Tourism Management 85 (2021) 104315

Contents lists available at ScienceDirect

Tourism Management

journal homepage: http://www.elsevier.com/locate/tourman

When rich pictorial information backfires: The interactive effects of pictures and psychological distance on evaluations of tourism products

Yanli Jia [a], Jun Ouyang [a,*], Qiang Guo [b]

[a] School of Management, Xiamen University, Fujian, China
[b] Tourism College, Hainan University, Hainan, China

ARTICLE INFO

Keywords:
Pictorial information
Psychological distance
Mental imagery
Tourism product evaluation

ABSTRACT

Using data from five studies (i.e., a pilot study and four experiments), we examine the interactive effects of pictures and psychological proximity on consumers' evaluation of tourism products. The extant literature has suggested that providing rich pictorial information or construing a psychologically proximal tourism product can independently increase consumers' generation of mental images and render a positive attitudinal judgment. However, our findings on the effectiveness of these two strategies in combination are *mixed*. Specifically, we find that if the tourism product is a psychologically distal one, consumers evaluate it more favorably when rich pictorial information is provided than when the information is not available. If the product is a psychologically proximal one, the reverse is true. Our findings, therefore, suggest an important situation that might be intriguing to both tourism product managers and advertisers –when rich pictorial information backfires.

1. Introductions

Pictorial information in a tourism advertisement is important for promoting tourism. For one thing, both prior research findings and anecdotal evidence suggest that greater pictorial information results in more favorable responses to tourism products (Amar, Droulers, & Legohérel, 2017; Decrop, 2007; Goossens, 1995; Huang, Busby, & Bosdou, 2009; Li, Huang, & Christianson, 2016; Michael, Ramsoy, Stephens, & Kotsi, 2019). This effect occurs because rich pictorial information allows tourism consumers to virtually transport themselves to a travel destination where they have never been and supports the formation of concrete sensory experiences (Cheung, Ting, Cheah, & Sharipudin, 2020; Yao, Qiu, Fan, Liu, & Buhalis, 2019). For another thing, the rise of Information and Communication Technologies (ICT) (Buhalis & Licata, 2002; Navío-Marco, Ruiz-Gómez, & Sevilla-Sevilla, 2018; Peck, Barger, & Webb, 2013) makes it easier and less costly for tourism managers to introduce a tourism product visually (Au, Buhalis, & Law, 2014; Inversini & Buhalis, 2009, pp. 381–392; Michopoulou & Buhalis, 2013; Qi, Law, & Buhalis, 2008). Consequently, tourism managers have already increased the pictorial richness of their tourism products on various online platforms, such as using proprietary pictures (either static or animated), three-dimensional technologies, or even Augmented Reality (AR)/Virtual Reality (VR) in tourism and travel (Buhalis et al., 2019; Chiou, Wan, & Lee, 2008).

Although pictorial information is a well-established predictor of imagery of tourism products (Babin & Burns, 1997; Iordanova & Stylidis, 2019; Lutz & Lutz, 1977, 1978; MacInnis & Price, 1987; Yousaf, Amin, Jaziri, & Mishra, 2020), consumers' imagery processing could also be induced by other available strategies, such as concrete descriptions (Adaval & Wyer, 1998; Burns, Biswas, & Babin, 1993; Jia, Huang, Wyer, & Shen, 2017; Paivio, 1971; Paivio & Foth, 1970), instructions to imagine (Escalas, 2004; Jiang, Adaval, Steinhart, & Wyer, 2014; Kisielius & Sternthal, 1984; Wright & Rip, 1980), or sound effects (Hubbard, 2010; Miller & Marks, 1997; Reisberg, 2014; Zatorre & Halpern, 2005). More relevant to tourism products, another strategy for imagery is to frame a travel event as a psychologically proximal one. As suggested by construal level theory (Fujita, Henderson, Eng, Trope, & Liberman, 2006; Trope & Liberman, 2010; Yan, Sengupta, & Hong, 2016), a psychological proximal tourism product refers to the travel that occurs either in the near (vs. distant) future (i.e., temporal proximity) or to a near (vs. distant) destination (i.e., spatial proximity). Some recent investigations (Lee, Fujita, Deng, & Unnava, 2016; Yan et al., 2016), based on construal level theory, suggest that people are likely to engage in more vivid mental imagery of a psychologically proximal (vs. distal) event. For example, they could form more mental images of a travel that occurs on the next day than the one that occurs a year from now.

* Corresponding author. School of Management, Xiamen University, 422 Siming-South Road, Siming District, Xiamen, Fujian, 361005, China.
E-mail addresses: ouyangjun1209@163.com, 33720160153915@stu.xmu.edu.cn (J. Ouyang).

https://doi.org/10.1016/j.tourman.2021.104315
Received 24 September 2020; Received in revised form 26 January 2021; Accepted 7 March 2021
Available online 21 March 2021

What we investigate in the present article is how consumers generate mental imagery of a tourism product and subsequently form attitudinal judgments if both pictorial information and proximity information (e.g., close travel destination or immediate departure date) are provided. Notably, we specifically focus on proprietary pictures used by tourism managers on their online platforms rather than other types of pictorial information (e.g., pictures generated by consumers on various social media sites). The investigation of the integration of proprietary pictures and proximity information is critical given that these two types of information are among the most important elements in tourism advertisements. To develop more effective advertising appeals, marketers must understand whether the two strategies in combination would have a beneficial or detrimental impact on consumers' imagery processing. What is surprising is that although there is an extensive body of research in both marketing and social psychology that investigates the impact of pictorial information and proximity information independently (Babin & Burns, 1997; Lee et al., 2016; Lutz & Lutz, 1977, 1978; MacInnis & Price, 1987; Yan et al., 2016), no work to the best of our knowledge has specifically addressed their interactive effect. Thus, what consumers "see" when they are provided with both types of information in an advertisement is largely unknown. Our research attempts to fill this gap.

With regard to the two strategies in combination, intuition might suggest an addictive effect on consumers' imagery processing and subsequently on their attitudinal judgments. The present research, however, postulates a more nuanced hypothesis; that is, while consumers would evaluate a psychologically distal tourism product more favorably when rich (vs. poor) pictorial information is provided, they would evaluate a psychological proximal product more favorably when poor (vs. rich) pictorial information is provided.

The effects we propose are driven by the fact that a proximal tourism product is more likely to activate vivid mental imagery (Lee et al., 2016; Yan et al., 2016) and the construction of visual images requires cognitive effort (Keller & Block, 1997; McGill & Anand, 1989). Consequently, to the extent that consumers have formed mental imagery of the proximal tourism product, they may be more likely to feel cognitively overload. Subsequently, rich (vs. poor) pictorial information might intensify this cognitive load, making consumer even more difficult to incorporate the information into visualizations and leading them to evaluate the product less favorably. By contrast, a distal tourism product may be less likely to stimulate visual processing, and therefore consumers should have sufficient cognitive capacity to further process pictorial information. Consequently, to the extent that the externally-provided pictures are rich, consumers are likely to form vivid mental representations of the trip and favorable evaluations of it. In the present research, after demonstrating how tourism managers use different amount of pictorial information to feature tourism products in the real world of business (i.e., the pilot study), we used four experimental studies to test the above hypotheses.

Our research advances knowledge from several perspectives. First, although a plethora of prior work confirms the beneficial consequences of pictorial information in promoting tourism products (Decrop, 2007; Huang et al., 2009), the present research identifies a particular condition in which rich pictorial information might backfire. It is critically important for tourism marketers to understand when pictures can effectively increase consumers' evaluation of a tourism product and when pictures do not work or are even disadvantageous, and to design persuasive tourism appeals that can successfully compete in the limited tourism information space. Second, it adds to prior research on mental imagery by showing that mental images generated internally based on previously-acquired knowledge might inhibit the those from externally-provided information (e.g., pictures), and inducing both might sabotage people's generation of mental imagery. To the best of our knowledge, the present research is the first to demonstrate that these two imagery-provoking strategies in combination become ineffective. Finally, by applying construal level theory in the domain of tourism management, this research deepens our understanding of the contexts in which construal level theory is likely to exert an influence.

2. Theoretical background and hypotheses

Mental imagery refers to a quasi-perceptual experience that involves the generation of picture-like representations in the mind, thereby allowing people to "see" something they have not experienced before (Kosslyn, 1976). Providing a holistic construction that serves to unify otherwise scattered stimuli in a meaningful association (Bower, 1970, 1972), imagery processing has been documented to induce a number of positive outcomes. For example, it can enhance memory for various stimuli (Childers & Houston, 1984; El Haj, Gallouj, & Antoine, 2019; Kosslyn, Behrmann, & Jeannerod, 1995; Levin & Divine-Hawkins, 1974; Lewinsohn, Danaher, & Kikel, 1977; Paivio, 1969) and facilitate incidental learning (Ernest & Paivio, 1969; Goldberg, 1974; Marks, 1973). Moreover, it can render favorable attitudinal judgments (Jiang, Gorn, Galli, & Chattopadhyay, 2016; Rossiter & Percy, 1980; but see Kisielius & Sternthal, 1986 for a contingency of the effect) and increase the effectiveness of a business appeal (De Graaf, Hoeken, Sanders, & Beentjes, 2009; Hung & Wyer, 2009; Mazzocco, Green, Sasota, & Jones, 2010; Scott & Batra, 2003). The evocation and vividness of images, however, relies not only on multiple external sources but also on previously-acquired knowledge. The following discussions summarize prior literature from these two perspectives.

2.1. Pictures as an external source of mental imagery

The construction of vivid mental images relies on multiple external sources (Lutz & Lutz, 1977; MacInnis & Price, 1987). For example, concrete verbal descriptions and details of a target can stimulate the generation of imagery associated with the target (Jia et al., 2017; Lee & Qiu, 2009; Unnava & Burnkrant, 1991; Wyer, Hung, & Jiang, 2008). Including sound effects in radio advertisements (e.g., crunching sounds of eating potato chips) can also increase imagery activity in listeners (Miller & Marks, 1992, 1997). Particularly germane to our focus, presenting pictures of various situations can also represent an external source for the generation of imagery. For example, consumers' imagery of using a product can spontaneously occur when they are exposed to pictures of the product (Babin & Burns, 1997; Elder & Krishna, 2012; Li et al., 2016; MacInnis & Price, 1987; Peck et al., 2013). Moreover, pictures can range from very concrete and realistic to abstract. To the extent that pictures are rich in cues and contents, the mental images formed based on them are vivid and can be easily retrieved for future use (Babin & Burns, 1997; Keller & Block, 1997; Michael et al., 2019; Paivio, 1969; Paivio & Csapo, 1969; Petrova & Cialdini, 2005; Radvansky & Zacks, 1991).

3. The role of psychological proximity in stimulating mental images

However, the mental images that individuals form of various situations might be influenced not only by the external information of these situations (e.g., pictures, concrete descriptions, sound, etc.), but also by individuals' already existing knowledge structure or schema (Baddeley & Andrade, 2000; Burns et al., 1993; Lee & Gretzel, 2012; MacInnis & Price, 1987). For example, some researchers (e.g., Dahl & Hoeffler, 2004; Escalas, 2004; Sherman, Cialdini, Schwartzman, & Reynolds, 1985) have found that explicitly instructing participants to imagine an object can enhance the availability of existing knowledge related to the object and stimulate their mental imagery of the object. To the extent that individuals are familiar with the object and have accumulated considerable knowledge related to it, the mental images associated with the object are likely to come into their mind; otherwise, the imagery processing might not occur. Wright and Rip's (1980) non-significant results concerning instructions to imagine an *unfamiliar* product provide direct evidence for this possibility.

Moreover, mental images can also be formed spontaneously in the course of construing various targets that differ on four dimensions of psychological proximity (i.e., temporal, spatial, social, and hypothetical). According to construal level theory (Trope, Liberman, & Wakslak, 2007; Trope & Liberman, 2010), psychologically proximal targets include those that occur in the near future (i.e., temporal proximity; Liberman, Sagristano, & Trope, 2002; Semin & Smith, 1999), that occur in a close location (i.e., spatial proximity; Fujita, Henderson, Eng, Trope, & Liberman, 2006), that occur to people like oneself (i.e., social proximity; Fiedler, Semin, Finkenauer, & Berkel, 1995), or that are likely to occur (i.e., hypothetical proximity; Wakslak, Trope, Liberman, & Alony, 2006). In the present research, we do not consider all four dimensions, but only focus on spatial and temporal dimensions that have been commonly used in practice to feature a tourism product (Duke & Persia, 1994; Jordan, Bynum Boley, Knollenberg, & Kline, 2018; Rihova, Buhalis, Gouthro, & Moital, 2018). To reiterate, if a tourism product has either a close travel destination (i.e., spatial proximity) or an immediate departure date (i.e., temporal proximity), consumers would perceive it to be psychologically proximal.

Construal level theory (Liberman, Trope, & Stephan, 2007; Trope & Liberman, 2010) suggests that people can construe a target object with different psychological distance at different levels of construal. Specifically, when processing a distal object, people tend to process it at the high-level construal, and to extract the abstract gist of it. As the object becomes more proximal, by contrast, individuals engage in low-level construal, and tend to focus on the concrete features of it. Mental imagery usually functions in representing more concrete features than abstract gist (Libby & Eibach, 2013; Wyer et al., 2008; Yan et al., 2016). Consequently, Yan et al. (2016; see also Amit, Algom, & Trope, 2009) find that consumers tend to employ a visual information processing mode and generate greater mental imagery of a psychologically proximal event than of a psychologically distal one. This finding is echoed in another study by Lee et al. (2016). Specifically, that study demonstrates that consumers' mental imagery of the near future is relatively more vivid (i.e., colorful) than that of the distant future. This is because when events were temporally distant, consumers engaged in high-level construal and focused on high-level information about shape, resulting in less vivid imagery (i.e., black and white), if any.

Proximal events facilitate mental imagery as a result of a learned association. The association initially stems from the fact that individuals often feel uncertain about distal events and thus have to retrieve and rely on general (rather than detailed) information. Information that is not detailed enough might not stimulate the construction of a clear image based on it (Jia et al., 2017; Lee & Qiu, 2009; Reyes, Thompson, & Bower, 1980). Such non-vivid mental representation, however, has functional benefits as it allows potential adjustments if things are changed in the future. By contrast, individuals usually feel certain about proximal events and subsequently construct clear visual representations based on information that is more detailed. With repeated use, the association between psychological proximity and mental imagery becomes over learned and generalizes even to conditions in which there is no obvious knowledge difference between proximal and distal targets.

This learned association account implies not only can psychological proximity impact imagery processing, but also the vividness of mental representations can influence people's perception of an event's psychological distance. For example, Alter and Balcetis (2011) document that to the extent that people find a location appealing and can vividly imagine it, they are likely to perceive the location as near in comparison to equidistant unappealing ones.

The studies reviewed to this point suggest that either pictorial information or proximal events can be effective in stimulating people's mental imagery. However, the impacts of the two strategies in combination on imagery may become more complicated. Little previous research bears directly on this possibility. In the present research, participants were exposed to a tourism product (either proximal or distal) and were provided with pictorial information (i.e., proprietary pictures) of the product (either rich or pallid). In this case, we postulate that the provision of rich pictorial information might increase consumers' mental imagery of a distal product, but decrease their mental representations of a proximal one. We will elaborate on why this might be in detail below.

4. The effects of pictures and psychological proximity: additive or interference?

As stated above, a plethora of prior work (Chang, 2013; Lee & Gretzel, 2012; Miniard, Bhatla, Lord, Dickson, & Unnava, 1991) suggests that pictures are a strong catalyst for eliciting visual imagery because they provide direct visual images for the viewer and therefore contain rich cues from which imagery processing can result. Consequently, it appears self-evident that rich pictorial information would be more effective than pallid pictorial information in the generation of mental imagery. Notably, however, this may be the case only when people construe a psychologically distal tourism product. When construing such a product, people are less likely to engage in vivid mental imagery at first and thus they should have sufficient cognitive capacity to process the pictorial information that is provided latter. Therefore, more pictures are likely to activate more mental images of the product, subsequently inducing a more favorable judgment (Li, Lien, Wang, Wang, & Dong, 2020; Nazneen, Xu, & Ud Din, 2020; Qian, Law, Wei, Shen, & Sun, 2020).

In contrast, construing a psychologically proximal tourism product requires people to retrieve previously acquired knowledge in detail and to form vivid mental representations (Amit et al., 2009; Lee et al., 2016; Yan et al., 2016). The construction of vivid mental images, however, depletes cognitive resources (Keller & Block, 1997; McGill & Anand, 1989; Michael et al., 2019). For example, asking people to remember a 9-digit number can tax their cognitive resources and prevent them from constructing an image (Jia et al., 2017; Shiv & Huber, 2000). Non-experiential (vs. experiential) information in a persuasive appeal can also increase cognitive load and thus inhibit people's formation of a vivid mental image (Petrova & Cialdini, 2005). To this end, mentally representing a psychologically proximal tourism product depletes people's cognitive resources and limits their capacity to process rich (vs. pallid) pictorial information that is provided later. Consequently, to the extent that the externally-provided pictures are rich in content, people would find it cognitively difficult to incorporate them into their visualizations and subsequently would evaluate the product less favorably.

To summarize, we postulate that although providing rich (vs. pallid) pictorial information of a distal tourism product would enhance consumers' imagery processing of the product and their evaluation of the product, providing rich (vs. pallid) pictorial information of a proximal product would inhibit the imagery processing of the product, leading to less favorable attitudinal judgments. Formally, we state the following hypotheses:

H1. (a): When a tourism product is perceived as a psychologically distal one, consumer will evaluate it more favorably if rich pictorial information is provided than if pallid pictorial information is provided. H1(b): When a tourism product is perceived as a psychologically proximal one, consumer will evaluate it less favorably if rich pictorial information is provided than if pallid pictorial information is provided.

H2. The interaction effect of pictures and psychological proximity on the evaluation of the tourism product was mediated by the level of consumers' mental imagery of the product.

This view is consistent with several previous studies investigating the effects of pictures on people's attitudinal judgments. In general, these studies suggest that when the imagery processing relies on stored knowledge independent of externally-provided pictures, using pictures of various stimuli and retrieving previously acquired knowledge for mental imagery might interfere with each other, leading to a null effect of pictorial information on mental imagery and subsequently on attitudinal judgments. For instance, Miniard et al. (1991) find evidence that pictures increase evaluations of products only when recipients have little personal interest in the information presented and are not motivated to retrieve their previously acquired knowledge for mental imagery. When participants are more motivated to process the information, pictures have little impact. A similar inference emerges in a study reported by Unnava and Burnkrant (1991). They find that pictures that exemplify product attribute information in an advertisement can enhance advertisement recall only when verbal information is low in imagery. When the verbal information is high in imagery, the self-generated images nullify the effect of the externally-provided pictures on advertisement recall.

4.1. Overview of studies

A pilot study and four experiments were conducted and reported in the present research. In the pilot study, we crawled the data from a large online travel agency in China (tuniu.com). The results demonstrated that tourism managers tended to provide rich (vs. pallid) pictorial information for a distal (vs. proximal) tourism product. But whether this practice can effectively improve people's evaluation of the tourism product is less clear than what might first be assumed. Therefore, we conducted four experimental studies to evaluate the effectiveness of the practice. The first two studies (Experiments 1a & 1b) used eye-tracking data to confirm the nature of the imagery processing that underlies the effects we proposed. The last two studies (Experiments 2 & 3) provided direct evidence for our focal hypotheses, showing that pictures increased (vs. decreased) participants' evaluation of a distal (vs. proximal) tourism product, through their impact on mental imagery.

5. Pilot study: panel data from tuniu

To understand how tourism managers promote their products in the real world of business, we conducted an initial pilot study. The pilot study used data crawled from Tuniu, a leading online travel agency in China. Tuniu provides an online platform on which consumers can book tourism products and share their travel experience. Founded in 2006, Tuniu has become one of the largest online travel agencies in China. According to China's iResearch,[1] Tuniu ranks first in package tours, with 34.8% market share, and second in online revenue behind the market leader, Ctrip. Tuniu has successfully provided more than 1 million tourism products and served more than 15 million people.[2]

Like other online travel agencies (e.g., Trip Advisor), Tuniu releases new deals on a daily basis. It also provides hundreds of last-minute deals every day to promote existing products. The last-minute deals we observed differed in various dimensions (e.g., travel destination, duration, price, etc.), but they all had an immediate departure date (e.g., only one week or even just a few days left before the departure date). Fortunately, for each of these promoted deals, we could track the original webpage where the deal was released for the first time. That is, we could obtain the data of a particular deal from two sources: the original webpage and the promoted webpage. Notably, tourism managers disclose different sets of information promoting the same product on these two webpages, allowing us to examine any information difference (please see Appendix A for an illustration). In this way, we crawled the data of the latest 100 last-minute deals each day from April 22 to April 26, 2019 (i.e., five consecutive days). The particular time period was selected because it was one week before International Labor Day, a public holiday around which many Chinese consumers prefer to travel. In total, we obtained 1000 data points (i.e., 500 unique tourism products with no duplicates).

5.1. Operationalization of constructs

Temporal distance. Temporal distance (−1 = proximal, 1 = distal) was coded according to the departure date of a particular tourism product. A product was coded as distal when its information was presented on the original webpage, and was coded as proximal when the information was disclosed on the promoted webpage. In the first situation, the product information was first released with a relatively distal departure date. In the second situation, however, the departure date was immediate.

Spatial distance. Spatial distance (−1 = proximal, 1 = distal) was coded according to how far the travel destination was for Chinese consumers. A product was coded as −1 if its travel destination was domestic, and was coded as 1 if its destination was international.

Pictorial richness. Pictorial richness was operationalized as the total number of landscape pictures available on a particular webpage. We categorized all pictures into three groups: landscape, food, and accommodation. Notably, in both the current study and those that follow, we focused on landscape pictures, because either food or accommodation is subject to change and availability. For example, Tuniu often provides two or more hotel/food options in one tourism product and indicates that consumers may later get any of them depending on availability. In this case, consumers might not consider the information of food and accommodation very seriously because of high uncertainty.

To control for variables that might influence the number of pictures provided but are not related our interest, we included two control variables: price and travel duration.

6. Results and discussion

Before the analyses, all the variables were standardized. Using a regression analysis, we examined the effects of temporal distance and spatial distance on the number of pictures provided. We first estimated the baseline model with the variables indicating temporal distance and spatial distance. In order to examine any interaction effect, we created an interaction term by multiplying the two variables and added it in model 2. Then we included two control variables in model 3.

$$Pictorial\ richness = \beta_1 \times temporal\ distance + \beta_2 \times spatial\ distance + w \quad (1)$$

$$Pictorial\ richness = \beta_1 \times temporal\ distance + \beta_2 \times spatial\ distance + \beta_3 \times temporal\ distance \times spatial\ distance + w \quad (2)$$

$$Pictorial\ richness = \beta_1 \times temporal\ distance + \beta_2 \times spatial\ distance + \beta_3 \times temporal\ distance \times spatial\ distance + \beta_4 \times price + \beta_5 \times travel\ duration + w \quad (3)$$

The results of the regression analysis are summarized in Table 1. The results of model 2 indicate that temporal distance had a significant

[1] http://report.iresearch.cn/wx/report.aspx?id=3214.

[2] https://www.forbes.com/sites/simonmontlake/2013/10/15/oxen-aggregator-selling-tours-to-chinas-group-travellers/#7624fd3c8eca.

Table 1
Summary of results of pilot study.

Variables	Model 1	Model 2	Model 3
Temporal distance	.64*** (p < .001)	.64*** (p < .001)	.64*** (p < .001)
Spatial distance	.19*** (p < .001)	.19*** (p < .001)	.07* (p < .05)
Temporal distance × Spatial distance		.04 (p > .05)	.04 (p > .05)
Travel duration			.26*** (p < .001)
Price			-.05 (p > .10)
Number of records	1000	1000	1000
Adjusted R^2	.44	.44	.48

positive effect on pictorial richness ($\beta = 0.64$, $t = 26.82$, $p < .001$); that is, the more a tourism product was temporally distal to consumers, the more pictures were available. Spatial distance also had a significant positive effect ($\beta = 0.19$, $t = 7.83$, $p < .001$), suggesting that more pictures were provided when a product's travel destination was international than when it was domestic. The interaction term was not significant ($\beta = 0.04$, $t = 1.85$, $p = .07$). Notably, after including two control variables (i.e., price and travel duration), the conclusions did not significantly change although we did find a significant positive effect of travel duration ($\beta = 0.26$, $t = 8.35$, $p < .001$) and a null effect of price ($\beta = -0.05$, $t = -1.45$, $p = .15$).

The results provided initial evidence supporting our hypothesis. That is, tourism managers provided more pictures when the advocated tourism product was psychologically distal than when it was psychologically proximal. However, it remained unclear how this practice would be effective in eliciting consumers' imagery processing of a tourism product and subsequently positive reactions to the product, which led to the design of the following experimental studies.

7. Experiment 1

In Experiment 1, Eye-tracking measures were used to provide evidences in support of our conceptualization that participants' construal of a psychologically proximal (vs. distal) tourism product might have a detrimental effect on their capacity to process the externally-provided pictorial information. Eye-tracking is a tool that monitors participants' eye movements to understand their visual processing behaviors (Li et al., 2016; Scott, Zhang, Le, & Moyle, 2019; Wang, Tsai, & Tang, 2018, 2019). If individuals could by themselves generate greater mental imagery of a proximal target than that of a distal one, they might feel greater cognitive load and then be less likely to visually process the externally-provided pictorial information in the first situation compared to the second one.

7.1. Experiment 1a: proximal vs. distal travel destination

Participants and design. Fifty-nine Chinese college students took part in the study for a small monetary incentive and were randomly assigned to read a colored advertisement on computer that featured either a proximal seaside resort or a distal one. All participants were asked to imagine that they were planning a seaside resort tour, and their travel agency incidentally suggested a place where they had never been before. Participants in the proximal condition read "it is a nearby seaside resort", whereas those in distal condition read "it is a seaside resort in another country and distant from where you live." They then read an advertisement for the resort, which was actually the same regardless of condition. The advertisement (presented in Chinese) contained a headline ("Happiness is simple") at the top, twenty pictures of the resort taken from different perspectives in the middle, and the agency logo with text at the bottom. No other information (e.g., departure date) was provided. See Appendix B for details of the advertisement.

Participants were asked to read the advertisement and to indicate their evaluation of the resort. Their eye movements while reading the advertisement were recorded by a Tobii X2-60 eye tracker system with a 60 Hz sampling rate. Before the resort advertisement was shown, however, several calibration procedures were conducted (Wedel & Pieters, 2008). First, to keep participants' eyes on the screen in the study, we told them that a hidden camera on the computer monitor would record their behaviors to ensure the data collection was good in quality. To this end, they were not allowed to move around in the seat. In addition, we calibrated the eye-tracking device by asking participants to focus on five red dots that were presented sequentially in different areas of the computer screen. We told participants that this calibration exercise was conducted to ensure the video quality. After these procedures, participants were exposed to the advertisement and asked to examine it at their own pace. After viewing the advertisement, participants completed several attitudinal questions to help maintain the cover story. They also reported how far away the seaside resort is from where they live, from 1 (very close) to 7 (very far away). As expected, they perceived the seaside resort to be spatially closer to them in the proximal condition ($M = 3.97$, $SD = 1.64$) than in the distal condition ($M = 6.20$, $SD = 1.56$; $F(1, 57) = 28.79$, $p < .001$, partial $\eta^2 = 0.336$).

Results. The time participants spent reading the advertisement and their eye movement was recorded by the eye tracker. Their eye movements would be categorized into areas of interest which had been defined a priori (Scott et al., 2019). Twenty-two areas of interest were defined: twenty for the twenty pictures presented in the advertisement, and two for verbal content (i.e., one for the headline and the other for the logo with text). The amount of time the eye dwelt on each area (fixations) was recorded.

Descriptive analysis suggested that participants spent an average of 15.72 s reading the advertisement: 11.98 s for the pictorial information and 3.74 s for the non-pictorial information (i.e., the headline and the logo with text). As expected, analysis of participants' reading time for pictorial information revealed a significant effect of spatial distance ($F(1, 57) = 14.93$, $p < .001$, partial $\eta^2 = 0.208$); that is, participants spent more time reading the advertisement of a distal seaside resort ($M = 16.45$, $SD = 11.26$) than that of a proximal one ($M = 7.35$, $SD = 5.93$). However, their reading time for non-pictorial information did not significantly differ between the proximal condition ($M = 3.16$, $SD = 3.09$) and the distal condition ($M = 4.30$, $SD = 3.80$; $F(1, 57) = 1.59$, $p = .21$).

Similarly, analysis of the number of pictures that meet the eye revealed that participants tended to visually scan a larger number of pictures in the distal condition ($M = 17.37$, $SD = 3.13$) than in the proximal condition ($M = 13.24$, $SD = 5.12$; $F(1, 57) = 14.05$, $p < .001$, partial $\eta^2 = 0.198$). Please see Fig. 1 for an illustration. However, it takes at least 1 s for the visual information that meets their eyes to be transmitted to visual working memory and to be used in other cognitive processes (Schnotz, 2005; Shaffer & Shiffrin, 1972). To this end, we further calculated the number of pictures that participants stayed focused on for more than 1 s and thus might have consciously processed. The results revealed that participants appeared to consciously process more pictures if they read an advertisement of a distal resort ($M = 6.23$, $SD = 5.79$) than if they read an advertisement of a proximal one ($M =$

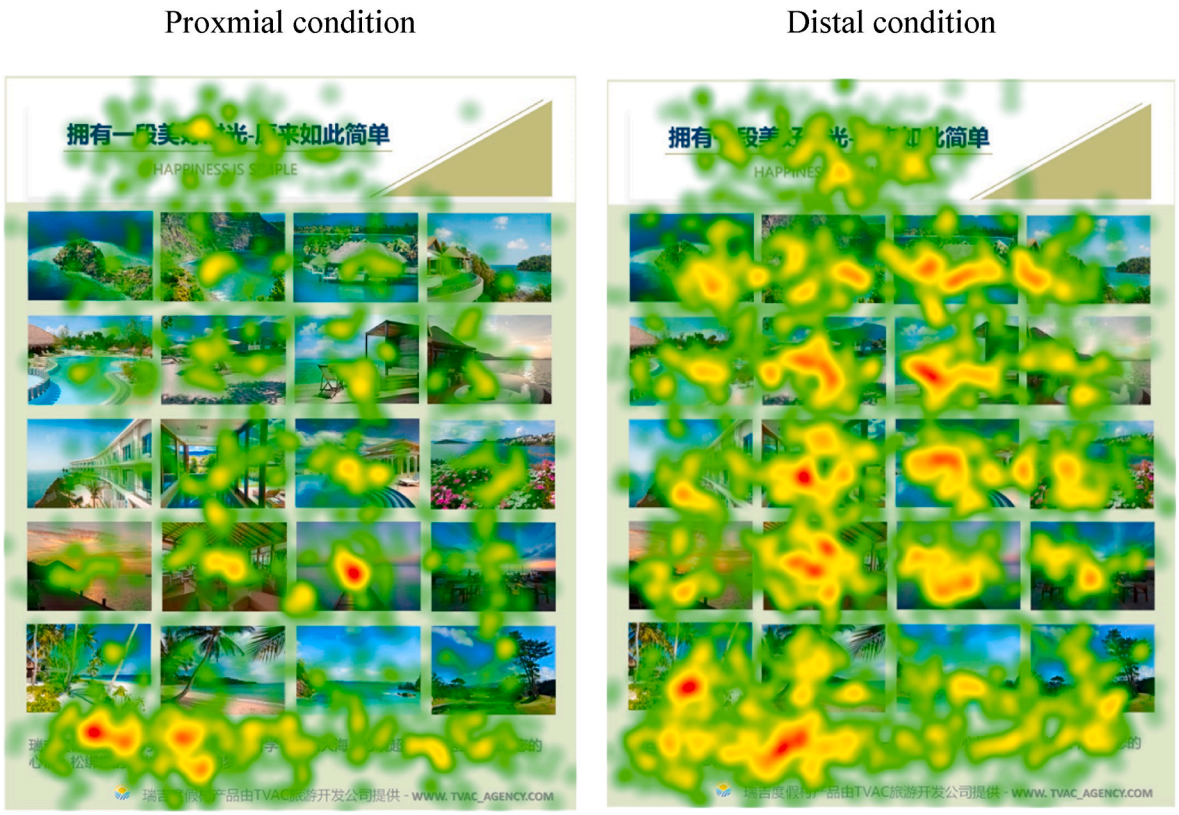


Fig. 1. Heat map analysis in proximal and distal conditions of Experiment 1a.

1.69, $SD = 2.52$; F (1, 57) = 15.10, $p < .001$, partial $\eta^2 = 0.209$).

7.2. Experiment 1b: proximal vs. distal departure date

The procedures and instructions of Study 1b were essentially the same as in Study 1a, with the following exceptions. First, the independent variable of distance was operationalized via the temporal dimension (i.e., the proximal vs. distal departure date of a tourism product). Second, to examine the effect of imagery processing on participants' cognitive load, we asked participants to report the extent to which they felt information overload while completing the advertisement evaluation task.

Participants and design. Sixty-two Chinese college students participated for a small monetary incentive. Because of insufficient calibration and incomplete recording of eye movements, the data from one participant was discarded, leaving sixty-one participants for data analysis.

As in Study 1a, participants were asked to read an advertisement for a seaside resort tour on computer and to evaluate it. Unlike in Study 1a, however, the tour was portrayed as departing either in the next week (*proximal* condition) or in six months (*distal* condition). No specific location information was provided. Before the advertisement was shown to participants, the same calibration procedures were conducted to ensure the eye tracker performed well. Participants then read an advertisement which was similar to that used in Study 1a. Their eye movements while reading were recorded by the eye tracker.

After viewing the advertisement, participants reported their cognitive load while reading the advertisement by responding to two items adapted from Schmeck, Opfermann, van Gog, Paas, and Leutner (2015): 1) how much mental effort did you invest in browsing the advertisement? (1 = very low mental effort, 7 = very high mental effect); and 2) to what extent did you experience difficulty in browsing the advertisement? (1 = very easy, 7 = very difficult). The two items were averaged to create a single index of participants' cognitive load, $r = 0.61$. Finally, they indicated when the tour would start from 1 (in a very short time) to 7 (in a very long time). Consistent with our expectation, participants perceived the tour to start more immediately in the proximal condition ($M = 3.90$, $SD = 1.63$) than in the distal condition ($M = 4.75$, $SD = 1.30$; F (1, 59) = 5.16, $p < .05$, partial $\eta^2 = 0.080$).

Results. Descriptive analysis suggested that participants spent an average of 18.06 s reading the advertisement: 15.39 s for pictorial information and 2.68 s for non-pictorial information. Analysis of their reading time for pictorial information revealed that participants spent more time looking at pictures of a temporally distal tour ($M = 22.27$, $SD = 18.78$) than those of a temporally proximal one ($M = 7.79$, $SD = 7.72$; F (1, 59) = 14.94, $p < .001$, partial $\eta^2 = 0.202$). However, analysis of their reading time for non-pictorial information did not significantly differ between the two conditions ($M_{proximal} = 2.14$, $SD = 2.26$ vs. $M_{distal} = 3.17$, $SD = 2.68$; F (1, 59) = 2.63, $p = .11$).

The similar analysis of number of scanned pictures suggested that participants visually scanned more pictures in the distal condition ($M = 17.94$, $SD = 3.21$) than in the proximal condition ($M = 12.66$, $SD = 6.14$; F (1, 59) = 18.20, $p < .001$, partial $\eta^2 = 0.236$). The number of pictures participants focused on for more than 1 s was also examined. The results showed they appeared to consciously process more pictures in the first condition ($M = 7.88$, $SD = 6.34$) than in the second ($M = 2.34$, $SD = 3.68$; F (1, 59) = 16.90, $p < .001$, partial $\eta^2 = 0.223$).

Finally, analysis of participants' self-reported cognitive load indicated that they felt greater cognitive load in the proximal condition ($M = 2.74$, $SD = 1.39$) than in the distal condition ($M = 2.05$, $SD = 1.19$; F (1, 59) = 4.40, $p < .05$, partial $\eta^2 = 0.069$).

8. Discussion

To reiterate, we proposed that participants were more likely to engage in imagery processing of a proximal tourism product than a distal one. The imagery processing, however, might deplete cognitive resources and make it more difficult for participants to further process the externally-provided pictures in the first situation than in the second one.

The results showed that participants reported greater cognitive load and they did scan/process fewer pictures in the first situation than in the second one provided converging evidence for our proposition. However, as neither of the studies demonstrated a downstream effect on consumers' product evaluation, we designed Experiments 2 and 3.

9. Experiment 2

Experiments 2 and 3 sought to investigate the marketing implications of the foundational premise. In particular, Experiment 2 examined whether pictures would increase consumers' evaluation of a tourism product with a distal departure date but decrease their evaluation of a tourism product with a proximal departure date. It also examined the role that mental imagery might play in these effects.

9.1. Design and method

Three hundred forty-seven Chinese college students participated for a small monetary reward. We used Sojump software to implement a 2 (temporal distance: proximal vs. distal) × 2 (pictorial richness: rich vs. pallid) between-subjects design. Participants were randomly assigned to one of the four experimental conditions.

Participants were presented with an advertisement online concerning a trip to an unknown island and were asked to evaluate it. The trip was portrayed as departing either in the next week (*proximal* condition) or in six months (*distal* condition). Based on the results obtained from Experiment 1b, participants on average process eight pictures in the distal condition and two pictures in the proximal condition. Therefore, along with a brief description of the island, the advertisement included either eight pictures (*rich* condition) or two pictures (*pallid* condition) of its beautiful landscape. It is worth noting that the eight pictures in the rich condition were selected from the pictures used in Experiment 1b that had the longest time of eye fixation. The two pictures in the pallid condition were selected from a random subset of the pictures in the rich condition to reduce the likelihood that findings in the pallid condition would be due to some artifact of the stimuli. That is, we designed a total of 28 versions of the advertisement in the pallid condition, and then pooled over them to create the pallid condition. No other information about the tourism product was provided. All stimuli were presented in Chinese. For detailed contents of the trip advertisements, please see Appendix C.

After reviewing the advertisement, participants indicated their evaluation of the tourism product by responding to five items: 1) how do you evaluate this tourism product? (1 = very unfavorable, 7 = very favorable); 2) how do you like this tourism product? (1 = dislike it very much, 7 = like it very much); 3) how do you find this tourism product? (1 = very negative, 7 = very positive); 4) how much are you willing to pay for this tourism product? (1 = not at all, 7 = very much); and 5) to what extent would you like to recommend the tourism product to others (e.g., your friends or family members)? (1 = not at all, 7 = very much). Their responses to the five items were averaged to form a composite index of product evaluation ($\alpha = 0.85$).

In order to test our suggested process, we asked participants to estimate the vividness of the images they formed of the tourism product by responding to three items adapted from Ellen and Bone (1991): 1) how vividly could you imagine yourself traveling in the place indicated in the advertisement? 2) how clearly could you imagine yourself visiting the place? and 3) how detailed could you picture what your trip to the place would be like? Responses to these items were reported along a scale from 1 (not at all) to 7 (very much), and were averaged ($\alpha = 0.86$). Next, participants reported their sense of cognitive overload when reading the advertisement by responding to the same set of items adopted in Experiment 1b ($r = 0.47$).

Participants also responded to a battery of other questions. Specifically, prior research has suggested that to the extent that consumers are familiar with a tourism product and have accumulated considerable knowledge related to it, the mental images associated with the product are likely to come into their mind (Dryglas & Lubowiecki-Vikuk, 2019; Iordanova & Stylidis, 2019; Kim, Lehto, & Kandampully, 2019; Wang, Li, Wu, & Wang, 2020; Wright & Rip, 1980). To this end, participants responded to three questions assessing their familiarity with the target tourism product, including how familiar/knowledgeable/experienced they felt with island tours before reading the advertisement, using a 7-point scale (1 = not at all, 7 = very much). Their responses to these items were averaged ($\alpha = 0.89$), and were included as a covariate.

Additionally, they completed the style-of-processing (SOP) scale developed and validated by Childers, Houston, and Heckler (1985). The scale assesses people's propensity to process information visually versus verbally and can predict to what extent people can mentally imagine an object (Jiang & Wyer, 2009). It contains 22 items, 11 of which assess the propensity to process visually and the other 11 of which assess the propensity to process verbally. As Childers et al. (1985) suggest, we inferred the relative disposition to process information visually from the difference between the mean response to the visual items and the mean response to the verbal items. We also included this variable as a covariate.

Finally, participants reported how much pictorial information was presented in the advertisement (1 = very little, 7 = very much) and when the trip would start (1 = in a very short time, 7 = in a very long time) as checks of our manipulations.

10. Results

Manipulation checks. The results showed that our manipulations were successful. Participants perceived the trip to start more immediately in the proximal condition ($M = 4.38$, $SD = 1.70$) than in the distal condition ($M = 5.05$, $SD = 1.47$; F (1, 343) = 15.08, $p < .001$, partial $\eta^2 = 0.042$). Neither the main effect of pictorial richness ($F < 1$) nor its interaction with temporal distance (F (1, 343) = 2.24, $p = .136$) was significant.

In addition, participants reported seeing more pictures in the rich condition ($M = 4.98$, $SD = 1.16$) than in the pallid condition ($M = 4.59$, $SD = 1.46$; F (1, 343) = 7.31, $p < .01$, partial $\eta^2 = 0.021$). Unexpectedly, the effect of temporal distance was marginally significant (F (1, 343) = 2.97, $p = .086$). However, its interaction with pictorial richness did not reach a level of significance ($F < 1$).

Evaluation. Analysis of participants' evaluation of the tourism product as a function of temporal distance and pictorial richness with the style of processing and familiarity as covariates was conducted. It is worth noting that, in both the present study and the one that follows, results of our analyses did not change when excluding the covariates; however, we included them to better control for any unexpected baseline variations. The results revealed only a significant temporal distance × pictorial richness interaction effect (F (1, 341) = 15.79, $p < .001$; partial $\eta^2 = 0.044$). As shown in the top section of Table 2, planned contrasts revealed that participants evaluated a distal tourism product more favorably if many pictures about the product were shown in the advertisement ($M = 5.73$, $SD = 0.77$) than if they were not ($M = 5.41$, $SD = 0.89$; F (1, 341) = 6.08, $p < .05$, partial $\eta^2 = 0.018$). However, they evaluated a proximal product less favorably when there were many pictures ($M = 5.28$, $SD = 0.84$) than when there were few ($M = 5.71$, $SD = 0.81$; F (1, 341) = 10.00, $p < .01$, partial $\eta^2 = 0.028$). The main effects

Table 2
Summary of results of Experiment 2.

	Proximal		Distal	
	Pallid	Rich	Pallid	Rich
Evaluation	5.71 (.81)	5.28 (.84)	5.41 (.89)	5.73 (.77)
Mental imagery	5.49 (1.00)	5.00 (1.04)	5.21 (.91)	5.50 (.84)
Cognitive overload	3.67 (1.07)	4.05 (1.00)	3.83 (1.17)	3.74 (1.32)

Note: SDs are indicated in parentheses.

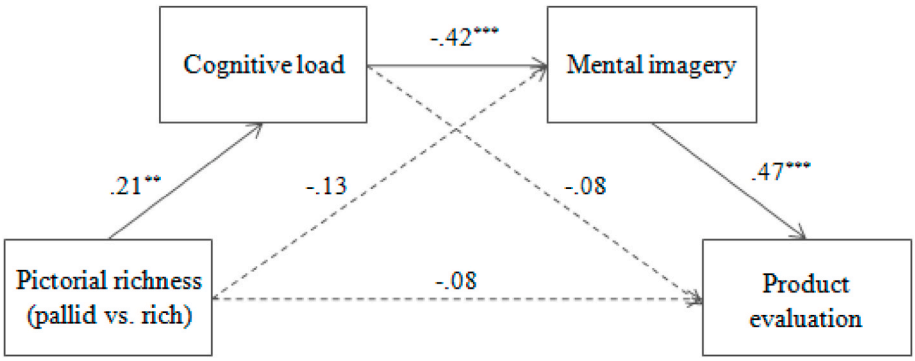


Fig. 2. Multistep multiple-mediation model of Experiment 2. *Note*. Coefficients are standardized. Coefficients significantly different from zero are indicated by asterisks (*p < .05, **p < .01, ***p < .001), and their associated paths are shown by solid lines; dashed lines indicate non-significant paths.

of temporal distance and pictorial richness were not significant (*F*s < 1). Moreover, both the style of processing (F (1, 341) = 5.55, $p < .05$, partial $\eta^2 = 0.016$) and familiarity (F (1, 341) = 12.00, $p < .01$, partial $\eta^2 = 0.034$) were the significant covariates. Thus, H1 was supported.

Mental imagery. A similar analysis of participants' mental imagery yielded only a significant temporal distance × pictorial richness interaction (F (1, 341) = 12.98, $p < .001$, partial $\eta^2 = 0.037$). The nature of the interaction, indicated in the second section of Table 2, was consistent with our expectations. Specifically, in the distal condition, participants reported forming more vivid mental images if many pictures were available ($M = 5.50$, $SD = 0.84$) than if a few pictures were available ($M = 5.21$, $SD = 0.91$; F (1, 341) = 4.11, $p < .05$, partial $\eta^2 = 0.012$). In the proximal condition, however, the reverse was true ($M_{rich} = 5.00$, $SD = 1.04$ vs. $M_{pallid} = 5.49$, $SD = 1.00$; F (1, 341) = 9.46, $p < .01$, partial $\eta^2 = 0.027$). The main effects of temporal distance and pictorial richness were not significant (*F*s < 1). Finally, consistent with existing studies (e.g., Jiang & Wyer, 2009; Wright & Rip, 1980), both the style of processing (F (1, 341) = 6.71, $p < .05$, partial $\eta^2 = 0.019$) and familiarity (F (1, 341) = 28.73, $p < .001$, partial $\eta^2 = 0.078$) had a significant impact on participants' mental imagery.

Cognitive load. Similar analysis of cognitive load revealed a significant interaction effect of temporal distance and pictorial richness (F (1, 341) = 3.90, $p < .05$, partial $\eta^2 = 0.011$). Specifically, when the product was portrayed as departing in a proximal future, participants felt more cognitive load in processing a large number of pictures in the advertisement ($M = 4.05$, $SD = 1.00$) than in processing a small number of pictures ($M = 3.67$, $SD = 1.07$; F (1, 341) = 5.22, $p < .05$, partial $\eta^2 = 0.015$). When the product was portrayed as departing in a distant future, however, the difference was not evident between the two conditions ($M_{rich} = 3.74$, $SD = 1.32$ vs. $M_{pallid} = 3.83$, $SD = 1.17$, respectively; $F < 1$). Neither the main effect of pictorial richness (F (1, 341) = 1.56, $p = .212$) nor that of temporal distance ($F < 1$) was significant. Both the effect of style of processing (F (1, 341) = 5.07, $p < .05$, partial $\eta^2 = 0.015$) and that of familiarity (F (1, 341) = 14.37, $p < .001$, partial $\eta^2 = 0.040$) reached a level of significance.

Mediation analyses. We predicted that the interaction effect of temporal distance and pictorial richness would lead to different amounts of mental imagery, which in turn would affect evaluation of the tourism product. A mediated moderation analysis (Hayes, 2013; Model 8 using 5000 resamples) indicated that the impact of temporal distance × pictorial richness on participants' evaluation of the tourism product was mediated by the mental imagery they could form ($B = 0.18$, SE = 0.06; 95% CI = 0.08 to 0.30). Specifically, the indirect effect of mental imagery was significant both in the proximal condition ($B = -0.11$, SE = 0.04; 95% CI = −0.19 to −0.03) and in the distal condition ($B = 0.07$, SE = 0.03; 95% CI = 0.01 to 0.15). To this end, H2 was supported.

Finally, our hypothesis suggested that participants could by themselves generate a great deal of mental imagery of a proximal trip, a process that could use up their cognitive resources. Subsequently, increasing the number of externally-provided pictures would intensify the cognitive overload and make it even more difficult for them to incorporate these pictures into visual representations, leading to less favorable attitudinal judgments. To this end, we conducted a bootstrapping analysis (Hayes, 2013; Model 6) to test a sequential mediation chain in the *proximal* condition: pictorial richness → cognitive load → mental imagery → product evaluation. The total indirect effect was significant ($B = -0.12$, SE = 0.04; 95% CI = −0.20 to −0.04), indicating mediation, while the direct effect became nonsignificant ($B = -0.08$, SE = 0.05; 95% CI = −0.18 to 0.02). More specifically, the indirect effect via both mediators was significant ($B = -0.04$, SE = 0.02; 95% CI = −0.08 to −0.01), whereas the indirect effect via cognitive load alone ($B = -0.02$, SE = 0.01; 95% CI = −0.05 to 0.00) and via mental imagery alone ($B = -0.06$, SE = 0.04; 95% CI = −0.14 to 0.00) became nonsignificant. As expected, the results supported the proposed sequential mediation chain (see Fig. 2 for the path coefficients in detail).

11. Discussion

In conclusion, Experiment 2 provided more direct evidence for our hypothesis. That is, although pictures increased consumers' evaluations of a tourism product if the tourism would begin for a long time (i.e., distal), they decreased consumers' evaluations if the tourism was about to begin (i.e., proximal). By showing a sequential mediation chain, this experiment suggested that increasing the number of pictures of a proximal tourism product aggravated people's cognitive overload in processing these pictures, which had a detrimental effect on their imagery processing of the product and subsequently their evaluations of it.

12. Experiment 3

The purpose of Experiment 3 was three-fold. In Experiment 2, we used temporal distance to operationalize a product's distance. However, it would be desirable to employ other dimensions of psychological distance to increase the internal validity of the findings. In Experiment 3, therefore, we focused on another dimension that is also germane to the design of tourism products–spatial distance–and attempted to investigate the interaction effect of pictures and spatial distance on participants' evaluation of tourism products. Moreover, we included a pure

baseline condition (i.e., no pictures at all) to examine any differences between presenting and not presenting pictures of tourism products. Finally, in the prior studies, we used Chinese participants to examine our hypothesis. One might speculate about the generalizability of the effects observed in those studies to populations with a different cultural background (e.g., Western culture). In this regard, we sought to evaluate our hypothesis using participants in the United States for Experiment 3.

12.1. Design and method

A total of 299 American adults (45.30% females; M_{age} = 36 years) from Amazon's Mechanical Turk (MTurk) took part in this study for a small monetary reward. They were randomly assigned to one cell of a 2 (spatial distance: proximal vs. distal) × 3 (pictorial richness: rich vs. pallid vs. none) between-subjects design.

The procedure of Experiment 3 was similar to that of Experiment 2. Participants were asked to read an advertisement online concerning a city tour and to report their evaluation of the advertisement. We used a much subtler but more stringent way of manipulating spatial distance (for a similar procedure, see Fujita, Henderson, et al., 2006; Henderson, Fujita, Trope, & Liberman, 2006; Jia, Hirt, & Karpen, 2009). Specifically, the tourism product was portrayed as a trip either to Seattle, a destination within the United States (in the *proximal* condition) or to Vancouver, Canada, which is outside the United States (in the *distal* condition). The two places are geographically adjacent so that they share many similarities except that they are part of different countries. As suggested by Mishra and Mishra (2010), people tend to perceive an inside-nation-border location to be spatially closer than an outside-nation-border location (see also Burris & Branscombe, 2005). Thus, we expected participants would perceive the trip to Seattle to be more proximal than that to Vancouver. A separate sample of 97 participants from the same population of the main study were asked to indicate which city is farther away from where they live right now: Seattle vs. Vancouver. The results confirmed our expectation, showing that 76.3% of thought Vancouver is farther away than Seattle. In this way, we ensured that everything other than spatial distance was held constant.

After a brief description of the tour, the advertisement included either two landscape pictures (*pallid* condition) or six such pictures (*rich* condition) of the destination. The number of pictures in these two conditions was determined based on the results of Experiment 1a, that participants processed an average of six pictures in the distal condition and only two pictures in the proximal condition. As in Experiment 2, the two pictures in the pallid condition were from a random subset of the six pictures in the rich condition, generating 15 versions for the pallid condition. We pooled over these advertisements to create the pallid condition. No other information about the tourism product was provided. All stimuli were presented in English. For detailed content of the advertisement, please see Appendix D.

After reading the advertisement, participants reported their evaluation of the tourism product on three scales, from 1 (very unfavorable/very negative/dislike it very much) to 9 (very favorable/very positive/like it very much). Their responses to the three scales were averaged to form a single index of product evaluation (α = 0.95).

Participants then reported their mental imagery associated with the product. Notably, the set of measuring items employed in the present study was different from that used in Experiment 2. Specifically, we used ease of imagination, rather than the vividness of mental images, as an indicator of mental imagery. Other research has also used ease of imagination to evaluate mental imagery (e.g., Bone & Ellen, 1992; Chang, 2013; Hung & Wyer, 2009; Jiang et al., 2014; Keller & Block, 1997; Lee & Qiu, 2009; Petrova & Cialdini, 2005). We adopted items from Ellen and Bone (1991) including: 1) How easy was it to imagine yourself traveling in the place? (1 = not at all, 9 = very much); 2) How quickly did the images of traveling in the place come into your mind? (1 = not at all, 9 = very much); 3) I had no difficulty imagining the traveling scenes in my head (1 = strongly disagree, 9 = strongly agree). Responses to the three items were averaged to create a composite index of ease of imagination (α = 0.93).

Finally, we asked participants to report how much pictorial information was presented in the advertisement (1 = very little, 9 = very much) as the manipulation check. Moreover, they responded to the same set of questions concerning familiarity as in Experiment 2, along a 9-point scale (1 = not at all, 9 = very much). Their responses to these items were averaged (α = 0.92). They also responded to the same measures of style of processing used in Experiment 2.

13. Results

Manipulation check. The analysis of pictorial information as a function of spatial distance and pictorial richness revealed only a significant main effect of pictorial richness (F (2, 293) = 70.08, $p < .001$, partial η^2 = 0.324). As expected, participants reported seeing more pictorial information in the rich condition (M = 6.64, SD = 1.76) than in either the pallid condition (M = 5.63, SD = 2.30; F (1, 293) = 9.71, $p < .01$, partial η^2 = 0.032) or the no picture condition (M = 3.01, SD = 2.53; F (1, 293) = 130.65, $p < .001$, partial η^2 = 0.308). The difference between the latter two conditions was also significant (F (1, 293) = 71.82, $p < .001$, partial η^2 = 0.197). Neither the main effect of spatial distance ($F < 1$) nor its interaction with pictorial richness (F (2, 293) = 1.82, p = .164) was significant.

Evaluation. The analysis of participants' product evaluation as a function of spatial distance and pictorial richness, with familiarity and style of processing as covariates, revealed a significant main effect of pictorial richness (F (2, 291) = 21.63, $p < .001$, partial η^2 = 0.129). Specifically, participants evaluated the tourism product less favorably in the no picture condition (M = 5.32, SD = 2.30) than in either the rich condition (M = 6.88, SD = 1.72; F (1, 291) = 30.02, $p < .001$, partial η^2 = 0.094) or the pallid condition (M = 6.84, SD = 1.88; F (1, 291) = 34.75, $p < .001$, partial η^2 = 0.107). In addition, the latter two conditions did not differ from each other at a significant level ($F < 1$). More important and consistent our hypothesis, the interaction was significant (F (2, 291) = 7.49, $p < .01$, partial η^2 = 0.049). As indicated in the top section of Table 3, participants evaluated the distal tourism product more favorably in the rich condition (M = 7.39, SD = 1.42) than in either the pallid condition (M = 6.45, SD = 2.05; F (1, 291) = 5.69, $p < .05$, partial η^2 = 0.019) or the no picture condition (M = 5.09, SD = 2.53; F (1, 291) = 33.80, $p < .001$, partial η^2 = 0.104). The latter two conditions

Table 3
Summary of the results of Experiment 3.

	Proximal			Distal		
	None	Pallid	Rich	None	Pallid	Rich
Evaluation	5.54 (2.05)	7.29 (1.55)	6.35 (1.85)	5.09 (2.53)	6.45 (2.05)	7.39 (1.42)
Mental imagery	5.50 (2.33)	6.86 (1.82)	5.61 (2.28)	4.97 (2.59)	5.93 (2.22)	6.92 (1.56)

Note: SDs are indicated in parentheses.

also differed significantly (F (1, 291) = 12.70, $p < .001$, partial η^2 = 0.042). However, they evaluated the proximal product more favorably in the pallid condition ($M = 7.29$, $SD = 1.55$) than in either the rich condition ($M = 6.35$, $SD = 1.85$; F (1, 291) = 8.21, $p < .01$, partial η^2 = 0.027) or the no picture condition ($M = 5.54$, $SD = 2.05$; F (1, 291) = 23.23, $p < .001$, partial $\eta^2 = 0.074$). The latter two conditions differed at a marginally significant level (F (1, 291) = 3.81, $p = .052$, partial η^2 = 0.013). Finally, while the effect of familiarity as a covariate reached a level of significance (F (1, 291) = 11.69, $p < .01$, partial $\eta^2 = 0.039$), that of the style of processing did not (F (1, 291) = 1.86, $p = .173$). The results therefore supported H1.

Mental imagery. A similar analysis on mental imagery revealed a significant main effect of pictorial richness (F (2, 291) = 9.84, $p < .001$, partial $\eta^2 = 0.063$). That is, participants generated fewer mental images of the product in the no picture condition ($M = 5.23$, $SD = 2.47$) than in either the rich condition ($M = 6.28$, $SD = 2.05$; F (1, 291) = 10.10, $p <$ .01, partial $\eta^2 = 0.034$) or the pallid condition ($M = 6.36$, $SD = 2.09$; F (1, 291) = 18.23, $p < .001$, partial $\eta^2 = 0.059$). The latter two conditions, however, did not significantly differ (F (1, 291) = 1.22, $p = .270$). More important, the spatial distance × pictorial richness interaction effect was also significant (F (2, 291) = 9.44, $p < .001$, partial η^2 = 0.061). Planned contrasts showed that it was easier for participants to visually imagine a distal trip in the rich condition ($M = 6.92$, $SD = 1.56$) than in either the pallid condition ($M = 5.93$, $SD = 2.22$; F (1, 291) = 4.90, $p < .05$, partial $\eta^2 = 0.017$) or the no picture condition ($M = 4.97$, $SD = 2.59$; F (1, 291) = 19.78, $p < .001$, partial $\eta^2 = 0.064$). The latter two conditions differed at a significant level (F (1, 291) = 5.48, $p < .05$, partial η^2 = 0.018). In contrast, it was easier for them to imagine a proximal trip in the pallid condition ($M = 6.86$, $SD = 1.82$) than in the rich condition ($M = 5.61$, $SD = 2.28$; F (1, 291) = 13.22, $p < .001$, partial $\eta^2 = 0.043$) or the no picture condition ($M = 5.50$, $SD = 2.33$; F (1, 291) = 13.87, $p < .001$, partial $\eta^2 = 0.045$). The difference between the latter two conditions was nonsignificant ($F < 1$). The detailed results were shown in the second section of Table 3. Both familiarity (F (1, 291) = 26.29, $p < .001$, partial $\eta^2 = 0.083$) and style of processing (F (1, 291) = 4.20, $p < .05$, partial η^2 = 0.014) had a significant impact on ease of imagination.

Mediation test. A mediated moderation analysis (Hayes, 2013; Model 8) using 5000 resamples from the data revealed that the interaction effect of spatial distance × pictorial richness on participants' evaluation of the tourism product as familiarity and style of processing as covariates was mediated by their perceived ease of imagination ($B = 0.70$, SE = 0.24; 95% CI = 0.25 to 1.18). However, the indirect effect of ease of imagination was significant only in the distal condition ($B = 0.72$, SE = 0.16; 95% CI = 0.41 to 1.03). In the proximal condition, the impact of pictorial richness on either evaluation or ease of imagination followed an inverted U curve, leading to a non-significant indirect effect (B = 0.02, SE = 0.18; 95% CI = −0.33 to 0.35). As Hayes' (2013) process can examine only linear effects, we conducted the same mediated moderation analysis, albeit excluding the no-picture condition. Results supported the indirect effect of ease of imagination in the impact of spatial distance × pictorial richness on participants' product evaluation (B = 1.67, SE = 0.40; 95% CI = 0.93 to 2.54). More important and consistent with our hypothesis, the indirect effect of ease of imagination was significant both in the proximal condition ($B = -1.04$, SE = 0.28; 95% CI = −1.62 to −0.50) and in the distal condition ($B = 0.63$, SE = 0.26; 95% CI = 0.13 to 1.21). The results supported H2.

14. Discussion

Using spatial distance to operationalize psychological distance and a different population of participants, Experiment 3 replicated Experiment 2. Specifically, the results suggested that it was easier for participants to form mental images of a distal trip when rich pictorial information was provided than when it was not, leading to a more positive evaluation of the tourism product. However, they reported greater difficulty in forming mental images of a proximal trip in the context of rich information than in that of pallid information, which subsequently decreased the evaluation of the trip product.

Moreover, this experiment extended our prior ones in that it included a pure baseline condition (i.e., no picture) for comparing any difference between presenting and not presenting pictorial information of a tourism product. The results showed that providing pictorial information is always better than providing no picture at all, and this pattern is independent of the product's proximity attributes. These results are consistent with a couple of prior findings (e.g., Decrop, 2007; MacKay & Fesenmaier, 1997) that tourism products are of high imagery value and the pictorial element in tourism advertisements is very powerful in stimulating mental imagery and favorable evaluations.

14.1. General discussion

A pilot study and four experimental studies provided converging evidence that when construing a psychologically distal trip, consumers rely on externally-provided pictures for mental imagery of the trip. As rich pictorial information is more effective in stimulating mental images than is pallid information, increasing the number of pictures for distal travel leads to a more positive trip evaluation. When construing a psychologically proximal trip, however, consumers form their mental images based on their existing knowledge, a process that may deplete their cognitive resources. Consequently, to the extent that externally provided pictures are rich in cues and content, consumers are likely to find it difficult to process and incorporate them into their visualizations. As a result, rich pictorial information decreases, rather than increases, the imagery processing of the trip and subsequently lowers the evaluations of the trip.

14.2. Theoretical implications

The present research and the conceptualization underlying it advance our knowledge in several ways. First, we examined two mental imagery eliciting strategies–use of pictures and construing a psychologically proximal event–and documented their effects on imagery processing and attitudes. In contrast to prior work that studies the two imagery eliciting strategies separately, our research examined their effects in combination. Previous research suggests that either rich pictorial information or construing a target concretely should effectively stimulate mental imagery processing and favorably affect attitudinal judgments. These findings might suggest an additive effect if both strategies are available for mental imagery. Our research, however, suggested an interference effect. Specifically, we found that many pictures did generate more vivid mental imagery of a psychologically distal trip when recipients cannot self-generate many mental images of the trip, but lots of pictures had a detrimental impact on the mental imagery of a psychologically proximal trip. This result occurred because recipients can voluntarily form lots of mental pictures when construing the proximal trip, and the imagery process depleted their cognitive resources.

Consequently, rich (vs. pallid) pictorial information intensified their cognitive load and made it more difficult for them to incorporate this information into visualizations, which ultimately led to a less favorable evaluation of the trip.

Second, the results of this research may help to clarify the rather mixed evidence concerning the effects of pictures on mental imagery obtained in other research on consumer information processing (Jiang et al., 2014; Miniard et al., 1991; Petrova & Cialdini, 2005; Unnava & Burnkrant, 1991). Although a few studies have succeeded in demonstrating that pictures are effective in stimulating imagery processing (Babin & Burns, 1997; Jiang et al., 2014; Lutz & Lutz, 1978; MacInnis & Price, 1987; Miniard et al., 1991), it has also been found that pictures have limited impact over and above written descriptions. For example, Kisielius and Sternthal (1984) document the verbal superiority effect on judgments, such that participants report a less favorable judgment when they read verbal product descriptions accompanied by pictures than when they read verbal descriptions alone. Although the results can be interpreted in availability-valence terms (that is, pictures stimulate elaborations and subsequently activate more negative associative paths related to the target product; Kisielius & Sternthal, 1986), the data are also subject to the implications of the current conceptualizations. Specifically, in Kisielius and Sternthal's (1986) study, participants in the picture condition were asked to read a verbal description of a product accompanied by a pictorial analog that exemplified the description. The verbal description led participants to form images as a natural part of understanding the meaning of the description (Bergen, Lindsay, Matlock, & Narayanan, 2007; Richardson, Spivey, Barsalou, & McRae, 2003; Stanfield & Zwaan, 2001; Wyer et al., 2008). This imagery process might consume cognitive resources, making it difficult for participants to further process the pictures and subsequently undermining the persuasion of the given message.

Finally, a particularly provocative aspect of our findings concerns its implications for construal level theory (Bar-Anan, Liberman, & Trope, 2006; Fujita, Trope, Liberman, & Levin-Sagi, 2006; Trope & Liberman, 2010). According to the theory, objects or events can be mentally represented at different levels. High-level construals are abstract representations that extract the gist of event information. They are general, decontextualized, and consist of super ordinate and essential features. In contrast, low-level construals are concrete, contextualized, and consist of subordinate and secondary features. Because pictures are low-construal representations and words are high-construal representations (Amit et al., 2009; Amit & Greene, 2012; Amit, Wakslak, & Trope, 2012), proximal events are more likely to be represented pictorially whereas distal events are more likely to be represented verbally. In this regard, prior work seems to suggest that externally provided pictures might facilitate the pictorial presentations of a proximal trip due to a "matching" effect (Schwarz, 2004, 2012; Winkielman, Schwarz, Fazendeiro, & Reber, 2003). Our results, however, invalidate this conclusion by distinguishing the images generated from existing knowledge from those formed based on externally-provided pictures. In our research paradigm, participants first processed the proximity information and then externally provided pictures; thus, it is likely that mental images formed based on proximity information might cognitively interfere with those generated from external pictures (i.e., contrasting effects). If participants first see externally-provided pictures, however, they might process the proximity information through "picture-colored" glasses. Consequently, an assimilation effect, as construal level theory has implied, might occur. Future research might consider this possibility.

14.3. Practical implications

Other implications of our results for marketing strategy should also be noted. Although the results of our pilot study indicate that tourism managers already take an approach that is consistent with the implications of the present research (either to save tourism information space or for some other reasons), no empirical evidence has previously confirmed the validity of their practice. In this regard, our results not only provide empirical evidence supporting the practice but also explicate its underlying mechanisms.

Of particular interest is the implication that when the advertised tourism product is a psychologically distal one, rich pictorial information is likely to lead to more favorable effects on product evaluation than pallid information or no such information at all. In other words, the more pictures the more effective the advertisement for a distal product. It is even more interesting to speculate that providing a limited (vs. expansive) set of pictures may lead to beneficial consequences when the advertised tourism product is a psychologically proximal one; in that case, consumers might address the pictorial void by self-generated mental images. Thus, for example, tourism managers might provide a large number of pictures or other vivid information if a trip departs in a couple of months rather than in a couple of days, or if the trip destination is distant rather than near, but might provide a small to medium number of pictures in the latter situations.

Moreover, note that psychological distance includes not only temporal distance and spatial distance but also social distance and hypothetical distance (Liberman et al., 2007; Liberman & Trope, 2014; Maglio, Trope, & Liberman, 2013). For example, if our conceptualization holds, more pictures should be preferred when consumers choose a tourism product for others (i.e., socially distal) rather than when they choose one for themselves (i.e., socially proximal), and when they are planning an uncertain trip (i.e., hypothetically distal) rather than when they are planning a certain one (i.e., hypothetically proximity). In the distal situations, they cannot spontaneously generate vivid images, because of their long distance from the advertised product; thus, the possibility that externally-provided pictures increases consumers' cognitive load is largely minimized. Although we do not consider them in the present research as a result of the rare use of them in practically featuring tourism products, the implications of these possibilities may be worth considering.

Credit author statement

Yanli Jia: Conceptualization, Methodology, Data curation, Writing – original draft, Writing – review & editing, Funding acquisition, Supervision. Jun Ouyang: Methodology, Investigation, Formal analysis, Data curation, Writing – original draft, Writing – review & editing. Qiang Guo: Conceptualization, Writing – review & editing, Funding acquisition.

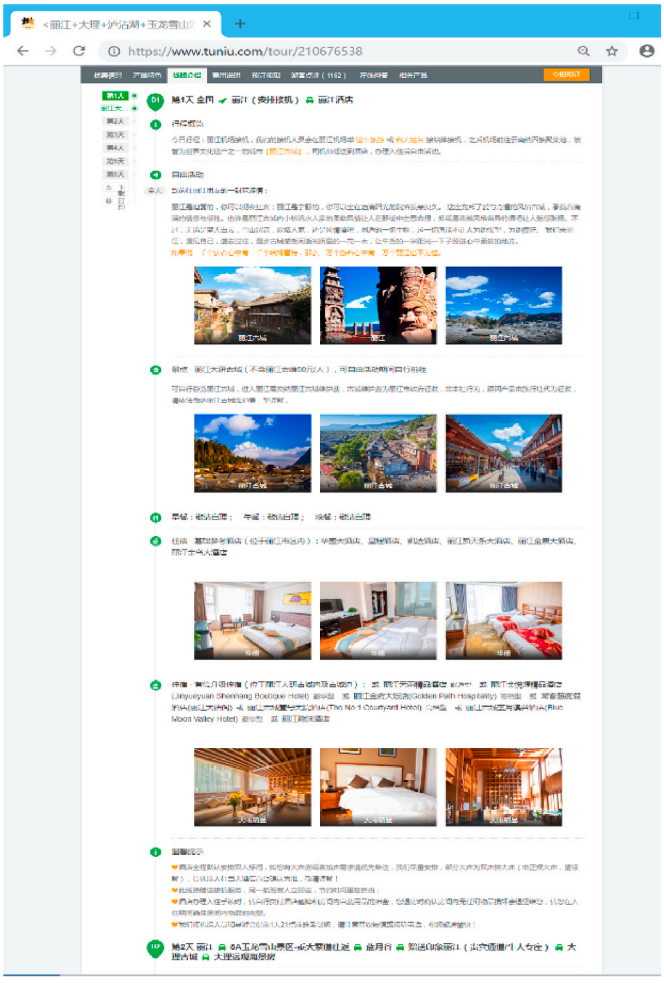
Declaration of competing interest

None.

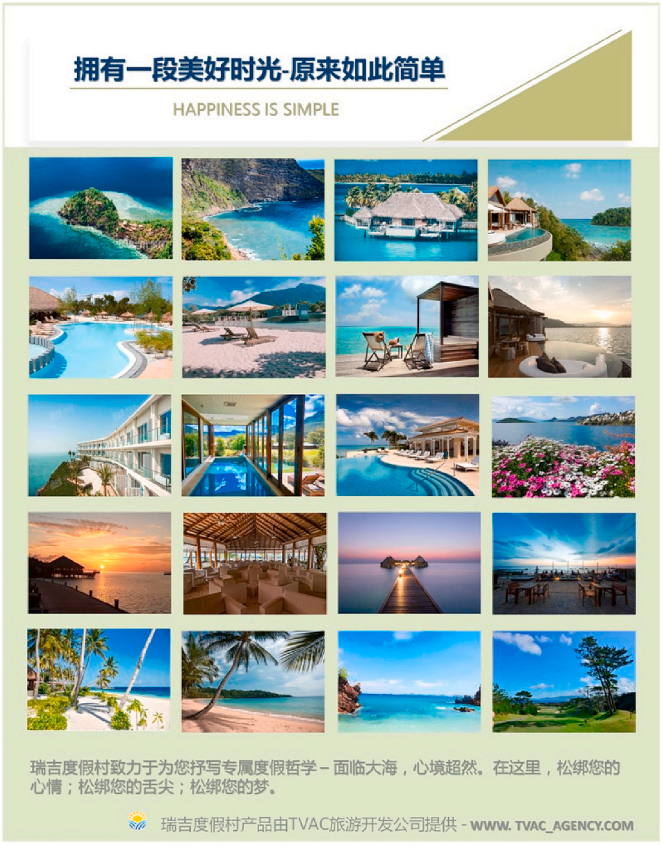
Acknowledgement

This research was partially supported by National Natural Science Foundation of China (71702159) awarded to the first author, and National Natural Science Foundation of China (71661006, 72041026), Humanities and Social Sciences Innovation Team Grant of Hainan University (HDSKTD202017), and Natural Sciences Innovation Team Grant of Hainan Province (2019CXTD402) awarded to the third author.

Appendix A. The same tourism product presented on original vs. promoted webpages on Tuniu.com

Original webpage	Promoted webpage
	

Appendix B. Product advertisement presented in Experiment 1



Appendix C. Product advertisements presented in Experiment 2

Temporal proximity + pallid pictorial information

Proximal proximity + rich pictorial information

Temporal distance + pallid pictorial information

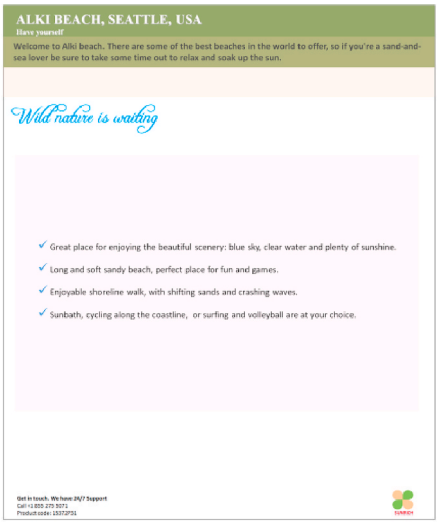
Temporal distance + rich pictorial information

Appendix D. Product advertisements presented in Experiment 3

Spatial proximity + rich pictorial information

Spatial proximity + pallid pictorial information

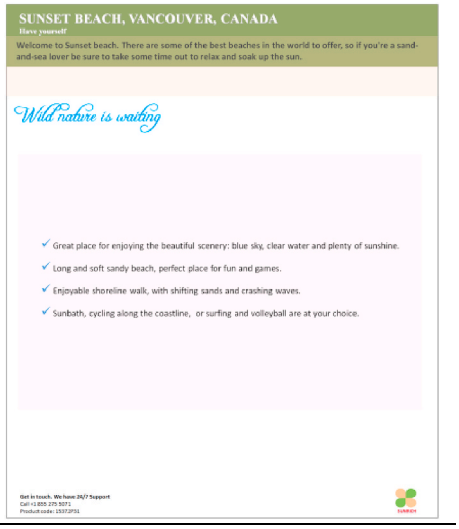
Spatial proximity + no pictorial information



Spatial distance + rich pictorial information

Spatial distance + pallid pictorial information

Spatial distance + no pictorial information



Impact statement

This research demonstrates that using rich pictorial information to present a tourism product can sometimes backfire. Specifically, although rich (vs. pallid) pictorial information can increase consumers' evaluation of a distal tourism product (i.e., the travel that occurs either in the distant future or to a distant destination), it can decrease their evaluations of a proximal one (i.e., the travel that occurs either in the near future or to a near destination). The results provide actionable guidelines for tourism managers, advertisers, and policy makers concerning how to pictorially present a tourism product depending on its proximity feature.

References

Adaval, R., & Wyer, R. S. (1998). The role of narratives in consumer information processing. *Journal of Consumer Psychology, 7*(3), 207–245.

Alter, A. L., & Balcetis, E. (2011). Fondness makes the distance grow shorter: Desired locations seem closer because they seem more vivid. *Journal of Experimental Social Psychology, 47*(1), 16–21.

Amar, J., Droulers, O., & Legohérel, P. (2017). Typography in destination advertising: An exploratory study and research perspectives. *Tourism Management, 63*, 77–86.

Amit, E., Algom, D., & Trope, Y. (2009). Distance-dependent processing of pictures and words. *Journal of Experimental Psychology: General, 138*(3), 400–415.

Amit, E., & Greene, J. D. (2012). You see, the ends don't justify the means: Visual imagery and moral judgment. *Psychological Science, 23*(8), 861–868.

Amit, E., Wakslak, C., & Trope, Y. (2012). The use of visual and verbal means of communication across psychological distance. *Personality and Social Psychology Bulletin, 39*(1), 43–56.

Au, N., Buhalis, D., & Law, R. (2014). Online complaining behavior in mainland China hotels: The perception of Chinese and non-Chinese customers. *International Journal of Hospitality & Tourism Administration, 15*(3), 248–274.

Babin, L. A., & Burns, A. C. (1997). Effects of print ad pictures and copy containing instructions to imagine on mental imagery that mediates attitudes. *Journal of Advertising, 26*(3), 33–44.
Baddeley, A. D., & Andrade, J. (2000). Working memory and the vividness of imagery. *Journal of Experimental Psychology: General, 129*(1), 126–145.
Bar-Anan, Y., Liberman, N., & Trope, Y. (2006). The association between psychological distance and construal level: Evidence from an implicit association test. *Journal of Experimental Psychology: General, 135*(4), 609–622.
Bergen, B. K., Lindsay, S., Matlock, T., & Narayanan, S. (2007). Spatial and linguistic aspects of visual imagery in sentence comprehension. *Cognitive Science, 31*(5), 733–764.
Bone, P. F., & Ellen, P. S. (1992). The generation and consequences of communication-evoked imagery. *Journal of Consumer Research, 19*(1), 93–104.
Bower, G. H. (1970). Imagery as a relational organizer in associative learning. *Journal of Verbal Learning and Verbal Behavior, 9*(5), 529–533.
Bower, G. H. (1972). Mental imagery and associative learning. In L. Gregg (Ed.), *Cognition in learning and memory* (pp. 1–88). New York: John Wiley.
Buhalis, D., Harwood, T., Bogicevic, V., Viglia, G., Beldona, S., & Hofacker, C. (2019). Technological disruptions in services: Lessons from tourism and hospitality. *Journal of Service Management, 30*(4), 484–506.
Buhalis, D., & Licata, M. C. (2002). The future eTourism intermediaries. *Tourism Management, 23*(3), 207–220.
Burns, A. C., Biswas, A., & Babin, L. A. (1993). The operation of visual imagery as a mediator of advertising effects. *Journal of Advertising, 22*(2), 71–85.
Burris, C. T., & Branscombe, N. R. (2005). Distorted distance estimation induced by a self-relevant national boundary. *Journal of Experimental Social Psychology, 41*(3), 305–312.
Chang, C. (2013). Imagery fluency and narrative advertising effects. *Journal of Advertising, 42*(1), 54–68.
Cheung, M. L., Ting, H., Cheah, J.-H., & Sharipudin, M.-N. S. (2020). Examining the role of social media-based destination brand community in evoking tourists' emotions and intention to co-create and visit. *The Journal of Product and Brand Management, 30*(1), 28–43.
Childers, T. L., & Houston, M. J. (1984). Conditions for a picture-superiority effect on consumer memory. *Journal of Consumer Research, 11*(2), 643–654.
Childers, T. L., Houston, M. J., & Heckler, S. E. (1985). Measurement of individual differences in visual versus verbal information processing. *Journal of Consumer Research, 12*(2), 125–134.
Chiou, W. B., Wan, C. S., & Lee, H. Y. (2008). Virtual experience vs. brochures in the advertisement of scenic spots: How cognitive preferences and order effects influence advertising effects on consumers. *Tourism Management, 29*(1), 146–150.
Dahl, D. W., & Hoeffler, S. (2004). Visualizing the self: Exploring the potential benefits and drawbacks for new product evaluation. *Journal of Product Innovation Management, 21*(4), 259–267.
De Graaf, A., Hoeken, H., Sanders, J., & Beentjes, H. (2009). The role of dimensions of narrative engagement in narrative persuasion. *Communications, 34*(4), 385–405.
Decrop, A. (2007). The influence of message format on the effectiveness of print advertisements for tourism destinations. *International Journal of Advertising, 26*(4), 505–525.
Dryglas, D., & Lubowiecki-Vikuk, A. (2019). Image of Poland as perceived by German and British medical tourists. *Tourism Review, 74*(4), 861–871.
Duke, C. R., & Persia, M. A. (1994). Foreign and domestic escorted tour expectations of American travelers. *Journal of International Consumer Marketing, 6*(3–4), 61–77.
El Haj, M., Gallouj, K., & Antoine, P. (2019). Mental imagery and autobiographical memory in Alzheimer's disease. *Neuropsychology, 33*, 609–616.
Elder, R. S., & Krishna, A. (2012). The "visual depiction effect" in advertising: Facilitating embodied mental simulation through product orientation. *Journal of Consumer Research, 38*(6), 988–1003.
Ellen, P. S., & Bone, P. F. (1991). *Measuring communication-evoked imagery processing.* Provo, UT: Paper presented at the Association for Consumer Research.
Ernest, C. H., & Paivio, A. (1969). Imagery ability in paired-associate and incidental learning. *Psychonomic Science, 15*(4), 181–182.
Escalas, J. E. (2004). Imagine yourself in the product: Mental simulation, narrative transportation, and persuasion. *Journal of Advertising, 33*(2), 37–48.
Fiedler, K., Semin, G. R., Finkenauer, C., & Berkel, I. (1995). Actor-observer bias in close relationships: The role of self-knowledge and self-related language. *Personality and Social Psychology Bulletin, 21*(5), 525–538.
Fujita, K., Henderson, M. D., Eng, J., Trope, Y., & Liberman, N. (2006). Spatial distance and mental construal of social events. *Psychological Science, 17*(4), 278–282.
Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*(3), 351–367.
Goldberg, F. (1974). Effects of imagery on learning incidental material in the classroom. *Journal of Educational Psychology, 66*(2), 233–237.
Goossens, C. F. (1995). External information search: Effects of tour brochures with experiential information. *Journal of Travel & Tourism Marketing, 3*(3), 89–107.
Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: Guilford Press.
Henderson, M. D., Fujita, K., Trope, Y., & Liberman, N. (2006). Transcending the "here": The effect of spatial distance on social judgment. *Journal of Personality and Social Psychology, 91*(5), 845–856.
Huang, R., Busby, G., & Bosdou, C. (2009). The first plymouth: Pictorial element and destination image. *International Journal of Tourism Policy, 2*(4), 246–261.
Hubbard, T. L. (2010). Auditory imagery: Empirical findings. *Psychological Bulletin, 136*(2), 302–329.
Hung, I. W., & Wyer, R. S. (2009). Differences in perspective and the influence of charitable Appeals: When imagining oneself as the victim is not beneficial. *Journal of Marketing Research, 46*(3), 421–434.
Inversini, A., & Buhalis, D. (2009). *Information convergence in the long tail: The case of tourism destination information.* Information and Communication Technologies in Tourism.
Iordanova, E., & Stylidis, D. (2019). The impact of visitors' experience intensity on in-situ destination image formation. *Tourism Review, 74*(4), 841–860.
Jia, L., Hirt, E. R., & Karpen, S. C. (2009). Lessons from a Faraway land: The effect of spatial distance on creative cognition. *Journal of Experimental Social Psychology, 45*(5), 1127–1131.
Jia, Y., Huang, Y., Wyer, R. S., & Shen, H. (2017). Physical proximity increases persuasive effectiveness through visual imagery. *Journal of Consumer Psychology, 27*(4), 435–447.
Jiang, Y., Adaval, R., Steinhart, Y., & Wyer, R. S. (2014). Imagining yourself in the scene: The interactive effects of goal-driven self-imagery and visual perspectives on consumer behavior. *Journal of Consumer Research, 41*(2), 418–435.
Jiang, Y., Gorn, G. J., Galli, M., & Chattopadhyay, A. (2016). Does your company have the right logo? How and why circular- and angular-logo shapes influence brand attribute judgments. *Journal of Consumer Research, 42*(5), 709–726.
Jiang, Y., & Wyer, R. S. (2009). The role of visual perspective in information processing. *Journal of Experimental Social Psychology, 45*(3), 486–495.
Jordan, E. J., Bynum Boley, B., Knollenberg, W., & Kline, C. (2018). Predictors of intention to travel to Cuba across three time horizons: An application of the theory of planned behavior. *Journal of Travel Research, 57*(7), 981–993.
Keller, P. A., & Block, L. G. (1997). Vividness effects: A resource-matching perspective. *Journal of Consumer Research, 24*(3), 295–304.
Kim, S., Lehto, X., & Kandampully, J. (2019). The role of familiarity in consumer destination image formation. *Tourism Review, 74*(4), 885–901.
Kisielius, J., & Sternthal, B. (1984). Detecting and explaining vividness effects in attitudinal judgments. *Journal of Marketing Research, 21*(1), 54–64.
Kisielius, J., & Sternthal, B. (1986). Examining the vividness controversy: An availability-valence interpretation. *Journal of Consumer Research, 12*(4), 418–431.
Kosslyn, S. M. (1976). Can imagery be distinguished from other forms of internal representation? Evidence from studies of information retrieval times. *Memory & Cognition, 4*(3), 291–297.
Kosslyn, S. M., Behrmann, M., & Jeannerod, M. (1995). The cognitive neuroscience of mental imagery. *Neuropsychologia, 33*(11), 1335–1344.
Lee, H., Fujita, K., Deng, X., & Unnava, H. R. (2016). The role of temporal distance on the color of future-directed imagery: A construal-level perspective. *Journal of Consumer Research, 43*(5), 707–725.
Lee, W., & Gretzel, U. (2012). Designing persuasive destination websites: A mental imagery processing perspective. *Tourism Management, 33*(5), 1270–1280.
Lee, Y. H., & Qiu, C. (2009). When uncertainty brings pleasure: The role of prospect imageability and mental imagery. *Journal of Consumer Research, 36*(4), 624–633.
Levin, J. R., & Divine-Hawkins, P. (1974). Visual imagery as a prose-learning process. *Journal of Reading Behavior, 6*(1), 23–30.
Lewinsohn, P. M., Danaher, B. G., & Kikel, S. (1977). Visual imagery as a mnemonic aid for brain-injured persons. *Journal of Consulting and Clinical Psychology, 45*(5), 717–723.
Libby, L. K., & Eibach, R. P. (2013). The role of visual imagery in social cognition. In D. E. Carlston (Ed.), *The Oxford handbook of social cognition* (Vol. 8, pp. 147–166).
Liberman, N., Sagristano, M. D., & Trope, Y. (2002). The effect of temporal distance on level of mental construal. *Journal of Experimental Social Psychology, 38*(6), 523–534.
Liberman, N., & Trope, Y. (2014). Traversing psychological distance. *Trends in Cognitive Sciences, 18*(7), 364–369.
Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. In A. W. Kruglanski, & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (Vol. 2, pp. 353–383). New York: Guilford Press.
Li, Q., Huang, Z., & Christianson, K. (2016). Visual attention toward tourism photographs with text: An eye-tracking study. *Tourism Management, 54*, 243–258.
Li, H., Lien, C.-H., Wang, S. W., Wang, T., & Dong, W. (2020). *Event and city image: The effect on revisit intention. Tourism review* (ahead-of-print(ahead-of-print)).
Lutz, K. A., & Lutz, R. J. (1977). Effects of interactive imagery on learning: Application to advertising. *Journal of Applied Psychology, 62*(4), 493–498.
Lutz, K. A., & Lutz, R. J. (1978). *Imagery-eliciting strategies: Review and implications of research.* Ann Arbor, MI: Paper presented at the Association for Consumer Research.
MacInnis, D. J., & Price, L. L. (1987). The role of imagery in information processing: Review and extensions. *Journal of Consumer Research, 13*(4), 473–491.
MacKay, K. J., & Fesenmaier, D. R. (1997). Pictorial element of destination in image formation. *Annals of Tourism Research, 24*(3), 537–565.
Maglio, S. J., Trope, Y., & Liberman, N. (2013). Distance from a distance: Psychological distance reduces sensitivity to any further psychological distance. *Journal of Experimental Psychology: General, 142*(3), 644–657.
Marks, D. F. (1973). Visual imagery differences in the recall of pictures. *British Journal of Psychology, 64*(1), 17–24.
Mazzocco, P. J., Green, M. C., Sasota, J. A., & Jones, N. W. (2010). This story is not for everyone: Transportability and narrative persuasion. *Social Psychological and Personality Science, 1*(4), 361–368.
McGill, A. L., & Anand, P. (1989). The effect of vivid attributes on the evaluation of alternatives: The role of differential attention and cognitive elaboration. *Journal of Consumer Research, 16*(2), 188–196.
Michael, I., Ramsoy, T., Stephens, M., & Kotsi, F. (2019). A study of unconscious emotional and cognitive responses to tourism images using a neuroscience method. *Journal of Islamic Marketing, 10*(2), 543–564.

Michopoulou, E., & Buhalis, D. (2013). Information provision for challenging markets: The case of the accessibility requiring market in the context of tourism. *Information & Management, 50*(5), 229–239.
Miller, D. W., & Marks, L. J. (1992). Mental imagery and sound effects in radio commercials. *Journal of Advertising, 21*(4), 83–93.
Miller, D. W., & Marks, L. J. (1997). The effects of imagery-evoking radio advertising strategies on affective responses. *Psychology and Marketing, 14*(4), 337–360.
Miniard, P. W., Bhatla, S., Lord, K. R., Dickson, P. R., & Unnava, H. R. (1991). Picture-based persuasion processes and the moderating role of involvement. *Journal of Consumer Research, 18*(1), 92–107.
Mishra, A., & Mishra, H. (2010). Border bias:the belief that state borders can protect against disasters. *Psychological Science, 21*(11), 1582–1586.
Navío-Marco, J., Ruiz-Gómez, L. M., & Sevilla-Sevilla, C. (2018). Progress in information technology and tourism management: 30 years on and 20 years after the internet-revisiting Buhalis & law's landmark study about eTourism. *Tourism Management, 69*, 460–470.
Nazneen, S., Xu, H., & Ud Din, N. (2020). *Assessment of residents' destination image and their pro-tourism development behaviour: Perspectives on the China–Pakistan economic corridor. Tourism review* (ahead-of-print(ahead-of-print)).
Paivio, A. (1969). Mental imagery in associative learning and memory. *Psychological Review, 76*(3), 241–263.
Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Rinehart & Winston.
Paivio, A., & Csapo, K. (1969). Concrete images and verbal memory codes. *Journal of Experimental Psychology, 80*(2), 279–285.
Paivio, A., & Foth, D. (1970). Imaginal and verbal mediators and noun concreteness in paired-associate learning: The elusive interaction. *Journal of Verbal Learning and Verbal Behavior, 9*(4), 384–390.
Peck, J., Barger, V. A., & Webb, A. (2013). In search of a surrogate for touch: The effect of haptic imagery on perceived ownership. *Journal of Consumer Psychology, 23*(2), 189–196.
Petrova, P. K., & Cialdini, R. B. (2005). Fluency of consumption imagery and the backfire effects of imagery appeals. *Journal of Consumer Research, 32*(3), 442–452.
Qian, J., Law, R., Wei, J., Shen, H., & Sun, Y. (2020). Hotels' self-positioned image versus customers' perceived image: A case study of a boutique luxury hotel in Hong Kong. *Tourism Review, 76*(1), 198–211.
Qi, S., Law, R., & Buhalis, D. (2008). Usability of Chinese destination management organization websites. *Journal of Travel & Tourism Marketing, 25*(2), 182–198.
Radvansky, G. A., & Zacks, R. T. (1991). Mental models and the fan effect. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 17*(5), 940–953.
Reisberg, D. (2014). *Auditory imagery*. Hillsdale, NJ: Erlbaum.
Reyes, R. M., Thompson, W. C., & Bower, G. H. (1980). Judgmental biases resulting from differing availabilities of arguments. *Journal of Personality and Social Psychology, 39*(1), 2–12.
Richardson, D. C., Spivey, M. J., Barsalou, L. W., & McRae, K. (2003). Spatial representations activated during real-time comprehension of verbs. *Cognitive Science, 27*(5), 767–780.
Rihova, I., Buhalis, D., Gouthro, M. B., & Moital, M. (2018). Customer-to-customer co-creation practices in tourism: Lessons from Customer-Dominant logic. *Tourism Management, 67*, 362–375.
Rossiter, J. R., & Percy, L. (1980). Attitude change through visual imagery in advertising. *Journal of Advertising, 9*(2), 10–16.
Schmeck, A., Opfermann, M., van Gog, T., Paas, F., & Leutner, D. (2015). Measuring cognitive load with subjective rating scales during problem solving: Differences between immediate and delayed ratings. *Instructional Science, 43*(1), 93–114.
Schnotz, W. (2005). *An integrated model of text and picture comprehension* (Vol. 49). New York: Cambridge University Press.
Schwarz, N. (2004). Meta-cognitive experiences in consumer judgment and decision making. *Journal of Consumer Psychology, 14*(4), 332–348.
Schwarz, N. (2012). Feelings-as-information theory. In P. A. M. V. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 289–308). Thousand Oaks, California: SAGE Publications.
Scott, L., & Batra, R. (2003). *Persuasive imagery: A consumer response perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.
Scott, N., Zhang, R., Le, D., & Moyle, B. (2019). A review of eye-tracking research in tourism. *Current Issues in Tourism, 22*(10), 1244–1261.
Semin, G. R., & Smith, E. R. (1999). Revisiting the past and back to the future: Memory systems and the linguistic representation of social events. *Journal of Personality and Social Psychology, 76*(6), 877–892.
Shaffer, W., & Shiffrin, R. M. (1972). Rehearsal and storage of visual information. *Journal of Experimental Psychology, 92*(2), 292–296.
Sherman, S. J., Cialdini, R. B., Schwartzman, D. F., & Reynolds, K. D. (1985). Imagining can heighten or lower the perceived likelihood of contracting a disease: The mediating effect of ease of imagery. *Personality and Social Psychology Bulletin, 11*(1), 118–127.
Shiv, B., & Huber, J. (2000). The impact of anticipating satisfaction on consumer choice. *Journal of Consumer Research, 27*(2), 202–216.
Stanfield, R. A., & Zwaan, R. A. (2001). The effect of implied orientation derived from verbal context on picture recognition. *Psychological Science, 12*(2), 153–156.
Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review, 117*(2), 440–463.
Trope, Y., Liberman, N., & Wakslak, C. J. (2007). Construal levels and psychological distance: Effects on representation, prediction, evaluation, and behavior. *Journal of Consumer Psychology, 17*(2), 83–95.
Unnava, H. R., & Burnkrant, R. E. (1991). An imagery processing view of the role of pictures in print advertisements. *Journal of Marketing Research, 28*(2), 226–231.
Wakslak, C. J., Trope, Y., Liberman, N., & Alony, R. (2006). Seeing the forest when entry is unlikely: Probability and the mental representation of events. *Journal of Experimental Psychology: General, 135*(4), 641–653.
Wang, J., Li, Y., Wu, B., & Wang, Y. (2020). Tourism destination image based on tourism user generated content on internet. *Tourism Review, 76*(1), 125–137.
Wang, T.-C., Tsai, C.-L., & Tang, T.-W. (2018). Exploring advertising effectiveness of tourist hotels' marketing images containing nature and performing arts: An eye-tracking analysis. *Sustainability, 10*(9), 3038–3051.
Wang, T.-C., Tsai, C.-L., & Tang, T.-W. (2019). Restorative quality in tourist hotel marketing pictures: Natural and built characteristics. *Current Issues in Tourism, 22*(14), 1679–1685.
Wedel, M., & Pieters, R. (2008). *Eye tracking for visual marketing*. Hanover, MA: Now Publishers.
Winkielman, P., Schwarz, N., Fazendeiro, T., & Reber, R. (2003). The hedonic marking of processing fluency: Implications for evaluative judgment. In J. Musch, & K. C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp. 189–217). Mahwah, New Jersey: Lawrence Erlbaum Associates.
Wright, P., & Rip, P. D. (1980). Product class advertising effects on first-time buyers' decision strategies. *Journal of Consumer Research, 7*(2), 176–188.
Wyer, R. S., Hung, I. W., & Jiang, Y. (2008). Visual and verbal processing strategies in comprehension and judgment. *Journal of Consumer Psychology, 18*(4), 244–257.
Yan, D., Sengupta, J., & Hong, J. (2016). Why does psychological distance influence construal level? The role of processing mode. *Journal of Consumer Research, 43*(4), 598–613.
Yao, B., Qiu, R. T. R., Fan, D. X. F., Liu, A., & Buhalis, D. (2019). Standing out from the crowd – an exploration of signal attributes of Airbnb listings. *International Journal of Contemporary Hospitality Management, 31*(12), 4520–4542.
Yousaf, A., Amin, I., Jaziri, D., & Mishra, A. (2020). Effect of message orientation/vividness on consumer engagement for travel brands on social networking sites. *The Journal of Product and Brand Management, 30*(1), 44–57.
Zatorre, R. J., & Halpern, A. R. (2005). Mental concerts: Musical imagery and auditory cortex. *Neuron, 47*(1), 9–12.

YANLI JIA (yanlijia@xmu.edu.cn) is an associate professor of marketing at Xiamen University. She obtained a Ph.D. degree in marketing from the Chinese University of Hong Kong. Her research interests include online social influence, visual information processing, emotions and affect, and business ethics. Her work has appeared in *Journal of Consumer Psychology*, *International Journal of Research in Marketing*, *Journal of the Association for Information Science and Technology* and others. She has received multiple research grants from the National Natural Science Foundation of China.

JUN OUYANG (ouyangjun1209@163.com) is Ph.D. candidate of Marketing at School of Management, Xiamen University.

QIANG GUO (gq@hainanu.edu.cn) is a professor of tourism college at Hainan University. He obtained a Ph.D. degree in management science from the University of Science and Technology of China. His research interests include service operations management, service marketing, revenue management, supply chain management, and strategic management. His work has appeared in *Journal of Retailing and Consumer Services*, *Tourism Economics*, *International Journal of Tourism Research* and others. He has received many research grants, including 4 research projects from National Natural Science Foundation of China,