This is the accepted manuscript of the article:
Park, S., & Nicolau, J. L. (2019). Image effect on customer-centric measures of performance. *Annals of tourism research*, *76*, 226-238.
https://doi.org/10.1016/j.annals.2019.04.007

Image effect on customer-centric measures of performance

Abstract

This study analyzes the effect of the difference between the pre-trip image of a destination and the post-trip image on, for the first time, two key elements of traveler behavior, which in turn are two customer-centric measures of destination performance: travel satisfaction and intention to revisit a destination. While the literature on the analysis of destination image has been prolific, the intricacies of the effects of changes in destination image on traveler behaviors remain unexplored, behaviors whose relevance is still greater when they show destination performance indicators. Based on the concepts of the zone of tolerance (derived from the service quality model) and loss aversion (from prospect theory), we explain the differential asymmetric effects of variation in destination image on intention to revisit and satisfaction, based on a sample of 12,024 individuals. Critical implications for destination marketing organizations are provided.

Key words: destination image; revisit intention; satisfaction; zone of tolerance; loss aversion.

Introduction

As a tool that helps define product positioning and promotion, destination image has been a pervasive topic in tourism (Li, Pan, Zhang, & Smith, 2009). While the link between image and destination performance is straightforward, there is a gap in the literature regarding the analysis of the effect of variations in image (pre-trip vs. post-trip image) on two key customer-centric measures of destination performance: travel satisfaction and intention to revisit (Kozak, 2002a).

Due to the complexity and intangibility of tourism products, travelers find it difficult to assess the quality of trip services and to make a fully informed travel decision. The destination image facilitates the transposition of the representation of a destination into the potential tourist's mind, and allows people to have a pre-taste of the destination experience (Fakeye & Crompton, 1991). A positive image therefore helps a destination favorably differentiate itself from its competition. This has led to an extensive body of literature on tourism destination image, including formation, measurement, impact, and changes of destination image (Gallarza, Saura, & García, 2002). The general conclusion of past studies is that a favorable image leads to better destination performance due to the higher likelihood of a destination being chosen, higher tourist satisfaction and loyalty involving intention to revisit, recommendation to others, and positive word of mouth (Lee, Lee, & Lee, 2014). More importantly, the literature suggests that destination image is not static but dynamic in nature, implying subsequent image changes across the travel process (Chon, 1991; Gartner & Shen, 1992; Kim & Morrsion, 2005; King, Chen, & Funk, 2015; Li et al., 2009). Phelps (1986) proposed two types of destination image: the primary image (formed after the destination visit) and the secondary image (developed before the destination visit). The differences (or changes) between those two types of images reflect the quality of travel experiences and indicate destination performance.

From the viewpoint of destination marketing organizations (DMOs), unceasing efforts or investment to enhance destination image by offering extraordinary service experiences to destination visitors requires substantial cost and time to operate. Considering the extent of the payoffs given the operational expenses, an important research question arises: How much change in the image of a destination is enough? While previous studies emphasized the identification of factors that affect image change, the attempt to understand optimized levels of change in the destination image is still limited, especially in the context of destination performance. The proposition of estimating variations of destination image before (expectation) and after (experience) visiting the place is closely associated with the concept of the zone of tolerance, which represents the range of service performance that a consumer considers satisfactory (Johnston, 1995). In other words, individuals might be somewhat lenient when there is a decline in the image of a destination. Prospect theory, however, proposes the opposite effect because, according to its loss aversion principle, an individual will assess a deterioration in the image of a destination as more detrimental than an improvement as beneficial, even if the amount deteriorated or improved is the same (Levin & Gaeth, 1988).

The purpose of this research is therefore to understand traveler sensitivity to variations in perceived destination image between pre- and post-travel experiences. More particularly, this study estimates the degree of perceived image change in a bidirectional manner (from positive to negative, and vice versa), and the influences of the image change on destination performance (that is, intention to revisit and travel satisfaction). Building on the research of Josiassen, Assaf, Woo, and Kock (2016), this study focuses on overall image as a single construct of destination image, referring to travelers' beliefs about a destination. Destination satisfaction and revisiting behaviors have been regarded as indicators of customer-centric performance in a qualitative

approach wherein travelers express their perceptions of destination experiences (Kozak, 2002a) as perceived customer performance (Tse & Wilton, 1988). The idea of "success" in tourism management encompasses satisfied tourists referring to service performance (Song, Van der Veen, Li, & Chen, 2012). The exploration of these two types of travel behaviors allows the researcher not only to assess the robustness of the analytical results along with consistent findings, but also to understand the differentiated effects of image changes on different measurements of destination performance.

The findings of this research therefore provide important implications for DMOs in developing tourism products and marketing campaigns. Indeed, this study sheds lights on the asymmetric effects of image variations, by considering the direction of changes on destination performance. Two theories (zone of tolerance and loss aversion) are applied to explain the non-linear relationships. Ultimately, the findings of this study should be useful for DMOs to decide their target market for reforming travelers' perceptions of the destination and effectively allocate their marketing budgets.

Literature Review

Travel Satisfaction and Revisit Intention as Proxies for Destination Performance

It is widely accepted that the creation of competitive advantage is of vital importance to the success of destinations (Porter, 1989). For the field of tourism, Pearce (1997) proposed an analysis of competitive destinations and highlighted the importance of comparative research in evaluating tourism performance, as well as resolving practical issues at the destination. There are, in general, two approaches to measuring destination performance: quantitative and qualitative (Kozak, 2002b). Quantitative estimation refers to analyzing hard data, such as number of tourist arrivals and the national income from tourism. The qualitative perspective on

destination performance includes visitors' perceptions of destination attributes, which show the extent to which tourists like or dislike the destination during their visits. The survey method has usually been used to measure the qualitative aspects of destination performance.

The latter approach has shown theoretical interrelations of concepts between performance and satisfaction, as the level of satisfaction brings performance (Song et al., 2012). Bogan and English (1994) stress that service performance includes benchmarks for satisfaction and dissatisfaction and for retention and defection due to the intimate association of these elements with future revisit intentions. In a similar vein, Tse and Wilton (1988) suggest perceived performance in customer satisfaction formation based upon the satisfaction/dissatisfaction model by Churchill and Surprenant (1982). They empirically demonstrate the association between perceived performance and consumer satisfaction.

The literature on destination performance has also regarded tourist satisfaction as a competitive advantage (Crouch & Ritchie, 2000; Fuchs, Peters, & Weiermair, 2002). Tourists may receive a benefit from identifying the extent to which the services received met their expectations, which ultimately shapes destination satisfaction. Since travelers can obtain experiences of other destinations directly or indirectly involved in competition, their perceived quality (and attitudes) can play an important role in determining repeat visitations and propensity to recommend the destination to other people (Kozak, 2002a; Kozak & Rimmington, 1999). In tourism management, it has been suggested to consider two aspects of destination evaluation: instrumental performance and expressive performance (Pizam, Neumann, & Reichel, 1978). The instrumental dimension of performance relates to the physical performance of a product/service (a destination in tourism) such as transportation availability, communication services, and facilities. The expressive dimension of performance corresponds to the psychological

interpretation of performance designating more emotional responses (Lalicic et al., 2018). Existing studies confirm the intimate associations of the two performance dimensions with satisfaction in the contexts of tourism and outdoor recreation (Uysal, 2003; Yoon & Uysal, 2005). Tourists' satisfaction and revisit intention are therefore clearly customer-centric measures of destination performance, embodying the standard required to evaluate performance gaps and indicate service innovation (Fuchs & Weiermair, 2004). Tourism studies conducted by Kozak (Kozak, 2002a; Kozak & Rimmington, 2000) proposed a method of destination benchmarking to assess destination competitiveness considering travel satisfaction and compared the performance gaps between different countries. In addition to destination performance, this approach to evaluating customer satisfaction has also been applied in the hospitality industry as hospitality performance (Min, Min, & Chung, 2002).

Destination Image

Destination image has been regarded as a critical element in forming individuals' perception of a travel destination. Because of the intangibility of tourism services, travelers find it difficult to judge service quality based on the invisible elements of pre-visit selection and post-visit destination (Gallarza et al., 2002). Destination images are therefore more important than tangible resources because the key motivator determining whether or not consumers act is perception rather than reality (Gartner, 1994; Guthrie & Gale, 1991). Given that attitudes are a predictor of consumer intention and actual behavior, consideration of perceived image as an attitude toward the destination provides greater insight into the future behavior intentions of tourists (King et al., 2015). A favorable image can lead to information-seeking behaviors that facilitate developing destination knowledge and generating intentions to visit a place (King et al.,

2015). The concept of "image" in tourism has been defined as the impression people have about a place where they do not reside (Fakeye & Crompton, 1991; Hunt, 1975). Recognizing its critical role, there have been numerous and varied approaches to destination image, including its formation, measurement and influences, as well as changes to the destination image (Gallarza et al., 2002).

Research that identifies the formation and measurement of travel destination image is prevalent in the literature. Two types of image-forming agents have been recognized: induced and organic images (Gunn, 1988). An induced image is informed by non-targeted marketing communication or represents the total of what an individual already knows or perceives about the destination by watching travel shows or reading books. Organic images are induced by marketing activities through tourism advertising and promotions intended to motivate individuals to visit a destination (Gunn, 1988). In terms of organic images, Gartner (1994) stressed that the image formation continuum is composed of information acquired about a destination based on past travel to the area and, more importantly, the image change resulting from an actual visit. This implies that the destination image is not static but dynamic in nature, subject to the amount and extent of new information that contrasts with the image currently held (Gallarza et al., 2002; Gartner & Shen, 1992; King et al., 2015; Vogt & Andereck, 2003). Gunn (1988) suggested seven stages for the modification and change of a tourism destination image. This process consists of the accumulation of mental images about destination experiences (1st stage); adjustment of those images based on further information (2nd stage); the decision to go on a trip (3rd stage); actual travel to the destination (4th stage); experiences at the destination (5th stage); return travel (6th stage); and the new accumulation of images derived from the experiences (7th stage). Baloglu and McCleary (1999) suggested a model of destination image formation that considers the initial

image, that includes personal and stimulus factors as well as the destination image itself consisting of cognitive and affective evaluations and overall image. A study by Baloglu and McCleary (1999) identified elements that generate initial image, affecting destination evaluations. More importantly, a cognitive dimension of the destination evaluation influences affective evaluation, which ultimately leads to overall destination image.

More recently, recognizing the ambiguity of the understanding of destination image in the relevant literature and conflated concepts between destination imagery and image, Josiassen et al. (2016), conducted a systematic review of tourism studies about destination image. They suggested key findings, trends, and vital issues important for researchers in relevant fields, according to both theoretical and methodological perspectives. Kock, Josiassen, and Assaf (2016) proposed a theoretically sound framework of destination image based on mental representation. They elaborated the concept of "affect" and its role in destination image literature, suggesting a destination content model comprising destination imagery, image, and affect.

Several tourism studies have indicated a gap between the ideal (expectation) and actual (from direct experience) images of travel destinations (Ross, 1993). Chon (1991) identified the formation and modification of the destination image during the 4th and 6th stages of the model developed by Gunn (1988). More specifically, tourists had considerably different perceptions of Korean destination images before and after visiting. Post-visit they showed higher positive images of Korea as a travel destination than they did pre-visit. Yilmaz, Yilmaz, İçigen, Ekin, and Utku (2009) revealed differences in perceived destination attributes (especially environmental conditions, attractiveness, and climate) between travelers who arrived at and departed from the destination. It was also found that visit duration affected changes in destination perceptions.

Vogt and Andereck (2003) demonstrated that destination image changes were integrated with direct experiences. Since personal experience is more trustworthy than indirect experience or any other forms of communication, direct experience is the key driver to establishing and reforming a strong basis for belief. In a similar vein, first-hand experiences can diminish stereotyping and bring about a change in destination image to form more qualified perceptions of the destination (Fakeye & Crompton, 1991).

Based upon an extensive review of the literature on destination images, it appears that experiences play a vital role in reshaping destination images. Travelers who spend sufficient time at a destination are more likely to form a differentiated image of the destination from using the facilities and developing contacts with residents there, which generally signifies greater discrepancy between the initial (expectation) and perceived (experience) images. However, the existing literature has not yet systematically investigated the consequence of image. More critically, it can be argued that the extent to which the destination image changes before and after visiting the destination leads to different levels of travel satisfaction and willingness to revisit the destination. Figure 1 presents the relationships inherent in the effect of changes in the perceived destination image on traveler behaviors, which in turn are destination performance measures. As indicated previously, travelers who have experienced a destination can compare their pre-trip and post-trip images of it; accordingly, whether the pre-trip image is more or less favorable than the post-trip image might affect their behavior in terms of satisfaction or intention to revisit. The final impact will be contingent not only on the difference between the pre-trip and post-trip images but also on other elements that might have an influence on that impact. This study proposes two psychological concepts/theories to explain the differential impact of the difference. The first concept is the zone of tolerance, a concept derived from service quality by which

individuals might be more tolerant when there is a gap between expectation and performance (or experience) of consumption (Johnston, 1995). The second concept is prospect theory's loss aversion; travelers start with a certain level of expectation and compare it to their actual experience: according to the phenomenon of loss aversion, a post-trip image that is less favorable than a pre-trip image has a greater effect on behavioral traits because this loss is more *detrimental* than an equal-sized image gain is *beneficial* (Tversky & Kahneman, 1991). Both the zone of tolerance and the loss aversion phenomenon might explain, in opposite ways, the effect of a variation in destination image on tourist behavior.

[Please insert Figure 1 about here]

Zone of Tolerance

Poiesz and Bloemer (1991) have argued that expectations as a belief in the future performance of a product should be expressed as zones (or ranges) instead of discrete points on a scale. This is because people are not capable of articulating points in their estimation of a service. The zone of tolerance is therefore conceptualized as a range of service performance related to a sense of inertia in behavioral responses to unmet or unconfirmed expectations (Liljander & Strandvik, 1993). Customers may be indifferent to small variations of service quality within the zone, which reflects the individual's willingness to accept variations in service delivery (Berry & Parasuraman, 2004; Yap & Sweeney, 2007). Rather than holding a single level of expectation for service, consumers in fact have a range of expectations bound by the desired service (what the consumer expects to receive) and adequate service (what the consumer accepts as sufficient) (Parasuraman, 2004). When the service experience is better than the desired service

level, individuals will perceive the service as extraordinarily good, resulting in perceived service superiority (Liljander & Strandvik, 1993). Consumers will, however, be unhappy and look for alternative services if the level of service falls below an adequate service level. It is worth noting that consumers will tolerate when a service experience falls between the two levels, higher than adequate service and lower than desired service levels (Zeithaml, Berry, & Parasuraman, 1996); the bottom line for satisfaction occurs when the perceived service performance is equal to the adequate service expectation.

The zone of tolerance has proved to be a useful tool in integrating notions of service quality and expectations (Walker & Baker, 2000), as well as in diagnosing changes in the association between service quality and its outcomes (Teas & DeCarlo, 2004). Indeed, marketers are able to scrutinize whether the quality–outcome relationship changes along with expectations, allowing for the measurement of relative payoffs for service quality improvements (Chen, 2014). The zone of tolerance also enables marketers to assess market reactions to new services and gauge customer sensitivity to variations in the levels of services (Liljander & Strandvik, 1993). As a result, the concept allows researchers to address the important question of what level of service quality is sufficient (Nadiri & Hussain, 2005). This approach has a diagnostic value by identifying the range of service within which a destination product meets traveler expectations (Teas & DeCarlo, 2004).

This study accordingly argues that the zone of tolerance can be applicable to the context of destination image. While an amelioration of the image (say, from “fair” to “positive”) is expected to have a positive impact on traveler behavior, deterioration of the image (from “positive” to “fair”) should bring about a negative impact on traveler behavior; still, the zone of tolerance might have an effect and provide room for forgivable mistakes. Persistent efforts or

investment from DMOs to improve the destination image by offering extraordinary service experiences at the destination are not necessarily the best approach, considering the relative payoffs in terms of operational cost and time required. Those who have received positive service experiences during a previous visit are also more likely to have an unsatisfactory experience (or develop a negative destination image) on the next visit because the past experience becomes a reference standard leading to the expectation of higher levels of service. It is therefore critical for DMOs to identify the range of tolerance, including the variations in destination image before and after trips, that can, as a result, address the question of how much change in the image of a destination is enough.

Loss Aversion

According to prospect theory (Tversky & Kahneman, 1991), people are reference-dependent because they tend to compare outcomes to reference points rather than evaluating outcomes in absolute measures. For destination image, the referent benchmark for travelers is the pre-trip image (with their expectations), which will be compared to the post-trip image (based on their experiences). Loss aversion is a fundamental tenet of prospect theory and predicts that the absolute level of change in magnitude due to a *loss* is greater than the corresponding impact due to a *gain*.

This concept has been applied in tourism research for pricing (Nicolau, 2008) and online consumer reviews (Park & Nicolau, 2015). Thinking that prices reflect service quality (Carman, 1990), travelers tend to compare the prices of alternatives with a reference price; this facilitates how people judge losses or gains based on the difference between reference and experience points. Travelers are relatively more sensitive to spending more (loss) than reference prices

compared to spending less (gain), even if the expected amount is identical (Viglia, Mauri, & Carricano, 2016). In the context of online information search behavior, Park and Nicolau (2015) demonstrated that travelers perceive negative reviews to be more useful than positive ones as a way to diminish the risk of loss rather than enhancing gain (Kahneman & Tversky, 2013). Following this line of thinking, the present study proposes that an individual will assess a deterioration in the image of a destination as being more detrimental than an improvement is beneficial, even if the amount of change is the same.

Methodology

Data Collection

The data were collected using paper surveys from international travelers who visited South Korea. Subjects who met the requirements (over 18 years old and having stayed in South Korea for more than one day and less than one year) were asked to respond to the questionnaire. Four international airports (Incheon, Gimpo, Gimhae, and Jeju Island) as well as two international harbors (Incheon and Busan) were selected at which to contact the respondents at the end of their trips. This study applied a stratified sampling method with respect to countries of origin. Considering international visitors across countries in previous years, the target sample number for each country could be calculated at the 95% confidence level. To minimize the effect of seasonality on the survey results, the data were collected from at least 1,000 respondents each month for twelve months throughout 2014; the total number of respondents included in the data analysis was 12,024.

Measurements

The international visitor survey contained three sections. The first part asked the respondents about their behaviors while visiting South Korea, including types of travel arrangement (i.e., independent or package tour), purpose of trip (i.e., leisure, recreation, and holiday; health, medical treatment; religion or pilgrimage; shopping; visit friends and relatives; business or professional activities; and education), information sources (i.e., travel agencies, relatives and friends, Internet, traveler's guides, media, tourist office, and airlines or hotels), travel companion (i.e., alone, family and relatives, friends, co-worker, and others), and types of accommodation (i.e., hotel, guesthouse, condominium, family/relatives, school/dormitory, temple, and other) (Yoon & Shafer, 1997). The second part of the survey measured the two types of destination image: before and after the visit to Korea. Yilmaz et al. (2009) stressed the measurement of image attributes in a repeated manner due to the flexible change in time after having actual travel experience in the destination. While some researchers have suggested a performance- or experience-only measurement is sufficient, such an approach limits the explanatory power of the service–quality measurement (Parasuraman, 2004). Following the study of Li and Vogelsong (2006), participants were therefore asked to rate their perceived image of Korea at two different stages: before and after their visits.

More specifically, this study applied a single-item approach to measuring destination image. This is because, first, the purpose of this research to examine the effects of image changes on destination performance, elucidating travelers' sensitivity to variations in destination images, rather than identifying image constructs. Along the same lines, Baloglu and McCleary (1999) measured overall destination image by using the scale of a single-item on Likert scale ranging from "very positive" to "very negative." Josiassen et al. (2016) endorsed the idea of overall

image comprising a single construct with a reflective measurement model rather than a formative approach. Second, it is suggested that destination image should be measured only with cognitive aspects, excluding affective ones (see Kock et al., 2016; Sparks & Pan, 2009). Thus, this study uses a single-item reflecting cognitive evaluation of overall destination image. The last part of the survey included demographic questions such as age, education level, and occupation.

Certainly, the study of pre- and post-trip image formation and change entails certain methodological challenges. A study trying to examine the pre- and post-trip image differences should use the same sample of respondents (Wang & Davidson, 2010); ideally, the pre-trip image survey should take place before the trip and the post-trip survey after the trip. Yilmaz et al. (2009) were among the first to study the difference between destination images before and after visiting, and used different samples of arriving and departing tourists to capture each image. This approach, however, does not show the real change in destination image taking place in the same person. By comparison, the more appropriate approach in assessing image differences is by asking the same tourists to reply to questions related to pre- and post-trip image. Because having a large-scale sample to reply to the survey before and after the trip is not easy, we compromise by asking the same individuals – from a large sample – but after the trip, in line with Wang and Davidson (2010). We know that this might entail some measurement problems such as bias; nevertheless, for the purpose of this article, it should not be a critical issue. Note that the objective of this research is not to measure the image differences per se but to analyze the effect of these differences on customer-centric measures of performance. Thus, even if the measures are larger or smaller than they really are, this bias – if any – should be homogenous among the different combinations found; accordingly, if significant impacts of these image combinations on the customer-centric measures of performance are found, the relevant measures should be the

differences of the distinct effects. In other words, for the purpose of this study it is not as relevant to see the absolute impact of a change from very negative pre-trip image to fair post-trip image as the relative comparison of this impact (from very negative to fair) and the impact of a change from very negative to very positive.

Data Analysis

In order to measure the effect of image changes on satisfaction and intention to revisit, the Tobit model is used because both dependent variables are left- and right-censored. Therefore, the model is defined as

$$y_i = \alpha + \sum_{k=1}^{K} \beta_k x_{ki} + \varepsilon_i$$

where y_i is the dependent variable (satisfaction/intention to visit) for individual i, α is a constant term, β_k is the coefficient associated with the *k-th* independent variable x_{ki} for individual i, and ε_i is an error term that follows a normal distribution. Note that as the range of the dependent variable (whether satisfaction or intention to visit) is 1 through 5, we only observe $y^* = \min(y,5)$ because of the right censoring and $y^* = \max(y,1)$ because of the left censoring. To complement the analysis, we run classical regressions via OLS by log-transforming the dependent variables so that marginal effects are straightforwardly obtained.

To correct for potential endogeneity that might exist in the relationship between the explanatory variable "image changes" and the dependent variables "intention to revisit" and "satisfaction", we use Gaussian copulas. In contrast to traditional methods, this is an instrument-free approach proposed by Park and Gupta (2012) whose purpose is to directly model the

correlation between the regressor and the error term. The copula terms for the image change (IC) variable are obtained as

$$IC_i^c = \emptyset^{-1}[H_{IC}(IC_i)]$$

where $\emptyset^{-1}$ is the inverse of the cumulative normal distribution and $H_{IC}(IC_i)$ is the empirical distribution function of IC. According to Park and Gupta (2012), by introducing IC_i^c as an additional regressor the aforementioned correlation is captured and the model parameter estimates are consistent. Note that, for this empirical application, we create a copula term for each combination of "image change".

Results

Profiles of Respondents

Table 1 shows a summary of respondents' profiles. International travelers who visited Korea appear that female (55.44%) is slightly more than male (44.6%), and over half of them awarded university degree (67.8%). Approximately 65% of travelers are 21 – 40 years old. Top five countries visiting Korea include China (44.7%), Japan (18.1%), USA (5.8%), Taiwan (5.1%), and Hong Kong (4.5%). With regard to travel behaviors, about 65% of international travelers have visited Korea one time in last three years and majority of them (93.3%) just visited Korea during their recent trips. Approximately half (48.8%) of travelers have spent a month for planning their trips. 58% of travelers have visited the destination with a leisure purpose.

[Please insert Table 1 about here]

Model Estimations

Table 2 shows the effects of image change on intention to revisit (Tobit estimates in Models 1 and 2, and OLS estimates in Model 3 (without correcting for endogeneity) and Model 4 (correcting for endogeneity)) and satisfaction (Tobit estimates in Models A and B, and OLS estimates in Model C (without correcting for endogeneity) and Model D (correcting for endogeneity))[1]. Models 1 and A present the estimates of the central variables of interest (image changes), Models 2 and B add some control variables (trip organization, information sources, and purposes) to the previous models, and Models 3 and C (without correcting for endogeneity) and Model 4 and D (correcting for endogeneity) show the marginal effects of each variable so direct comparisons can be made just by looking at the parameters that represent those marginal effects. Importantly, the results are consistent and robust across the four intention models and across the four satisfaction models. As some of the copula terms are significant, it means that there exists correlation between the exogenous regressor and the error term, underscoring the importance of controlling for potential endogeneity. Consequently, we interpret the marginal effects according to the results obtained in Models 4 and D.

[Please insert Table 2 about here]

Intention models. Stemming from a *very negative* attitude toward Korea before the visit (first panel), any increase in the attitude after the visit will raise the intention to visit. In fact, an

[1] Before estimating the models, the potential existence of collinearity is tested. With a maximum variance inflation factor (VIF) of 6.57, all the parameters are below the recommended value of 10 (Hair, Black, Babin, Anderson, & Tatham, 2006; Neter, Wasserman, & Kutner, 1989). The Jarque-Bera test does not support the normality assumption of the residuals; thus, by replicating the regression estimates with the trimming function of 5%, we obtain that no relevant changes in the parameter estimates are found. Finally, the Breusch-Pagan test shows that heteroskesdaticity exists; accordingly, the White heteroscedasticity-consistent standard errors are computed, presenting no change in terms of significance in any of the parameters.

increasing effect is observed: the greater the improvement in image, the greater the effect on intention. Still, observe that a minimum increment in image is necessary (specifically from *very negative* to *fair*) to start showing a positive effect.

If the initial attitude is *negative* (second panel), the same increasing pattern is found, note, however, that a change from *negative* to *very negative* does not give room for a zone of tolerance and the reduction in intention is significant. Still, it is important to observe that the reduction in intention from *negative* to *very negative* is lower than the increase in intention from *negative* to *fair* (t=6.17, p<0.01).

If the attitude before the visit is *fair* (third panel), an increment to *positive* leads to a stronger intention ro revisit[2], nevertheless, a decrement from *fair* to *negative* seems to fall within a zone of tolerance as the effect on intention is still positive (the effect is much lower than the former (t=5.97, p<0.01), but still non-null). If the reduction in image goes from *fair* to *very negative*, then the impact on intention does become negative. While this last result is as expected, it is important to highlight that this impact is lower than the positive effect found when the attitude is increased to *positive* (t=6.47, p<0.01). It looks like there is a cushion that softens the negative change in image.

Contrary to expectations, if the individuals have an initial positive attitude, a reduction in their attitude leads to positive effects on intention. Certainly, there is a decreasing pattern: the effect from *positive* to *fair* is higher than the effect from *positive* to *negative*, in fact, from *positive* to *very negative* the effect is null. Still, it is surprising how lenient these people with a

[2] Given the scarcity of observations in five combinations of "image changes", we cannot estimate their effects. In particular, "positive-very positive" and "very positive-positive" have zero observations, and "fair-very positive", "very positive-fair" and "very positive-very negative" have only one observation.

positive attitude are. Finally, people with a prior very positive attitude do show a significant reduction in intention when the image becomes negative (fourth panel).

In order to test the potential asymmetric effects of image variations on intention to visit, this study compares the variables that show improvement of image (e.g. fair-positive) to the counterpart variables that reflect a worsening (e.g. positive-fair). Table 3 presents the results of the Wald test. We find asymmetric effects in the comparisons “very negative-negative”, “negative-fair”, “very negative-fair”, “very negative-positive”. Note that the only case in which the variable reflecting a worsening is greater than the variable showing an improvement is “very negative-negative”, in the other occurrences, irrespectively of whether the worsening parameters are positive or negative, the improvement parameters are superior, documenting again some sort of tolerance. These results do not mean that a worsening of a destination image is not having a negative on intention to visit. For example, the parameter for “very positive-negative” is negative, but the amount of this negative effect is similar to the amount of the positive effect of “negative-very positive”. The results show symmetric effects for “fair-positive”, “negative-positive” and “negative-very positive”. The effect of a variation in image towards its improvement or worsening is similar for these values.

[Please insert Table 3 about here]

Regarding the control variables, independent trips have a negative effect on intention, as it seems that professionally-organized trips lead to greater intention to revisit. Regarding the information source, in line with the previous result, travel agencies exert a positive influence on intention to revisit compared to any other information sources. It seems that professionalization

makes a difference when planning a trip in Korea. As for purpose, “leisure, recreation and holiday” are related to greater intention to revisit.

Satisfaction models. Starting with a *very negative* attitude toward Korea before the visit (first panel), any increase in the attitude after the visit enhances satisfaction. As in the intention models, an increasing effect is observed, and also with a minimum increment in image -from *very negative* to *fair*- to start showing a positive effect on satisfaction.

If the initial attitude is *negative*, an increasing pattern is also found, with an absence of a zone of tolerance when the attitudes shift from *negative* to *very negative* (a significant and negative effect in found for the variable “negative-very negative”). It is relevant to observe that the reduction in satisfaction from *negative* to *very negative* is lower than the increase in satisfaction from *negative* to *fair* (t=2.79, p<0.01). While the difference in both magnitudes is narrower than in the intention models, it is still significant.

If the attitude before the visit is *fair*, an increment to *positive* leads to a higher satisfaction, nevertheless, a decrement from *fair* to *negative* seems to fall within a zone of tolerance as the effect on satisfaction is still positive (the effect is much lower than the former (t=5.44, p<0.01), but still non-null). If the reduction in image goes from *fair* to *very negative*, then the impact on satisfaction does become negative. While this last result is as expected, it is important to highlight that this impact is lower than the positive effect found when the attitude is increased to *positive* (t=2.77, p<0.01). As in the intention models, there seems to be a cushion that softens the negative change in image.

If the individuals have an initial positive attitude, an important deviance from the intention models is found in the satisfaction models. While in the former, a reduction in attitude

leads to positive effects on intention, in the latter, a positive effect on satisfaction is only found if the shift in image goes from *positive* to *fair*, if it goes from *positive* to *negative* it becomes null, and from *positive* to *very negative* the effect on satisfaction is negative. Whereas some leniency is still observed, people seem to reduce their zone of tolerance when dealing with satisfaction. As for people with a prior very positive attitude a non-significant effect on satisfaction is found when the image becomes negative.

Regarding the potential asymmetric effects of image variations on satisfaction, as before, this study compares the improvement variables (e.g. fair-positive) to the counterpart deterioration variables (e.g. positive-fair). Table 4 presents the Wald test's results. We find asymmetric effects in the comparisons "very negative-negative", "negative-fair", "negative-positive", "very negative-positive" and "negative-very positive". As in the intention to visit model, the only case in which the deterioration variable is greater than the improvement variable is "very negative-negative", in the other cases, the improvement parameters are higher in line with zone of tolerance. The results show symmetric effects for "fair-positive" and "very negative-fair". The effect of a change in image towards its improvement or worsening is similar for these values.

[Please insert Table 4 about here]

Concerning the control variables, in line with the intention models, independent trips have a negative effect on satisfaction and travel agencies seem to have a positive influence when compared to any other information sources. In terms of satisfaction, professionally-planned trips lead to greater satisfaction. As for the purpose, "leisure, recreation and holiday" and "shopping"

are clearly related to greater satisfaction. Finally, “Business and professional activities” also seem to favor satisfaction.

Conclusion

Recognizing the importance of destination image in reflecting travelers’ belief about a travel place (Josiassen et al., 2016), a number of studies have investigated the formation, measurement, and influences of destination image on travel behavior (Gallarza et al., 2002). The research to assess changes in destination image is, however, relatively limited. This paper particularly addresses the essential question of how much change in perceived image of a destination is enough. The findings of this study revealed asymmetric effects in the variation of perceived destination image before and after the trip on travel behaviors, including satisfaction and behavioral intention to revisit the destination, which are two customer-centric measures of destination performance in the qualitative approach. By employing the concept of the zone of tolerance (Nadiri & Hussain, 2005), the traveler’s sensitivity to changes of destination image is estimated. Indeed, a gap in destination image embodying a higher expectation than actual experiences does not necessarily create negative travel outcomes, and this study demonstrated the existence of a margin for forgivable differences. Regarding loss aversion (Novemsky & Kahneman, 2005), the directional change of destination image is important and elicits different effects on travel behavior. For example, the magnitude of the effect of image variations (from a negative image of the destination at the pre-trip stage to a very negative destination image at the post-trip stage) is much larger on satisfaction and behavioral intention to revisit the destination than a change in the other direction (from very negative destination image before visiting to a

negative destination image after a trip). Such asymmetric effects of image variation have been observed consistently for both satisfaction and intention to revisit.

This study provides theoretical and practical implications for these results. To the authors' knowledge, this is the first study to analyze the impact of image changes on customer-centric measures of performance by employing the zone of tolerance concept (Johnston, 1995). This study found that travelers are lenient, even if they experience a decline in the destination image, which suggests a zone of tolerance in travelers' sensitivity to variations in destination image. Most tourism studies about destination image have employed a static approach, focusing on destination image either before or after trips, as well as after exposure to marketing stimulus (e.g., Chen & Tsai, 2007; Chi & Qu, 2008). However, this research sheds light on the scope of the image changes that generate positive and negative influences on travel behaviors. This study also applies the theory of loss aversion, which has largely been used in the literature on information-seeking behavior (Money & Crotts, 2003) and pricing (Nicolau, 2008), for the destination image. The theory of loss aversion explains the asymmetric effects of image variations and copes with the shifting directions of such changes.

With regard to practical implications, DMOs should identify their travelers' sensitivities to image changes and develop marketing strategies according to these sensitivities. Persistent efforts or investment to improve destination image by offering extraordinary service experiences to destination visitors naturally entails abundant cost and time. Identifying an acceptable level of image change is therefore essential for DMOs to maximize the efficiency of their marketing strategy.

The greater the improvement in the destination image, the greater the effect on traveler satisfaction and intention, and this study supports this belief. Some nuances can nevertheless be

derived from the results that are important for DMOs to consider when designing marketing strategies. First, for a positive effect to occur, a minimum increment change in image is necessary, although this depends on the pre-trip image level. Jumping from *very negative* to *negative* is not enough, for example, and only if the image reaches the *fair* level does a positive effect start to appear. Second, the zone of tolerance found is not consistent for all image levels; more specifically, people tend to be more lenient when they have a positive pre-trip image; otherwise, a reduction in the image will have a negative effect (e.g., a change from *negative* to *very negative* does not make room for a zone of tolerance with the consequent reduction in intention). Third, it is important to consider the distinction between satisfaction and intention to revisit when analyzing the destination image because a potential zone of tolerance does not always operate the same way. If individuals have an initial positive attitude, for example, they might be more lenient in terms of intention to revisit, but they will penalize the destination in terms of satisfaction.

While this study suggests important academic and practical implications, there are several limitations that can be addressed in future research. First of all, this study used a single dimension to measure destination image. As the tourism literature has indicated that destination image includes not only overall image but also cognitive and global images that require multiple items to assess the attribute-oriented image (Josiassen et al., 2016), from a methodological viewpoint, both reliability and validity would increase. Accordingly, future research considering multifaceted scales of destination image is recommended. Second, this research assesses customer-centric measures of destination performance (i.e., qualitative performance), including travel satisfaction and behavioral intention. Hence, this suggests that tourism scholars estimate the relationship of image changes with the quantitative performance – tourist arrivals, income, or

productivity. Third, certainly, the study of pre- and post-trip image formation and change entails certain methodological challenges. Ideally, the pre-trip image survey asking about destination image should definitely take place before the trip. Then, the post-trip survey would be conducted after the trip to the same sample of respondents in order to avoid potential measurement bias. In practice, however, it is a huge challenge to have a large-scale sample to reply to a survey both before and after the trip. As the alternative of using different samples pre- and post-trip does not capture the potential image change for each individual, we compromise so that the same individuals from a large-scale sample are interviewed after the trip. Even though it can be argued that the potential measurements should not critically affect the conclusions of the article (recall that we are more interested in the relative comparisons than the absolute impacts), we recognize that some bias might exist and that better measures could offer more realistic effects regarding the absolute impacts. Thus, future research applying two stages of data collection between pre- and post- trips is suggested. Fourth, this study focuses on tourism in South Korea, and studies of more diverse geographic and cultural contexts are necessary to generalize the findings. Fifth, a longitudinal study would be recommended to better understand trends in image changes and accurately evaluate the impact on travel behaviors.

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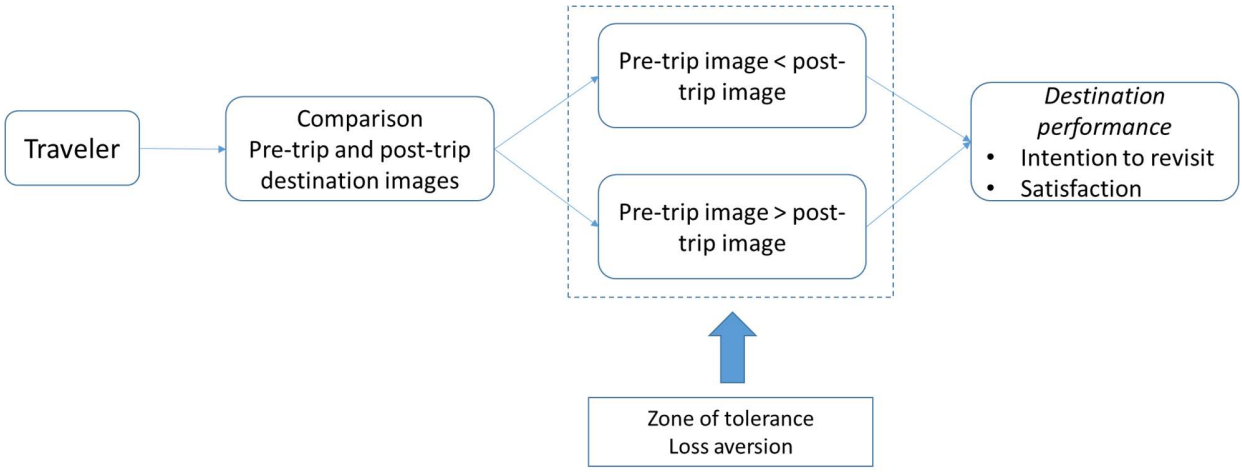

Figure 1. The effect of pre-and post-trip image on traveler behavior

Table 1. Profiles of respondents

Variables	Frequency	Percent
Demographic		
Gender		
Female	6,656	55.4%
Male	5,368	44.6%
Education level		
High school	1,552	12.9%
University	8,147	67.8%
Postgraduate	1.882	15.6%
Other	339	2.8%
N/A	104	0.9%
Age		
18 – 20 years old	702	5.8%
21 – 30 years old	4560	37.9%
31 – 40 years old	3282	27.3%
41 – 50 years old	1816	15.1%
51 – 60 years old	1203	10.0%
61 years old and above	424	3.5%
N/A	40	0.3%
Top five countries		
China	5,379	44.7%
Japan	2,180	18.1%
America	696	5.8%
Taiwan	619	5.1%
Hong Kong	536	4.5%
Travel behaviors		
Number of visits to Korea in last three years		
One time	7,832	65.1%
Two times	1,551	12.9%
Three times	794	6.6%
Four times and over	1,848	15.4%
Pattern of travel visits		
Only visiting Korea	11,219	93.3%
Visited other countries before Korea	624	5.2%
Visited other countries after Korea	317	2.6%
Planning horizon		
1 month ago	5,870	48.8%
2 months ago	2,548	21.2%
3 – 4 months ago	2,073	17.2%

5 – 9 months ago	1,090	9.1%
10 months ago and above	442	3.7%
Purpose of Korea visits		
Leisure	6,982	58.1%
Beauty and health purpose	122	1.0%
Religion and pilgrimage	111	0.9%
Shopping	1,201	10.0%
Visiting friends and relatives	785	6.5%
Business	2,387	19.9%
Education	429	3.6%
Other	6	0.1%

Table 2. Effect of image change on intention to revisit and satisfaction

Variable	Intention Model 1 (Tobit)	Intention Model 2 (Tobit)	Intention Model 3 (OLS)	Intention Model 4 (OLS)	Satisfaction Model A (Tobit)	Satisfaction Model B (Tobit)	Satisfaction Model C (OLS)	Satisfaction Model D (OLS)
Very negative-Negative	-0.008	-0.011	-0.009	-0.010	0.027	0.037	0.015	0.015
	(0.071)	(0.070)	(0.031)	(0.031)	(0.080)	(0.079)	(0.032)	(0.032)
Very negative-Fair	0.787[a]	0.808[a]	0.322[a]	0.324[a]	0.827[a]	0.856[a]	0.351[a]	0.350[a]
	(0.118)	(0.117)	(0.053)	(0.052)	(0.132)	(0.130)	(0.054)	(0.054)
Very negative-Positive	1.024[a]	1.050[a]	0.349[a]	0.351[b]	1.256[a]	1.254[a]	0.448[a]	0.451[a]
	(0.250)	(0.248)	(0.111)	(0.110)	(0.278)	(0.275)	(0.114)	(0.114)
Very negative-Very positive	2.732[a]	2.819[a]	0.880[a]	0.884[a]	1.764[a]	1.838[a]	0.735[a]	0.742[a]
	(0.465)	(0.460)	(0.192)	(0.192)	(0.475)	(0.470)	(0.198)	(0.197)
Negative-Very negative	-0.453[a]	-0.423[a]	-0.183[a]	-0.182[a]	-0.584[a]	-0.545[a]	-0.204[a]	-0.203[a]
	(0.020)	(0.019)	(0.008)	(0.008)	(0.023)	(0.023)	(0.009)	(0.008)
Negative-Fair	0.739[a]	0.711[a]	0.313[a]	0.313[a]	0.642[a]	0.611[a]	0.263[a]	0.264[a]
	(0.047)	(0.047)	(0.021)	(0.021)	(0.053)	(0.052)	(0.022)	(0.021)
Negative-Positive	0.984[a]	0.981[a]	0.362[a]	0.366[a]	1.190[a]	1.204[a]	0.450[a]	0.451[a]
	(0.176)	(0.174)	(0.078)	(0.078)	(0.196)	(0.194)	(0.081)	(0.080)
Negative-Very positive	1.924[a]	1.929[a]	0.614[a]	0.625[b]	2.105[a]	2.120[a]	0.669[a]	0.673[b]
	(0.540)	(0.535)	(0.235)	(0.235)	(0.604)	(0.597)	(0.242)	(0.242)
Fair-Very negative	-0.329[a]	-0.276[a]	-0.125[a]	-0.125[a]	-0.821[a]	-0.752[a]	-0.263[a]	-0.262[a]
	(0.033)	(0.033)	(0.014)	(0.014)	(0.042)	(0.042)	(0.015)	(0.014)
Fair-Negative	0.330[a]	0.339[a]	0.159[a]	0.159[a]	0.155[a]	0.172[a]	0.075[a]	0.075[a]
	(0.022)	(0.021)	(0.010)	(0.009)	(0.024)	(0.024)	(0.010)	(0.009)
Fair-Positive	1.371[a]	1.406[a]	0.567[a]	0.564[a]	1.072[a]	1.104[a]	0.454[a]	0.456[a]
	(0.152)	(0.150)	(0.068)	(0.068)	(0.169)	(0.167)	(0.070)	(0.070)
Positive-Very negative	-0.166	-0.151	-0.084	-0.084	-0.514[a]	-0.489[a]	-0.188[a]	-0.186[b]
	(0.130)	(0.128)	(0.056)	(0.055)	(0.155)	(0.153)	(0.057)	(0.057)
Positive-Negative	0.411[a]	0.454[a]	0.202[a]	0.203[a]	0.000	0.064	0.027	0.026
	(0.086)	(0.085)	(0.038)	(0.038)	(0.099)	(0.098)	(0.040)	(0.039)
Positive-Fair	1.189[a]	1.170[a]	0.499[a]	0.500[a]	0.859[a]	0.840[a]	0.353[a]	0.353[a]
	(0.140)	(0.139)	(0.063)	(0.062)	(0.157)	(0.155)	(0.065)	(0.064)
Very positive-Negative	-0.999[c]	-1.079[c]	-0.405[c]	-0.398[c]	-0.559	-0.637	-0.245	-0.241
	(0.455)	(0.452)	(0.166)	(0.166)	(0.482)	(0.478)	(0.171)	(0.171)
Independent		-0.069[a]	-0.032[a]	-0.032[a]		-0.056[a]	-0.024[a]	-0.024[b]
		(0.018)	(0.008)	(0.008)		(0.020)	(0.008)	(0.008)
Travel agency		0.051	0.019	0.017		-0.041	-0.017	-0.017
		(0.031)	(0.014)	(0.013)		(0.035)	(0.014)	(0.014)
Relatives/Friends		-0.093[a]	-0.044[a]	-0.043[a]		-0.112[a]	-0.046[a]	-0.045[a]
		(0.020)	(0.009)	(0.008)		(0.023)	(0.009)	(0.008)
Internet		-0.083[a]	-0.041[a]	-0.041[a]		-0.116[a]	-0.047[a]	-0.046[a]
		(0.019)	(0.009)	(0.008)		(0.022)	(0.009)	(0.008)
Traveler's guides		-0.115[a]	-0.055[a]	-0.054[a]		-0.128[a]	-0.052[a]	-0.052[a]
		(0.030)	(0.013)	(0.013)		(0.034)	(0.014)	(0.013)
Media		-0.156[a]	-0.075[a]	-0.075[a]		-0.212[a]	-0.086[a]	-0.085[a]
		(0.029)	(0.013)	(0.012)		(0.033)	(0.013)	(0.013)
Korean office		-0.124[b]	-0.062[a]	-0.062[b]		-0.166[a]	-0.067[a]	-0.067[b]
		(0.048)	(0.021)	(0.021)		(0.055)	(0.022)	(0.021)
Airlines, hotels		-0.112[c]	-0.054[c]	-0.054[c]		-0.210[a]	-0.083[a]	-0.083[a]
		(0.055)	(0.024)	(0.023)		(0.063)	(0.025)	(0.024)
Leisure/recreation, holiday		0.176[a]	0.083[a]	0.082[a]		0.247[a]	0.097[a]	0.097[a]
		(0.036)	(0.016)	(0.015)		(0.042)	(0.016)	(0.016)
Health/medical treatment		0.109	0.053	0.052[d]		0.065	0.015	0.015
		(0.067)	(0.030)	(0.029)		(0.078)	(0.031)	(0.030)
Religion/pilgrimage		0.015	0.013	0.013		0.124	0.047	0.047
		(0.084)	(0.037)	(0.037)		(0.097)	(0.038)	(0.038)
Shopping		0.063	0.032	0.032[d]		0.243[a]	0.094[a]	0.095[a]
		(0.043)	(0.019)	(0.018)		(0.049)	(0.019)	(0.019)
Visiting F&R		-0.052	-0.023	-0.023		-0.061	-0.023	-0.022
		(0.042)	(0.018)	(0.018)		(0.049)	(0.019)	(0.018)
Business/professional activities		0.028	0.010	0.009		0.085[c]	0.030[d]	0.030[d]
		(0.037)	(0.016)	(0.016)		(0.043)	(0.016)	(0.016)
Copula correction (Very negative-Negative)				-0.002				0.0003
				(0.003)				(0.003)
Copula correction (Very negative-Fair)				0.002				0.002
				(0.003)				(0.003)
Copula correction (Very negative-Positive)				-0.003				-0.001
				(0.003)				(0.003)

Copula correction (Very negative-Very positive)				-0.0058[d] (0.003)				-0.005[d] (0.003)
Copula correction (Negative-Very negative)				-0.011[d] (0.005)				0.001 (0.006)
Copula correction (Negative-Fair)				-0.001 (0.003)				-0.001 (0.003)
Copula correction (Negative-Positive)				0.001 (0.003)				0.003 (0.003)
Copula correction (Negative-Very positive)				0.002 (0.003)				0.001 (0.003)
Copula correction (Fair-Very negative)				0.001 (0.003)				0.0021 (0.003)
Copula correction (Fair-Negative)				-0.010[c] (0.004)				0.003 (0.005)
Copula correction (Fair-Positive)				-0.001 (0.003)				0.0001 (0.003)
Copula correction (Positive-Very negative)				0.001 (0.0031)				0.003 (0.003)
Copula correction (Positive-Negative)				0.002 (0.003)				0.001 (0.003)
Copula correction (Positive-Fair)				0.003 (0.003)				-0.002 (0.003)
Copula correction (Very positive-Negative)				0.001 (0.003)				-0.002 (0.003)
Constant	1.722[a] (0.009)	1.727[a] (0.040)	0.544[a] (0.017)	0.544[a] (0.017)	1.569[a] (0.010)	1.520[a] (0.046)	0.474[a] (0.018)	0.4726[a] (0.0179)
Akaike info criterion	2.176	2.157	0.636	0.637	2.174	2.155	0.695	0.696
Schwarz criterion	2.186	2.176	0.654	0.664	2.184	2.174	0.713	0.724

Note: a=prob<0.001, b=prob<0.01, c=prob<0.05, d=prob<0.10

Table 3. Asymmetries in the effects of image on intention to visit

Variable	Parameter	Variable	Parameter	Wald test	Result
Very negative-Negative	-0.010 (0.031)	Negative-Very negative	-0.182[a] (0.008)	5.44[a]	Asymmetric
Negative-Fair	0.313[a] (0.021)	Fair-Negative	0.159[a] (0.009)	6.78[a]	Asymmetric
Fair-Positive	0.564[a] (0.068)	Positive-Fair	0.500[a] (0.062)	0.71	Symmetric
Very negative-Fair	0.324[a] (0.052)	Fair-Very negative	-0.125[a] (0.014)	3.74[a]	Asymmetric
Negative-Positive	0.366[a] (0.078)	Positive-Negative	0.203[a] (0.038)	1.88	Symmetric
Very negative-Positive	0.351[a] (0.110)	Positive-Very negative	-0.084 (0.055)	3.54[a]	Asymmetric
Negative-Very positive	0.628[a] (0.235)	Very positive-Negative	-0.398[c] (0.166)	0.88	Symmetric

Note: a=prob<0.001

Table 4. Asymmetries in the effects of image on satisfaction

Variable	Parameter	Variable	Parameter	Wald test	Result
Very negative-Negative	0.015 (0.032)	Negative-Very negative	-0.203[a] (0.008)	6.70[a]	Asymmetric
Negative-Fair	0.264[a] (0.021)	Fair-Negative	0.075[a] (0.009)	8.06[a]	Asymmetric
Fair-Positive	0.456[a] (0.070)	Positive-Fair	0.353[a] (0.064)	1.05	Symmetric
Very negative-Fair	0.350[a] (0.054)	Fair-Very negative	-0.262[a] (0.014)	1.61	Symmetric
Negative-Positive	0.451[a] (0.080)	Positive-Negative	0.026 (0.039)	4.73[a]	Asymmetric
Very negative-Positive	0.451[a] (0.114)	Positive-Very negative	-0.186[a] (0.057)	4.99[c]	Asymmetric
Negative-Very positive	0.673[a] (0.242)	Very positive-Negative	-0.241 (0.171)	3.10[a]	Asymmetric

Note: a=prob<0.001

Acknowledgement

The work described in this article was supported by a grant from The Hong Kong Polytechnic University (Project No. PolyU 1-BE0K).