertisements with tourists' images

There were a total of 395 (49%) photo advertisements for tour packages with tourists' images. Table 2 outlines the main features of this type of ad in terms of absolute counts and percentages.

Features of tourists' images

54% of the advertisements contained an image of two tourists, with a mean of 2.12 people (SD = 1.30) depicted in each of all these ads with human images. Most of the ads contained both male and female images (59%); this gender-balanced presentation strategy has been widely used in commercial marketing more generally (Mohan et al., 2022). The ads predominantly featured and presumably targeted young and middle-aged people (74%). Of these ads, 16% featured a multiple age range, typically to evoke family travel. Minorities of the images had people with their backs to the viewer (18%) or with their faces hidden (22%), while most of images displayed people with enjoyable facial expressions (64%), with some bodily interaction (90%), and with the face towards the viewer (52%). Notably, considering issues such as endorsement costs and business revenue (Wang et al., 2019), only 6% of the OTA photo ads that included tourists' images used celebrities.

Features of background elements

In terms of background elements, destination landscapes with unique regional features were the dominant backdrop (56%), as with the ads without tourists' images. The slight difference was that recreation facilities (e.g., amusement parks, swimming

pools, etc.) appeared more frequently than in the former ads (19% vs. 2%), and the tourists' images were usually interacting with recreation facilities to build up pictures of enjoyment. The rest of the elements appeared less frequently (< 10%). Then respondents were invited to evaluate their attractiveness, and then three groups were finalized, as shown in Table 3.

Pre-survey: determining the experimental stimulus materials

We conducted pre-survey to determine the stimuli for the following experimental studies, which was completed through Credamo (https://www.credamo.com/#/), a Chinese professional research platform, with a total of 105 respondents (44.76% male, Mage =28.9). We again utilized the three cities used in study 1 as destinations, namely Sanya (beach), Lijiang (snowy mountains) and Suzhou (water town). We selected nine representative groups of images for these destinations based on the conclusion of study 1.

Study 2

Design and procedure

Study 2 used Sanya as the destination, and had a 2 (tour packages: GTP vs. STP) × 2 (tourists' images: presence vs. absence) design to examine the main effect (H1). We pre-recruited 75 participants to ensure the experimental materials were effective in manipulating. After being shown photo ads, participants were asked to respond to four questions about the types of tour packages and photo ads on a 7-point scale referenced

from Magnini and Kim (2016) and T. Wen et al. (2021). Participants were able distinguish whether the ads were for a GTP (MGTP =5.84, SD=1.27; MSTP =2.55, SD=1.46; t=14.75, p<0.001) or a STP (MGTP =2.95, SD=1.75; MSTP =5.76, SD=1.30; t=-11.15, p<0.001) , and similarly whether they featured (Mpresence =5.96, SD=1.25; Mabsence =2.15, SD=0.73; t=22.87, p<0.001) or did not feature (Mpresence =2.40, SD=1.00; Mabsence =5.53, SD=1.12; t=-18.08, p<0.001) tourists' images, indicating the materials have good manipulation effect.

Then we randomly recruited participants through Credamo. Participants had to complete a background survey on travel experience and interests before entering the experiment. We designed two control items, included "I have been to Sanya" and "I have no interest in traveling to Sanya", and participants who responded affirmatively to either were excluded. Finally, 160 participants (40.63% male, Mage =30.81) who passed the control check were randomly assigned to four experimental groups.

Then the participants first read a piece of text to convey a scenario where they were about to shop for a GTP or STP to Lijiang on an OTA platform, based on the group they were assigned to. They were then shown a photo advertisement with or without tourists' images. Next, participants indicated their purchase intention, through three items rated on a seven-point scale (Cronbach's α = 0.905, AVE=0.849, CR=0.944), which were referenced from Yin et al. (2017). Finally, descriptive statistics and demographics of the participants were recorded. All study materials are included in the supplemental file.

Results

Purchase intention

As expected, in the GTP groups, participants had a stronger purchase intention (Mabsence =4.983, SD =1.377; Mpresence =5.633, SD =1.311, t=-2.162, p=0.034) when viewing the photo advertisement with tourists' images, whereas in the STP groups, they had a stronger purchase intention (Mabsence =5.775, SD =0.741; Mpresence = 4.883, SD =1.529, t=3.318, p=0.002) when viewing the photo advertisement without tourists' images (See Figure 3). Thus, study 2 supported H1. The study also used one-way ANOVA to exclude irrelevant factors that might interfere with the results. The results showed that the participants' gender, age, educational level, occupation type, and income level had no significant influence ($p > 0.05$).

Study 3

Design and procedure

Study 3 used Lijiang as the destination, and had a 2 (tour packages: GTP vs. STP) × 2 (tourists' images: presence vs. absence) design to examine the mediating role of embodied mental simulation. we pre-recruited 84 participants to examine if the experimental materials were effective in manipulating. Participants were able to distinguish whether the ads were for a GTP (MGTP =5.81, SD=1.28; MSTP =3.05, SD=1.48; t=12.96, p<0.001) or a STP (MGTP =3.49, SD=1.79; MSTP =5.63, SD=1.18; t=-9.172, p< 0.001), and also whether tourists' images were present (Mpresence =5.96,

SD=0.86; Mabsence =2.23, SD=1.13; t=24.11, p<0.001) or absent (Mpresence =3.27, SD=1.79; Mabsence =5.71, SD=1.22; t=-10.32, p<0.001).

Prior to the experiment, participants were also required to complete two control check items, then 152 participants (42.76% male, Mage =31.12) who passed the control check were randomly assigned to four groups. The preliminary process was the same as in Study 2. Then to measure the extent of embodied mental simulation, they recorded their response to three items referred to Elder and Krishna (2011) on a seven-point scale (Cronbach's α = 0.852, AVE=0.774, CR=0.911). Finally, participants indicated their purchase intention, and the descriptive statistics and demographics of themselves were recorded.

Results

Purchase intention

Same as study 2, participants in the GTP groups had a stronger purchase intention (Mabsence =4.702, SD =1.382; Mpresence =5.781, SD =0.901, t=-4.032, p<0.001) when viewing the photo advertisement with tourists' images, whereas in the STP groups they had a stronger purchase intention (Mabsence =5.798, SD =0.603; Mpresence = 4.816, SD =1.258, t=4.340, p<0.001) when viewing the photo advertisement without tourists' images, which again verified H1.

The mediating role of embodied mental simulation

To examine the mediating role played by embodied mental simulation, the study utilized Model 4 in PROCESS with 5000 bootstrap samples (Hayes, 2017). The results showed that embodied mental simulation had a significant mediating effect in both the GTP groups (β=0.580, SE=0.219, 95% CI [0.460, 0.787]) and the STP groups (β=-0.305, SE=0.140, 95% CI [-0.612, -0.065]), while the direct effect of tourists' images on purchase intention was also significant (βGTP= 0.499, SEGTP = 0.215, 95% CIGTP [0.069, 0.928]; βSTP = -0.677, SESTP = 0.218, 95% CISTP [-1.112, -0.243]). The results indicated that embodied mental simulation plays a partial mediating role between advertising tourists' images and purchase intention, which supported H2 (See Figure 4).

Study 4

Design and procedure

Study 4 used Suzhou the destination, and had a 2 (tour packages: GTP vs. STP) × 2 (tourists' images: presence vs. absence) between-subjects design to examine the moderating role of relevant travel experience (H3). We again pre-recruited 78 participants, they were able distinguish whether the ads were for a GTP (MGTP =5.90, SD=1.05; MSTP =2.37, SD=1.07; t=20.75, p<0.001) or a STP (MGTP =3.18, SD=1.52; MSTP =5.56, SD=1.29; t=-10.59, p< 0.001) , and also whether tourists' images were present (Mpresence =6.05, SD=1.03; Mabsence =2.21, SD=0.96; t=24.14, p<0.001) or absent (Mpresence =2.12, SD=0.897; Mabsence =5.55, SD=1.47; t=-17.586, p<0.001).

A total of 156 participants (41.03% male, Mage =29.22) who passed the control check were randomly assigned to four groups. The preliminary process was the same as in Study 3. After the embodied mental simulation was measured, participants completed two items to measure relevant travel experience from both subjective and objective aspects, which were adapted from Dodd et al. (2005) and Li et al. (2021). Finally, purchase intention was measured, and descriptive statistics and demographics of the participants recorded.

Results

Purchase intention

As expected, participants in the GTP groups had a stronger purchase intention (Mabsence =4.795, SD =1.790; Mpresence =5.641, SD =1.709, t=-2.136, p=0.036) when viewing the photo advertisement with tourists' images, whereas in the STP groups they had a stronger purchase intention (Mabsence =5.598, SD =1.106; Mpresence = 4.769, SD =1.433, t=3.428, p=0.005) when viewing the photo advertisement without tourists' images.

The interacting effect between variables

The study used two-way ANOVA to test the interacting effects of tourists' images and relevant travel experience on embodied mental simulation and purchase intention. In the GTP groups the interacting effects were significant on both embodied mental simulation (F (1, 74) =7.896, p=0.063) and purchase intention (F (1, 74) =7.507,

p=0.008). Similarly, in the STP groups the effects were also significant on embodied mental simulation (F (1, 74) =7.161, p=0.009) and purchase intention (F (1, 74) =5.304, p=0.024). These results suggested that a moderation test was appropriate.

The moderating role of relevant travel experience

The study utilized Johnson-Neyman floodlight analysis to test the moderating role played by relevant travel experience, which allowed observing the significance at different experience levels (Carden et al., 2017; Spiller et al., 2013).

In the GTP groups (Table 4), for participants whose relevant travel experience was higher than 2.55 (M-0.28SD, M=2.846, SD=1.048; 51.28% of total), tourists' images had a significant effect on embodied mental simulation, and for whose experience was higher than 2.73 (M-0.11SD; 51.28% of total), tourists' images significantly affected purchase intention. For rest of the participants who had less experience, the impact was not significant (See Fig. 5a).

In the STP groups (Table 4), for participants whose experience was higher than 3.86 (M-0.16SD, M=4.058, SD=1.235; 64.10% of total), tourists' images had a significant effect on embodied mental simulation, and for whose experience was higher than 3.56 (M-0.40SD; 64.10% of total), tourists' images significant effect on purchase intention. For rest of the participants who had less experience, the effect was not significant (See Fig. 5b), The results supported H3.

General discussion

Conclusions

The study proved that advertising tourists' images promote consumers' purchase intention for GTPs, but weaken purchase intention for STPs, and embodied mental simulation plays a mediating role. Previous research has shown that tourists' images in photographs promote consumers' positive attitudes and behavioral intentions to destinations (Joe et al., 2021; Park et al., 2021; Zhang et al., 2023). We have found that there is a boundary condition for this positive impact, i.e., it requires consistency between the images and the consumers' cognition. When consumers watch advertisements for different tour packages, tourists' images do not play a positive role if they create dissonance with their cognition and experience of the tour packages (Robin & De Bont, 2023) but, rather, can negatively affect consumers' behavioral intentions (e.g., when tourists images appear in photo ads for STPs).

In addition, the study found that for consumers with more relevant travel experience, the advertising tourists' images significantly affected embodied mental simulation and purchase intention, but for whom with less relevant travel experience the impact was not significant. The conclusion is that the accumulation of experience allows tourists to gradually construct knowledge and cognitive systems for different travel products (Dodd et al., 2005; Li et al., 2021). Also, as tourists continue to strengthen the construction process by repeating similar experiences, when relevant travel experience meets a certain level, the inclusion of tourists' images will generate

cognitive consistency or dissonance, which will affect their mental simulation and purchase intention. However, those with less experience have not constructed such cognitive systems for the product (Bettman & Park, 1980), and so the impact is not significant.

Theoretical contributions

Our study advances theoretical development across several dimensions. First, while some studies have explored the impact of tourists' images on consumers (Joe et al., 2021; Park et al., 2021; Zhang et al., 2023), the majority has ignored the differentiated role these images play as objects of consumers' gaze. Based on the bias of consumers' cognition on travel products, this study discovered the boundary condition of the positive impact played by tourists' images, it provides a novel perspective for research in the field of tourism images.

Secondly, based on cognitive consistency theory, the study constructed a bridge between this theory and the concept of embodied mental simulation. Lin and Kuo (2018) have utilized the theory to explain the behavioral differences of tourists undertaking different tour arrangements (Lin & Kuo, 2018), but no research has yet explored whether the effectiveness of this theory extends to the pre-travel decision-making stage. Moreover, although studies show that consumers will mentally simulate scenes and experiences in advance when viewing advertisements for experiential products (He et al., 2023; Tercia et al., 2020), it remains unclear whether this mental process varies among different travel products. Thus, the study pioneers the application

of cognitive consistency theory to dissect the differences in embodied mental simulation and its influence on pre-travel purchase decisions, thereby bridging significant knowledge gaps.

Finally, the study introduces the concept of relevant travel experience, which linking tourists' cognition, mental processes and behaviors to individuals' experience systematically. Prior studies have shown that consumers' past experience shape their cognitions (Bettman & Park, 1980; Dodd et al., 2005) and also influence their purchase behaviors (Li et al., 2021). However, these views are scattered. This study elaborates for the first time how tourism images influence the entire process from consumers' underlying cognition to mental process and moreover to specific behaviors, which have not been previously reported. Thus, present study significantly expands the literature on both tourist behavior and tourism marketing.

Practical implications

First, advertising should be targeted for different tourism products. Photo advertisements with tourists' images (i.e., tourists facing forward, with young male and female companions, with facial expressions of enjoyment and interacting body postures) should be utilized more in GTP marketing, while photo ads without tourists' images should be used more in STP marketing.

Second, precise marketing can be carried out for different groups of consumers with different levels of consumption experience. Specifically, for consumers who often seek GTP products (especially who have rich group tour experience), advertisements

with tourists' images should be used, while ads without tourists' images should be used for those who often purchase STP products (especially those who have rich self-guided tour experience).

Finally, the study provides important support for long-term marketing. The cognitive consistency between consumers' cognition and the information conveyed by ads is one of the key factors that affect their purchase decisions, which cannot be separated from the impact of relevant travel experience. For newly created travel products, a long-term normalized marketing strategy should be adopted to promote the experience and cognition of the new products for consumers in subtle ways (e.g., push reports on product-related events to the consumers), with a matching of the types of ads (i.e., with tourists' images or without) to the products. And finally, to cultivate consumers' attitudes and willingness in the enterprise's expected direction of development.

Limitations and future research

The study has some limitations. First, considering the main features of advertisements on the present OTAs, the materials used were all images of unfamiliar companionable tourists' images with male and female, images of a single person and groups (three or more people) were not considered, and so future research needs to examine the effects of such images. Second, the study considered only photo advertisements. Although these are the main medium for OTAs to promote their products, there are many other types of ads, including video and interactive ads, etc.

Tourists' images may have a different influence in these ads. In addition, all the experiments were conducted in the Chinese context. Previous studies have shown that individuals' cognitions may be influenced by culture (Cowan & Spielmann, 2020). China is a country that advocates collectivism (Hofstede, 1983), and thus the participants might be more likely to hold the notion that companionable images should be present in GTP advertisements. Thus, samples from a wider range of regions should be studied to increase the generalizability of the results.

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1. Note: EMS= embodied mental simulation; TIs= tourists' images; RTE= relevant travel experience; PI= purchase intention; GTP=group tour package; STP= self-guided tour package; "Others" included texts, cartoons, and paintings.

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Table 1. Features of photo advertisements with no tourists' images

	Sanya	Lijiang	Suzhou	Totals
Overall counts	108	130	171	409
Main element				
Destination scenery	63 (58%)	92 (71%)	140 (82%)	295 (72%)
Hospitality facilities	22 (21%)	24 (19%)	5 (3%)	51 (12%)
Transportation facilities	6 (5%)	3 (2%)	2 (1%)	11 (3%)
Recreation facilities	9 (8%)	0 (0%)	1 (1%)	10 (2%)
Plants	1 (1%)	3 (2%)	7 (4%)	11 (3%)
Animals	5 (5%)	3 (2%)	7 (4%)	15 (4%)
Others	2 (2%)	5 (4%)	9 (5%)	16 (4%)

Table 2. Features of photo advertisements with tourists' images

	Sanya	Lijiang	Suzhou	Totals
Overall counts	154	143	98	395
Number of tourists				
= 1	25 (16%)	43 (30%)	44 (45%)	112 (28%)
= 2	98 (64%)	77 (54%)	36 (37%)	211 (54%)
= 3	15 (10%)	7 (5%)	7 (7%)	29 (7%)
> 3	16 (10%)	16 (11%)	11 (11%)	43 (11%)
Gender				

Male only	5 (3%)	8 (6%)	15 (15%)	28 (7%)
Female only	30 (20%)	60 (42%)	45 (46%)	135 (34%)
Multiple genders	119 (77%)	75 (52%)	38 (39%)	232 (59%)
Age				
Child age	7 (5%)	2 (1%)	13 (13%)	22 (6%)
Young & middle-age	98 (63%)	134 (94%)	61 (62%)	293 (74%)
Older age	14 (9%)	1 (1%)	1 (1%)	16 (4%)
Multiple ages	35 (23%)	6 (4%)	23 (24%)	64 (16%)
Body orientation				
Facing forward	90 (58%)	65 (45%)	51 (52%)	206 (52%)
Facing back	27 (18%)	27 (19%)	18 (18%)	72 (18%)
Facing sideways	37 (24%)	51 (36%)	29 (30%)	117 (30%)
Facial expression				
Enjoyable	113 (73%)	85 (60%)	54 (55%)	252 (64%)
Neutral	8 (5%)	22 (15%)	22 (23%)	52 (13%)
Sad	0 (0%)	4 (3%)	0 (0%)	4 (1%)
No face shown	33 (22%)	32 (22%)	22 (22%)	87 (22%)
Body posture				
Interactive	149 (97%)	129 (90%)	77 (79%)	355 (90%)
Non-interactive	5 (3%)	14 (10%)	21 (21%)	40 (10%)
Reputation				

Non-celebrities	145 (94%)	132 (92%)	94 (96%)	371 (94%)
Celebrities	9 (6%)	11 (8%)	4 (4%)	24 (6%)
Background elements				
Destination scenery	83 (54%)	88 (61%)	51 (52%)	222 (56%)
Hospitality facilities	9 (6%)	12 (8%)	6 (6%)	27 (7%)
Transportation facilities	8 (5%)	11 (8%)	2 (2%)	21 (5%)
Recreation facilities	41 (27%)	11 (8%)	24 (25%)	76 (19%)
Plants	1 (0%)	7 (5%)	7 (7%)	15 (4%)
Animals	8 (5%)	11 (8%)	0 (0%)	19 (5%)
Others	4 (3%)	3 (2%)	8 (8%)	15 (4%)

Table 3. Evaluation of the attractiveness of the images in the stimulus materials

Group	Tourists' images			Destination landscape images		
Study 2						
$M_{attractiveness}$	5.80	5.06	4.86	4.86	5.80	5.34
$SD_{attractiveness}$	1.35	1.14	1.61	1.61	0.96	1.26
Used in study	Yes	No	No	No	Yes	No
Study 3						
$M_{attractiveness}$	4.03	5.94	4.54	6.00	5.00	5.74
$SD_{attractiveness}$	1.25	0.91	1.17	0.87	1.48	1.36
Used in study	No	Yes	No	Yes	No	No
Study 4						
$M_{attractiveness}$	4.23	5.29	5.71	5.74	5.83	5.54
$SD_{attractiveness}$	1.44	1.15	1.13	0.92	1.15	1.34
Used in study	No	No	Yes	No	Yes	No

Table 4. Moderating effect in Study 4

Group		Group tour package								Self-guided tour package					
Outcome	Moderator	Effect	SE	t	Sig.	95%CI		Outcome	Moderator	Effect	SE	t	Sig.	95%CI	
						LICI	UICI							LICI	UICI
EMS	TIs * RTE	0.868	0.309	2.810	0.006	0.253	1.484	EMS	TIs * RTE	-0.528	0.197	-2.676	0.009	-0.920	-0.135
	M_{RTE}-1SD	0.014	0.459	0.031	0.975	-0.899	0.928		M_{RTE} -1SD	0.060	0.343	0.176	0.861	-0.623	0.743
	M_{RTE}	0.925	0.321	2.879	0.005	0.285	1.565		M_{RTE}	-0.592	0.240	-2.465	0.016	-1.070	-0.113
	M_{RTE} +1SD	1.835	0.454	4.044	< 0.001	0.931	2.740		M_{RTE} +1SD	-1.243	0.341	-3.645	< 0.001	-1.923	-0.564
PI	TIs * RTE	1.015	0.370	2.740	0.008	0.277	1.753	PI	TIs * RTE	-0.519	0.225	-2.303	0.024	-0.968	-0.070
	M_{RTE} -1SD	-0.176	0.549	-0.321	0.749	-1.271	0.919		M_{RTE} -1SD	-0.209	0.392	-0.534	0.595	-0.989	0.571
	M_{RTE}	0.887	0.385	2.307	0.024	0.121	1.655		M_{RTE}	-0.850	0.274	-3.101	0.003	-1.396	-0.304
	M_{RTE} +1SD	1.952	0.544	3.588	< 0.001	0.868	3.035		M_{RTE} +1SD	-1.491	0.390	-3.826	< 0.001	-2.267	-0.714

Figure 1. OTAs' photo advertisements for tour packages (from Ctrip)

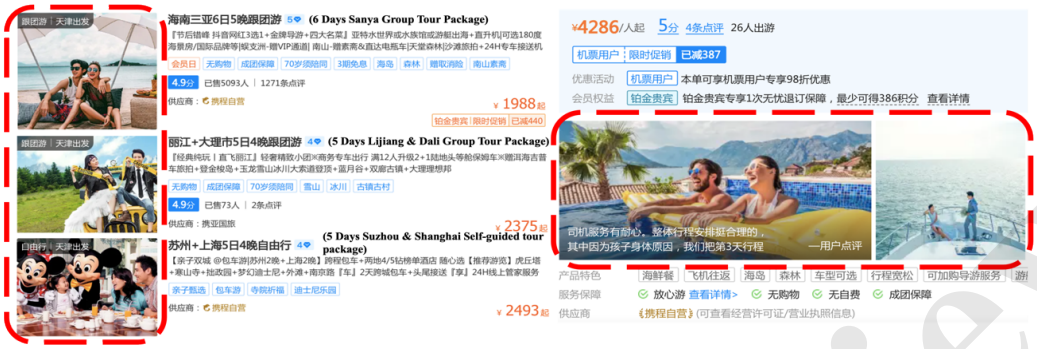


Figure 2. Theoretical frame

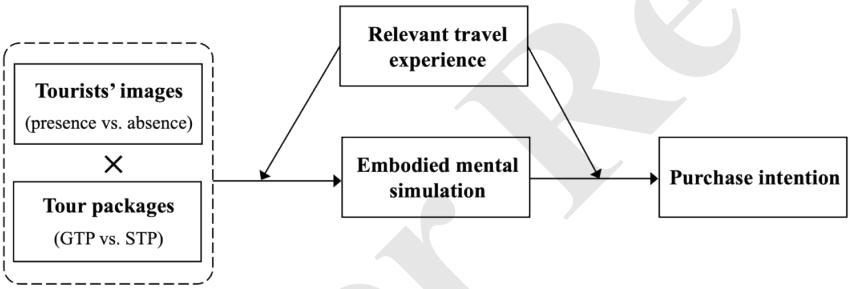


Figure 3. Main effect in Study 2

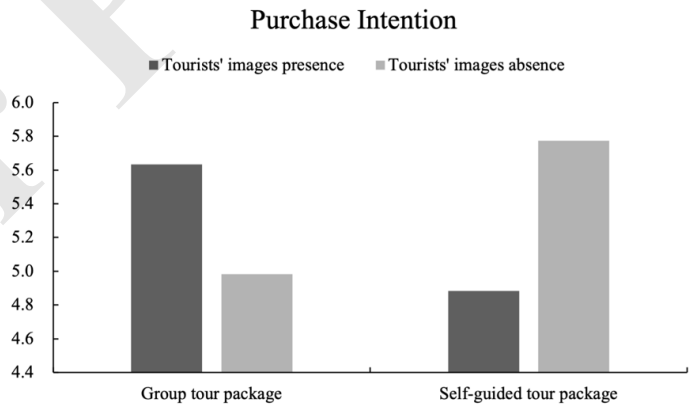


Figure 4. Mediating effect in Study 3

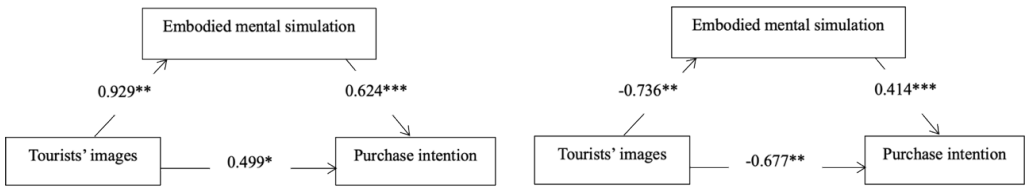


Figure 5a. Floodlight analysis results (GTP)

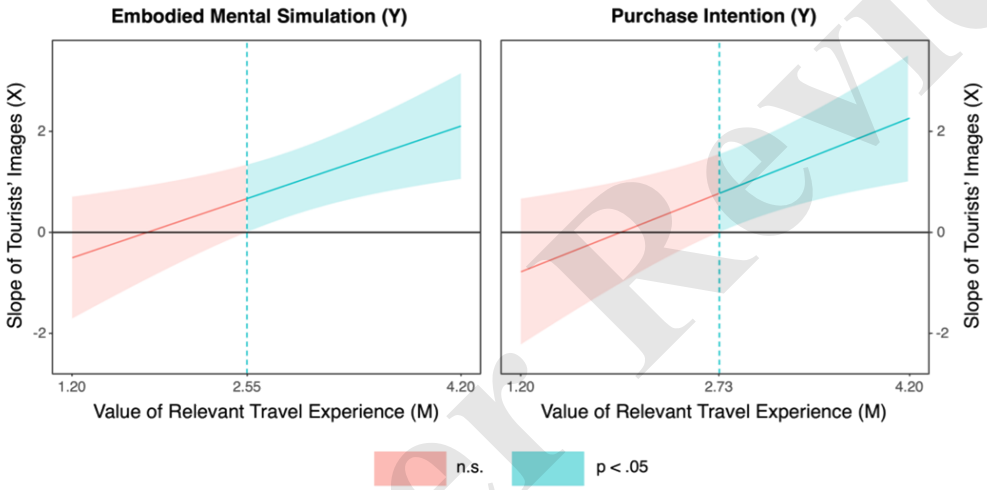
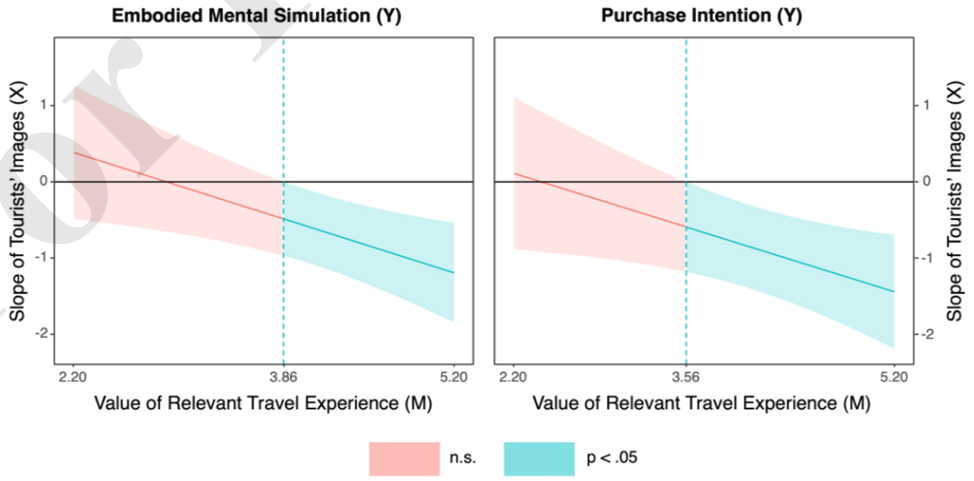


Figure 5b. Floodlight analysis results (STP)



APPENDIX

Appendix A. Some photo advertisements captured from Ctrip (Study 1)

Appendix B. Experimental scenarios

Group tour package (GTP)

Recently, due to the physical and mental stress, you decide to give yourself a vacation and take a trip. You have enough time and money, in order to save energy, you come to online travel agency (OTA) platform to buy group tour packages. Among all the destinations, you finally pick out Sanya/ Lijiang/ Suzhou. Below is the product description of the Sanya/ Lijiang/ Suzhou group tour packages you find on the OTA platform, please read it carefully:

Chinese version

English version

Self-guided tour package (STP)

Recently, due to the physical and mental stress, you decide to give yourself a vacation and take a trip. You have enough time and money, in order to save energy, you come to online travel agency (OTA) platform to buy self-guided tour packages. Among all the destinations, you finally pick out Sanya/ Lijiang/ Suzhou. Below is the product description of the Sanya/ Lijiang/ Suzhou. self-guided tour packages you find on the OTA platform, please read it carefully:

Chinese version

English version

Appendix C. Experimental stimuli

Study 2 - GTP

[Tourists' images presence]

[Tourists' images absence]

Note: "三亚" means "Sanya"; "跟团游" means "Group tour package"; "官方自营" means "Officially provided by OTA"; "这五天过得太快乐啦!" means "These five days have been so happy!"; "很享受的体验" means "Very enjoyable experience"; "5.0 分" means "5.0 points"; "已售" means "Already sold".

Study 2 - STP

[Tourists' images presence]

[Tourists' images absence]

Note: "三亚" means "Sanya"; "自由行" means "Self-guided tour package"; "官方自营" means "Officially provided by OTA"; "这五天过得太快乐啦!" means "These five days have been so

happy!”; “很享受的体验” means “Very enjoyable experience”; “5.0 分” means “5.0 points”; “已售” means “Already sold”.

Study 3 - GTP

[Tourists’ images presence]

[Tourists’ images absence]

Note: “丽江” means “Lijiang”; “跟团游” means “Group tour package”; “官方自营” means “Officially provided by OTA”; “这五天过得太快乐啦!” means “These five days have been so happy!”; “很享受的体验” means “Very enjoyable experience”; “5.0 分” means “5.0 points”; “已售” means “Already sold”.

Study 3 - STP

[Tourists’ images presence]

[Tourists’ images absence]

Note: “丽江” means “Lijiang”; “自由行” means “Self-guided tour package”; “官方自营” means “Officially provided by OTA”; “这五天过得太快乐啦!” means “These five days have been so happy!”; “很享受的体验” means “Very enjoyable experience”; “5.0 分” means “5.0 points”; “已售” means “Already sold”.

Study 4 - GTP

[Tourists’ images presence]

[Tourists’ images absence]

Note: “苏州” means “Suzhou”; “跟团游” means “Group tour package”; “官方自营” means “Officially provided by OTA”; “这五天过得太快乐啦!” means “These five days have been so happy!”; “很享受的体验” means “Very enjoyable experience”; “5.0 分” means “5.0 points”; “已售” means “Already sold”.

Study 4 - STP

[Tourists’ images presence]

[Tourists' images absence]

Note: "苏州" means "Suzhou"; "自由行" means "Self-guided tour package"; "官方自营" means "Officially provided by OTA"; "这五天过得太快乐啦!" means "These five days have been so happy!"; "很享受的体验" means "Very enjoyable experience"; "5.0 分" means "5.0 points"; "已售" means "Already sold".

Appendix D. Measurement Items

Variables	Measurement items	Source
Advertisement type (Manipulation check)	1. To what extent do you think these are group tour package / self-guided tour package advertisements? (1= *not at all*, 7= *very much*) 2. To what extent do you think these advertisements contain / do not contain tourists' images? (1= *not at all*, 7= *very much*)	Magnini & Kim, 2016; T. Wen et al., 2021
Embodied mental simulation	1. When viewing the advertisement, to what extent did images of attending a group tour / self-guided tour in Lijiang / Suzhou come to your mind? (1= *few or no*, 7= *lots of)* 2. When viewing the advertisement, how much of the experience of attending a group tour / self-guided tour in Lijiang / Suzhou can you imagine? (1= *few or no*, 7=*a lot of)* 3. To what extent while viewing the advertisement could you imagine attending a group tour / self-guided tour in Lijiang / Suzhou? (1= *not at all*, 7= *to a great extent)*	Elder & Krishna, 2011
Relevant travel experience	1. I have a lot of experience with group tours / self-guided tours. (1= *strongly disagree*, 7= *strongly agree)* 2. My frequency of group tours / self-guided tours in recent years is on average per year____.	Dodd et al., 2005; Li et al., 2021
Purchase intention	1. For this tour package, I would like to buy it. (1= *strongly disagree*, 7= *strongly agree)* 2. For this tour package, I probably will buy it in the future. (1= *strongly disagree*, 7= *strongly agree)*	Yin et al., 2017

3. For this tour package, I would like to recommend it to my friends.
(1= *strongly disagree*, 7= *strongly agree)*

Appendix E. Means, Standard Deviations, Skewness, and Kurtosis for Key Variables

Study	Measure Items	*M*	*SD*	*Skewness*	*Kurtosis*
Study	***Advertisement type (Manipulation check)***				
2	To what extent do you think these are group tour package / self-guided tour package advertisements?	4.27	2.11	-0.24	-1.27
	To what extent do you think these advertisements contain / do not contain tourists' images?	4.01	2.03	0.11	-1.36
	Purchase intention				
	For this tour package, I would like to buy it.	5.42	1.29	-1.39	1.58
	For this tour package, I probably will buy it in the future.	5.34	1.44	-1.16	1.17
	For this tour package, I would like to recommend it to my friends.	5.19	1.62	-1.26	1.14
Study	***Advertisement type (Manipulation check)***				
3	To what extent do you think these are group tour package / self-guided tour package advertisements?	4.49	1.90	-0.46	-0.91
	To what extent do you think these advertisements contain / do not contain tourists' images?	4.29	2.05	-0.29	-1.23
	Embodied mental simulation				
	When viewing the advertisement, to what extent did images of attending a group tour / self-guided tour in Lijiang come to your mind?	5.37	1.45	-1.24	1.18
	When viewing the advertisement, how much of the experience of attending a group tour / self-guided tour in Lijiang can you imagine?	5.32	1.41	-1.07	0.95
	To what extent while viewing the advertisement could you imagine attending a group tour / self-guided tour in Lijiang?	5.26	1.44	-0.97	0.16
	Purchase intention				
	For this tour package, I would like to buy it.	5.42	1.32	-1.12	1.16
	For this tour package, I probably will buy it in the future.	5.29	1.33	-1.14	1.12

	For this tour package, I would like to recommend it to my friends.	5.11	1.33	-0.95	0.88
Study 4	***Advertisement type (Manipulation check)***				
	To what extent do you think these are group tour package / self-guided tour package advertisements?	4.25	1.96	-0.18	-1.18
	To what extent do you think these advertisements contain / do not contain tourists' images?	3.98	2.14	0.11	-1.40
	Embodied mental simulation				
	When viewing the advertisement, to what extent did images of attending a group tour / self-guided tour in Suzhou come to your mind?	5.49	1.50	-1.18	0.78
	When viewing the advertisement, how much of the experience of attending a group tour / self-guided tour in Suzhou can you imagine?	5.41	1.49	-0.95	0.16
	To what extent while viewing the advertisement could you imagine attending a group tour / self-guided tour in Suzhou?	5.27	1.54	-0.92	0.15
	Purchase intention				
	For this tour package, I would like to buy it.	5.30	1.22	-0.91	-0.04
	For this tour package, I probably will buy it in the future.	5.29	1.60	-0.74	-0.58
	For this tour package, I would like to recommend it to my friends.	5.01	1.72	-0.71	-0.48
	Relevant travel experience				
	I have a lot of experience with group tours / self-guided tours.	4.88	1.37	-0.24	-0.67
	My frequency of group tours / self-guided tours in recent years is on average per year____.	2.03	1.64	0.73	0.18

Appendix F. Participants profiles

	Study 2	**Study 3**	**Study 4**
	N = 160	N = 152	N = 156
Gender			
Male	65 (40.6%)	64 (42.1%)	64 (41.0%)
Female	95 (59.4%)	88 (57.9%)	92 (59.0%)
Age			

0-20	4 (2.5%)	5 (3.3%)	6 (3.8%)
21-30	92 (57.5%)	78 (51.3%)	98 (62.8%)
31-40	44 (27.5%)	51 (33.6%)	35 (22.4%)
41-50	13 (8.1%)	12 (7.9%)	13 (8.3%)
51-60	7 (4.4%)	6 (3.9%)	2 (1.3%)
>60	-	-	2 (1.3%)
Educational level			
Elementary school or below	-	3 (2.0%)	1 (0.6%)
Junior high school	2 (1.3%)	1 (0.7%)	-
High school	3 (1.9%)	3 (2.0%)	1 (0.6%)
Technical school	11 (6.9%)	8 (5.3%)	15 (9.6%)
Undergraduate	120 (75.0%)	106 (69.7%)	105 (67.3%)
Graduate	24 (15.0%)	28 (18.4%)	33 (21.2%)
PhD	-	3 (2.0%)	1 (0.6%)
Job occupation			
Student	46 (28.7%)	36 (23.7%)	36 (23.1%)
Nationalized enterprise	25 (15.6%)	29 (19.1%)	20 (12.8%)
Public institution	10 (6.3%)	5 (3.3%)	10 (6.4%)
Government official	7 (4.4%)	4 (2.6%)	8 (5.1%)
Private enterprise	66 (41.3%)	71 (46.7%)	69 (44.2%)
Foreign enterprise	6 (3.8%)	5 (3.3%)	10 (6.4%)
Freelance	-	2 (1.3%)	3 (1.9%)
Monthly income (RMB)			
0-¥2,000	10 (6.3%)	21 (13.8%)	21 (13.5%)
¥2,001-¥4,000	22 (13.8%)	12 (7.9%)	21 (13.5%)
¥4,001-¥6,000	43 (26.9%)	37 (24.3%)	39 (25.0%)
¥6,001-¥8,000	40 (25.0%)	35 (23.0%)	36 (23.1%)
More than ¥8,000	45 (28.1%)	47 (30.9%)	39 (25.0%)

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