Destination image and tourist loyalty: A meta-analysis

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HIGHLIGHTS

● A total of 66 independent studies were synthesized by meta-analysis.
● Destination image has significant impact on tourist loyalty, with varying degrees.
● Overall image has the greatest impact on tourist loyalty.
● Destination image has the greatest impact on composite loyalty.

ABSTRACT

Extant literature is inconclusive on the linkage between destination image and tourist loyalty, due to the multi-dimensional nature of the two concepts. The present study attempts to draw some informative conclusions about the relationship through a meta-analysis. A research framework was proposed in which 14 hypotheses were developed. A total of 66 independent studies were synthesized and analyzed. The findings reveal that the impact of destination image on tourist loyalty is significant, with varying degrees. Specifically, overall image has the greatest impact on tourist loyalty, followed by affective image and cognitive image. Cognitive–affective joint image fails to demonstrate a stable impact on tourist loyalty. Of the three levels of tourist loyalty, destination image has the greatest impact on composite loyalty, and then on attitudinal loyalty and behavioral loyalty, successively. The findings are discussed in light of their theoretical and practical implications for destination marketing and management.

1. Introduction

As a fundamental concept in marketing, customer loyalty is closely linked to corporate performance (Reichheld, 1993). It was revealed that a 5% increase in customer retention yields 85% more profits in service industry (Reichheld & Sasser, 1990). In addition, retention and maintenance of existing customers costs less than acquisition of new customers (Reichheld, 1996). Therefore, managing customer relationship and increasing customer loyalty has been a topic of strategic importance for organizations. Built upon related theories of customer loyalty in marketing literature, tourist loyalty as a topic in the field of travel and tourism has been studied since 1990s (e.g. Dimanche & Havitz, 1994). If tourists’ experience at a destination is understood as a product, the level of loyalty can be reflected in their behavioral intention to revisit the destination and intention to recommend the experience to friends and relatives (Oppermann, 2000). A number of studies has addressed tourist loyalty in relation to travel motivation, satisfaction, service quality, perceived value, and destination image (Chen & Chen, 2010; Huang & Hsu, 2009; Mechinda, Serirat, & Guild, 2009; Ramkissoon, Uysal, & Brown, 2011; Yoon & Uysal, 2005).

It has been acknowledged that the image perceived by tourists of a destination plays an important role in their decision-making, destination choice, post-trip evaluation, and future behaviors (e.g. Baloglu & McCleary, 1999; Echtner & Ritchie, 1991; Gallarza, Saura, & García, 2002). Knowledge about the images held by tourists toward a destination would increase the predictability of tourist loyalty. Presumably, tourists who perceive a destination favorably are more likely to revisit or recommend to others. Nevertheless, previous studies are inconclusive on the relationship between destination image and tourist loyalty. Some studies found that the destination image directly influenced tourist loyalty (Bosque & Martín, 2008; Lee, Scott & Kim, 2008), some revealed an indirect relationship (Castro, Armario, & Ruiz, 2007; Chi & Qu, 2008), and still others found that destination image exerted both direct and indirect influence on tourist loyalty (Bigné, Sánchez, & Sánchez, 2008).
encoding and synthesizing a large body of study measures the magnitude and direction of the relationship/effect results of every independent study by the effect-size index that tourist loyalty in quantitative terms. The technique of meta-draw conclusions in a super-perception, integrations in narrative Schmidt, and Jackson (1982) that problem in social and behavioral sciences, as argued by Hunter, dimensional constructs. This has been identified as a common problem in social and behavioral sciences, as argued by Hunter, Schmidt, and Jackson (1982) that “the studies will almost never be precisely comparable in design, measures, and so forth, and the finding will typically vary across studies in bizarre ways” (p. 129). An integrative approach is therefore much needed to establish “generalizations about substantive issues from a set of studies directly bearing on those issues” (Jackson, 1980, p. 438). However, there has been no attempt to integrate published findings on the relationship of destination image and tourist loyalty. In fact, the traditional approach to synthesizing knowledge in tourism research has been narrative reviews of literature or summary of descriptive statistics. Highly dependent on researchers’ subjective perception, integrations in narrative–discursive nature may only draw conclusions in a superficial way (Crouch, 1995).

The purpose of the present study is to draw informative conclusions about the relationship between destination image and tourist loyalty in quantitative terms. The technique of meta-analysis will be employed. As “analysis of the results of statistical analyses” (Hedges & Olkin, 1985, p. 13), meta-analysis quantifies the results of every independent study by the effect-size index that measures the magnitude and direction of the relationship/effect under investigation (Cooper, 1998; Hunter & Schmidt, 2004; Rosenthal, 1991). This technique has many advantages over independent quantitative studies or narrative literature review. First, by encoding and synthesizing a large body of study findings on a standardized scale, meta-analysis represents a powerful method to address two questions, “Does it work?” and “How well does it work?” (Frattaroli, 2005; Rosenthal & DiMatteo, 2001). It has much greater power and scientific rigor to disclose true relationships due to the accumulation of estimated effect sizes. It also protects against over-interpretation of differences across studies (Willig, 1985). Second, meta-analysis is a replicable method which provides foundation and directions for future research on the same constructs and relationships. It facilitates statistical generalization of the knowledge (Lipsey & Wilson, 2001). Compared to narrative reviews, meta-analysis reduces subjective bias because it provides findings that can be configured in a comparable statistical form through standardization.

Specifically, the current study aims to synthesize the empirical findings of 66 published studies on destination image and tourist loyalty. The search includes both English and Chinese database. The inclusion of Chinese literature was based on two considerations. First, a computerized literature search has revealed that a substantial number of studies on destination image and tourist loyalty have been devoted to Chinese tourists and/or conducted in the Chinese context. Second, with unprecedented number of arrivals in world’s tourist destinations, Chinese tourists would most likely represent a large market share (Hsu, Cai, & Li, 2010). Knowledge of the Chinese tourists would increase the representativeness and allow for an enhanced understanding of the global travel marketplace.

The article is organized as follows. The following section is devoted to a thorough review of literature pertaining to destination image and tourist loyalty. Findings of the relationship between the two are articulated to substantiate the formation of hypotheses. In the subsequent section, a detailed presentation of the meta-analysis procedure is presented, followed by implications in the final section. The findings should enrich the body of knowledge in destination image and tourist loyalty research and also provide guidelines for destinations to formulate targeted marketing strategies.

2. Literature review

Many concepts in social and behavioral sciences have been proposed from different philosophical assumptions and paradigms. Therefore, their corresponding theorizations and operationalizations may not be universally identical and often suggest multi-dimensional nature. Since the main focus of this study is the linkage between destination image and tourist loyalty, which are two multi-dimensional concepts, a review of the definitions and measurements of the two constructs is presented below.

2.1. Destination image

Destination image plays an important role in tourists’ decision-making and subsequent travel behavior (e.g. Baloglu & McCleary, 1999); consequently, they have been examined extensively in the tourism literature (Pike, 2002). Past definitions of destination image have been various, as demonstrated in Table 1. Several attempts have been undertaken to summarize the definitions. For example, Gallarza et al. (2002) indicated that “there are almost as many definitions of image as scholars devoted to its conceptualization” by

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Hunt (1971)</td>
<td>Impressions that a person or persons hold about a state in which they do not reside</td>
</tr>
<tr>
<td>Lawson and Bond-Bovy (1977)</td>
<td>An expression of knowledge, impressions, prejudice, imaginations and emotional thoughts an individual has of a specific object or place</td>
</tr>
<tr>
<td>Crompton (1979)</td>
<td>The sum of beliefs, ideas, and impressions that a person has of a destination</td>
</tr>
<tr>
<td>Embacher and Buttle (1989)</td>
<td>Ideas or conceptions held individually or collectively of the destination under investigation</td>
</tr>
<tr>
<td>Echtner and Ritchie (1991)</td>
<td>The perceptions of individual destination attributes and the holistic impression made by the destination</td>
</tr>
<tr>
<td>Gartner (1993) (1996)</td>
<td>Destination images are developed by three hierarchically interrelated components: cognitive, affective, and conative</td>
</tr>
<tr>
<td>Baloglu and McCleary (1999)</td>
<td>An individual’s mental representation of knowledge, feelings, and global impressions about a destination</td>
</tr>
<tr>
<td>Murphy, Pritchard, and Smith (2000)</td>
<td>A sum of associations and pieces of information connected to a destination, which would include multiple components of the destination and personal perception</td>
</tr>
<tr>
<td>Bigné et al. (2001)</td>
<td>The subjective interpretation of reality made by the tourist</td>
</tr>
<tr>
<td>Kim and Richardson (2003)</td>
<td>A totality of impressions, beliefs, ideas, expectations, and feelings accumulated toward a place over time</td>
</tr>
</tbody>
</table>

Note 1: Adapted from Gallarza et al. (2002) and Martin and Bosque (2008).
illustrating with 12 definitions (p. 60). Martin and Bosque (2008) also summarized 20 definitions of destination image.

Despite the different definitional constructions, destination image is generally interpreted as a compilation of beliefs and impressions based on information processing from various sources over time that result in a mental representation of the attributes and benefits sought of a destination (e.g. Crompton, 1979; Gartner, 1993). There have been two major approaches in conceptualizing destination image: three-dimensional continuum approach and three-component approach. Initially proposed by Echtner and Ritchie (1991), the first approach suggests attribute—holistic, functional—psychological, and common—unique as the three continuums of image. The attribute—holistic continuum denotes the perceptions of destination attributes as well as holistic impressions of the place. The functional—psychological continuum represents the distinction between directly measurable, functional components of a destination and intangible, psychological characteristics. The third continuum is indicative of both generic, common features and unique characteristics of the place. The three-component approach represents a more commonly practiced theoretical perspective in image studies (e.g. Gartner, 1993). It holds that destination image is composed of cognitive, affective, and conative components. The cognitive component refers to tourists' knowledge on the destination attributes. The affective component is represented by the feelings or emotional responses toward the various features of a place. The conative aspect of destination image is the behavioral manifestation from the tourists' side and can be understood as onsite consumptive behaviors. The three components represent a layered succession in image formation; that is, a tourist forms the cognitive image, based on which he/she develops the affective image and then the conative image (Chen & Phou, 2013; Gartner, 1993).

The two above-mentioned frameworks have guided many destination image studies and related scale development. This study classified existing research into cognitive image, affective image, overall image, cognitive—affective joint image, and self-congruity, as demonstrated in Table 2. In earlier and still in most of the current studies, cognitive image has been the focal point of investigation, as evidenced in the 41 out of 66 articles located by this study. The measurements of cognitive image usually solicit tourists' perception on multiple attributes of the destination, such as attractions, infrastructure, environment, and service quality (Beeral & Martin, 2004; Gallarza et al., 2002). Recently, more and more researchers are inclined to acknowledge the role of the affective dimensions of destination image. Tourists' feelings and emotions toward a destination may play an important role in image formation, in addition to the physical, concrete attributes of the place. This can be manifested in the 13 identified articles where the affective image of various tourist destinations was examined. Usually on semantic—differential scales, affective image is assessed by tourists' emotional experience such as happiness and excitement evoked by the destination experience.

Also, a joint cognitive—affective approach has been adopted in an attempt to capture destination image in a better way (Martin & Bosque, 2008). This approach is operational, more so than definitional; for example, in Martin and Bosque’s (2008) study, destination image was operationalized as a latent variable that consisted of cognitive and affective attributes. Such integrative measurements have been observed in seven studies. It is worth clarifying that the cognitive—affective operational definition of destination image is different from overall image, which is conceptualized as tourists' holistic impression of a destination (Echtner & Ritchie, 1991) and is largely measured by using a single rating item. For example, Bigné et al. (2001) measured the overall image of two destinations in Spain with one item: “how would you describe the image that you have of...?” Respondents were asked to rate their overall perception on a 5-point scale anchored by “highly unfavorable—highly favorable”. The treatment of overall image as a global question with uni-dimensional measurement makes it difficult to ascertain its underlying dimensions, which may be more than the simple sum of cognitive and affective attributes.

Another perspective of examining destination image is the concept of self-congruity, which denotes the degree of congruence between destination image and tourists' self-image (Sirgy & Su, 2000). A person's self-image consists of their actual, ideal, and social selves (Sirgy, 1985). The destination’s consistency with a person's actual or ideal self-image influences pre-visit preferences (e.g. destination choice, Litvin & Goh, 2002) and post-visit intentions (e.g. satisfaction, revisit intention, intention to recommend, Kastenholz, 2004). Empirical studies seem to suggest that a closer match between destination image and self-image of a tourist would increase the likelihood of visitation (Sirgy & Su, 2000). A total of 12 articles addressed self-congruity in destination image research.

### 2.2. Tourist loyalty

In marketing literature, customer loyalty has been defined in several ways (Jacob & Kyner, 1973). The first definition of loyalty is attitudinal. Customers' beliefs about the value received lead to their overall attitude toward a product or service, such as the intention to repurchase (Fournier, 1994; Hawkins, Best, & Coney, 1989). The second defines loyalty as behaviors, including continued patronage and act of recommendation (Hughes, 1991; Sönmez & Graefe, 1998). An alternative conceptualization is the integration of the two views, which defines customer loyalty as the relationship between relative attitude and repeat patronage (Dick & Basu, 1994; Oliver, 1999). Tourist loyalty has been treated as an extension of customer loyalty in tourism setting (Backman & Crompton, 1991; Baloglu, 2001); that is, if destination experience is considered as a product, tourists may choose to revisit or recommend it to friends and relatives (Yoon & Uysal, 2005). Specifically, tourist loyalty has been conceptualized

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Classifications of studies on destination image.</th>
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<tbody>
<tr>
<td>Destination image</td>
<td>Studies and author(s)</td>
</tr>
<tr>
<td>Cognitive image</td>
<td>1, 2, 8, 9, 10, 12, 13, 15, 16, 17, 18, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 32, 34, 36, 37, 40, 41, 42, 44, 50, 51, 53, 54, 57, 58, 59, 62, 63, 64, 65, 66</td>
</tr>
<tr>
<td>Affective image</td>
<td>2, 7, 8, 13, 17, 18, 21, 27, 34, 41, 52, 58, 65</td>
</tr>
<tr>
<td>Overall image</td>
<td>3, 6, 12, 13, 14, 20, 21, 24, 28, 35, 39, 41, 42, 43, 53</td>
</tr>
<tr>
<td>Cognitive—affective joint image</td>
<td>11, 19, 31, 33, 38, 55, 56</td>
</tr>
<tr>
<td>Self-congruity</td>
<td>4, 5, 23, 31, 45, 46, 47, 48, 49, 52, 60, 61</td>
</tr>
</tbody>
</table>

in one of the following approaches: behavioral loyalty, attitudinal loyalty, and composite loyalty (Jacoby & Chestnut, 1978). Behavioral loyalty focuses on the behavioral outcome such as repeat visits. This approach usually fails to disclose the antecedents factors that affect customer loyalty (Yoon & Uysal, 2005). Attitudinal loyalty refers to tourists’ psychological expression such as intention to revisit a destination or recommend to other potential tourists. The composite or combined approach of loyalty suggests the integration of both attitude and behavior (Backman & Crompton, 1991; Iwasaki & Havitz, 1998); that is, tourists who demonstrate behavioral loyalty toward particular destinations tend to have a positive attitude toward those destinations. At operational level, revisit intention and recommendations to others are the most commonly used measured for tourist loyalty (Alcañiz et al., 2009; Horng et al., 2012; Hung & Petrick, 2012; Oppermann, 2000). Repeat visitors represent a much desired market segment for many tourism products and destinations (Lau & McKercher, 2004). They tend to stay longer at a destination (Oppermann, 1998), spread positive word of mouth (Oppermann, 2000; Shoemaker & Lewis, 1999), and participate in consumptive activities more intensively (Lehto, O’Leary, & Morrison, 2004). Repeat visitors are also cost-effective as they incur a much lower marketing costs than first-time visitors (Shoemaker & Lewis, 1999).

The present study classified the selected studies into behavioral loyalty, attitudinal loyalty, and composite loyalty, as demonstrated in Table 3. Out of the 66 articles, 23 measured tourists’ intention to recommend and one measured the preference to travel. As Yoon and Uysal (2005) argued, attitudinal loyalty goes beyond the observable behavior and manifests in brand preferences or intention to buy. Therefore, both intention to recommend and preference are categorized into attitudinal loyalty. Thirty-five articles which measured visit and revisit intention were grouped into behavioral loyalty. Twenty-seven studies measured attitudinal and behavioral loyalty at the same time. These measurements, termed as behavioral intention in Hung and Petrick (2011), were categorized into composite loyalty.

2.3. Study framework and hypotheses

Previous studies have suggested that the post-consumption behavior of tourists can be influenced by the image they perceive of the destination (e.g. Chen & Tsai, 2007; Chi & Qu, 2008). However, most studies have accounted for only one or two dimensions of each concept, without employing an integrative perspective. This section of literature review is dedicated to articulating past research on the relationship between destination image and tourist loyalty. Based on a review of existing literature, a research framework and corresponding hypotheses were proposed (see Fig. 1).

### 2.3.1. Destination image and attitudinal loyalty

Attitudinal loyalty has been operationalized by intention to recommend in many studies. The more positive the image of a destination held by a tourist, the greater the likelihood that he or she would recommend it to other potential tourists such as friends and relatives. Studies have found that positive linkages exist between tourists’ intention to recommend and image components including overall image (Bigné et al., 2001), affective image (Lee, Lee, & Lee, 2005), and cognitive image (McDowall & Ma, 2010). By surveying tourists at two islands off the coast of Spain, Bigné et al. (2001) detected a significant, positive relationship between overall image and intention to recommend, demonstrated by a path coefficient of 0.628. In a study on tourists to World Cup in South Korea, Lee et al. (2005) discovered that tourists with higher emotional attachment to South Korea were more likely to recommend the destination to others, with a path coefficient of 0.45 between the two constructs. McDowall and Ma (2010)’s recent work about international tourists in Bangkok, Thailand, revealed that cognitive image had a significant influence on tourists’ intention to recommend. Specifically, the higher the evaluation on attractions, facilities, and service, the stronger the intent to recommend Thailand to friends and relatives, as represented by a path coefficient of 0.30. The cognitive—affective joint image and self-congruity also demonstrated significant effect on attitudinal loyalty (Hung & Petrick, 2012; Wang & Wu, 2011). However, the only two studies on the relationship between self-congruity and the particular dimension of attitudinal loyalty were not sufficient for meta-analysis, which depends on a sizable number of studies to ensure the generalizability (Frattaroli, 2006). These studies were therefore excluded. As such, the study proposed the following hypotheses:

H1 (a). Cognitive image of destination has a positive direct impact on tourists’ intention to recommend.

H1 (b). Affective image of destination has a positive direct impact on tourists’ intention to recommend.

H1 (c). Overall image of destination has a positive direct impact on tourists’ intention to recommend.

H1 (d). Cognitive—affective joint image of destination has a positive direct impact on tourists’ intention to recommend.

### 2.3.2. Destination image and behavioral loyalty

Strictly speaking, behavioral loyalty should be measured by the actual behavior, such as visit times. However, repurchase intention has been a widely used measure for behavior loyalty, as argued by many studies that intention and action are successive stages of behavior and intention is an effective indicator of behavior (e.g. Fan, Zheng, Yao, & Mu, 2009). This has been demonstrated in a number of empirical studies where behavioral intention, rather than the actual behavior, was used to assess behavioral loyalty (Baloglu, 2000; Horng, Liu, Chiu, & Tsai, 2011; Kaplanidou & Gibson, 2010). Thus, this study grouped visit intention and revisit intention into

<table>
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<th>Table 3 Classifications of studies on tourist loyalty.</th>
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<tbody>
<tr>
<td>Tourist loyalty</td>
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<td>----------------</td>
</tr>
<tr>
<td>Attitudinal loyalty</td>
</tr>
<tr>
<td>Behavioral loyalty</td>
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<tr>
<td>Composite loyalty</td>
</tr>
</tbody>
</table>

Note 3: Same as Table 2.
behavioral loyalty. Past studies have demonstrated that destination image significantly affects visit and revisit intention (Choi, Tkachenko, & Sil, 2011; Nadeau, Heslop, O'Reilly, & Luk, 2008; Lee et al., 2008). If tourists hold high evaluations of a destination where they experience desirable emotions, find match in self-congruity, or obtain a good overall impression, it is likely that they will take the action of visiting or revisiting the place. Otherwise, there will be little or no visit or revisit intention. Destination choice was also found to be influenced by self-congruity (Litvin & Goh, 2002). It was found that a closer match between tourists' self-conception and destination image increased the likelihood of tourists visiting the destination (Sirgy & Su, 2000). Accordingly, the following hypotheses were proposed.

**H2 (a).** Cognitive image of destination has a positive direct impact on visit or revisit intention.

**H2 (b).** Affective image of destination has a positive direct impact on visit or revisit intention.

**H2 (c).** Overall image of destination has a positive direct impact on visit or revisit intention.

**H2 (d).** Cognitive–affective joint of destination has a positive direct impact on visit or revisit intention.

**H2 (e).** Self-congruity has a positive direct impact on visit or revisit intention.

### 2.3.3. Destination image and composite loyalty

Composite loyalty is the integration of attitudinal and behavioral loyalty and is often operationalized as behavioral intention which includes revisit intention and intention to recommend (Baldinger & Rubinson, 1996; Chen & Tsai, 2007). It seems that a positive evaluation of the destination image would lead to higher level composite loyalty demonstrated by the tourists (Bosque & Martin, 2008; Lee, 2009a,b). For example, a research conducted with 807 individuals visiting a destination in Spain revealed that a favorable preconceived image of the destination had a positive effect on tourists' expectations and loyalty. Information concerning two sub-dimensions of loyalty was solicited: tourists' attitudes toward revisiting the place (“I will try to return...” and “I think I will revisit...”) and their intention or willingness to recommend it to others (“I will encourage relatives and friends...” and “I would recommend...”). Previous studies also observed that self-congruity was positively related to tourists' attitude and behavior toward a destination, influencing destination preference and revisit intention (Litvin & Goh, 2002; Sirgy, 1985). The discussion of these findings leads to the following hypotheses:

**H3 (a).** Cognitive image of destination has a positive direct impact on behavioral intention.

**H3 (b).** Affective image of destination has a positive direct impact on behavioral intention.

**H3 (c).** Overall image of destination has a positive direct impact on behavioral intention.

**H3 (d).** Cognitive–affective joint of destination has a positive direct impact on behavioral intention.

**H3 (e).** Self-congruity has a positive direct impact on behavioral intention.

### 2.3.4. Mediating variables between destination image and tourist loyalty

In addition to the direct linkages between destination image and tourist loyalty, many studies have examined the relationship through the mediation of other factors such as satisfaction and perceived value (e.g. Chi & Qu, 2008). Tourists holding a positive destination image tend to demonstrate a higher level of satisfaction and perceived value, and then more likely to revisit the destination in the future and recommend it to others (Bigné et al., 2001; Lee et al., 2005; Yoon & Uysal, 2005). Due to the complexity in indirect relationships which vary remarkably across studies, the total effects of the mediating variables were calculated and utilized in this study. The direct effects between destination image and tourist loyalty will be compared against the total effects which are the sum of direct and indirect effects.

### 3. Study methods

Meta-analysis was utilized to assess the proposed hypotheses. Initially developed in the field of psychology in the 1970s (Glass, 1976), meta-analysis has not been met with many applications in tourism research. As first steps, researchers obtain the test statistic data from multiple studies and, from them, extract the effect size. Cohen (1988) has defined effect size as “the degree to which the phenomenon is present in the population or the degree to which the null hypothesis is false...the larger the value of effect size, the greater the degree to which the phenomenon under study is manifested” (p. 9–10). The effect sizes will then be standardized and subjected to null-hypothesis testing to determine the strength of the relationships (Glass, 1976; Glass, McGaw, & Smith, 1981).

#### 3.1. Sample selection

In the first step, major databases were searched for related studies on destination image and tourist loyalty, including Scincedirect, EBSCO, SAGE, and Taylor & Francis. Major tourism journals provided by these databases include Tourism Management, Annals of Tourism Research, Journal of Travel Research, Journal of Travel & Tourism Marketing, Journal of Vacation Marketing, Tourism Geography, Journal of Sustainable Tourism, Journal of Sport & Tourism, Tourism and Hospitality Research, Leisure Sciences, Journal of China Tourism Research, Journal of Hospitality Marketing & Management, Journal of Quality Assurance in Hospitality and Tourism, Current Issues in Tourism, The Service Industries Journal, Journal of Business Research, and the like. Studies written in Chinese were searched on CNKI.com and other major academic databases. The original search pertains to articles published from 2000 to 2012 as a preliminary search in the major database indicated that quantitative research on the relationship between destination image and tourist loyalty has been a recent phenomenon since 2000. One article published in July 1998 was also deemed qualified and therefore included, making the final search period from July 1998 to August 2012. The selection of studies followed three steps. First, indexed keywords related to destination image (e.g. destination image, tourist image perception, perceived image, self-congruity) and tourist loyalty (e.g. post-purchase behavior, future behavioral intention, destination loyalty, destination selection, repeat visit intention, intention to recommend) were searched to establish a database for this study. Second, quantitative studies that tested the image—loyalty relationships were chosen. Third, studies that reported sample sizes, correlation coefficients, regression coefficients and path coefficients were selected. The remaining studies were excluded as they failed to meet the criteria. Of total 66 qualified articles, 48 were in English and 18 were in Chinese. Seventy-four independent samples with 117 coefficients of direct effects and 130 coefficients of total effects were obtained, making the total sample size 64952.

#### 3.2. Coding

Selected studies were classified on several dimensions, including author, publication year, study context, sample size,
Independent variables (e.g., cognitive image, affective image), dependent variables (e.g., revisit intention), effect (direct effect, indirect effect, total effect), use of language (English or Chinese), and methods of data analysis (structural equation modeling, regression analysis, correlation analysis). Four criteria were observed. First, the average was calculated for multi-attributes measurements in cognitive image and tourist loyalty. Otherwise, the reported single-item value was used. Second, when there was no significant effect reported, the present study coded the insignificant effects as 0 across the database. This is based on the consistency considerations as some studies did not report a specific value for the insignificant effect whereas others did (such as 0.06). Third, total effects should not exceed 1. However, two studies in Chinese reported total effects more than 1 and were therefore excluded. Fourth, total effects were only gathered from the studies utilizing structural equation modeling. To enhance inter-rater reliability, one researcher coded the database twice at different time points and then the second researcher randomly selected 10 articles each time to code independently. After comparing the results from the two coding processes, researchers made minor revisions to the codes to reach consensus.

3.3. Statistical analysis

Meta-analysis extracts the separate $r$ (correlation coefficient, regression coefficient, path coefficient) from the multiple studies to calculate the combined effect size. The formula of this method includes three equations. First, the $r$ was calculated for each sample and converted to a standardized score using Fisher’s $r$ to $Z$ transformation, demonstrated in equation (1).

$$z_i = \frac{0.5ln[(1 + r_i)/(1 - r_i)]}{\sqrt{\frac{r_i}{n_i}}}, \quad (1)$$

Second, the weighted-average $z$-score was calculated in equation (2).

$$\bar{z}_r = \frac{\sum_{i=1}^{k} \left( \frac{n_i}{\sqrt{n_i - 1}} \right) z_i}{\sum_{i=1}^{k} n_i}, \quad (2)$$

Third, the weighted-average $z$-score was converted back to an effect size, as shown in equation (3).

$$\tau = \left( e^{2\bar{z}_r} - 1 \right) \left( e^{2\bar{z}_r} + 1 \right), \quad (3)$$

where $z_i$ is the $i$th study of Fisher’s $Z$-score, $r_i$ = effect size of the $i$th study, $\bar{z}_r$ = weighted-average $z$-score, $n_i$ = sample size of the $i$th study, $g$ = the number of effect size, $\tau$ = combined effect size generated by meta-analysis.

The data analyses were conducted in Comprehensive Meta-Analysis (CMA) 2.0 software. The main advantages of CMA 2.0 include ease of data entry, calculation and output (Martin, 2008). The analysis generated both fixed-effects model and random-effects model for options. This study applied a random-effects model as it assumed both within- and between-studies variability, demonstrated by a significant $Q$-statistic that rejected the homogeneity assumption across studies (Martin, 2008; Zhang & Wang, 2011).

4. Results

4.1. Analysis of direct effects

Table 4 shows the direct effects of destination image on tourist loyalty. Studies on cognitive image had the largest number of direct effects and sample sizes on tourist loyalty, confirming cognitive image as a major interest in image research. Overall, cognitive image had a significant impact on attitudinal, behavioral, and composite loyalty, with combined effect sizes of 0.191, 0.159, and 0.199, respectively, and $P$ values less than 0.001. Therefore, hypotheses H1 (a), H2 (a), and H3 (a) were supported. Academic interests in affective image have been a more recent phenomenon, as demonstrated by its relatively smaller number of effect sizes than those of cognitive and overall image. The combined effect sizes of affective image on attitudinal, behavioral, and composite loyalty were 0.377, 0.267, and 0.446 with $P$ values less than 0.001. This confirms the significant impact of affective image on tourist loyalty, supporting hypotheses H1 (b), H2 (b), and H3 (b). Overall image significantly influenced attitudinal, behavioral, and composite loyalty, as showed in effect sizes of 0.484, 0.394, and 0.540. Therefore, hypotheses H1 (c), H2 (c), and H3 (c) were supported. Cognitive—affective joint image had effect sizes of 0.455, 0.299, and 0.242, on attitudinal, behavioral, and composite loyalty, respectively. The impact of joint image on attitudinal loyalty was insignificant with $P$ value of 0.069. H2 (d) and H3 (d) were thus supported but H1 (d) was not supported. With only two studies, the effect size of self-congruity on attitudinal loyalty was not sufficient for meta-analysis so the studies were not included. However, self-

<table>
<thead>
<tr>
<th>Image variables</th>
<th>Loyalty variables</th>
<th>Number of direct effects</th>
<th>Sample size</th>
<th>Combined effect size</th>
<th>P-value</th>
<th>Standard error</th>
<th>Combined effect size range 95%</th>
<th>Fail-Safe-Number</th>
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</thead>
<tbody>
<tr>
<td>Cognitive image</td>
<td>Attitudinal loyalty</td>
<td>15</td>
<td>9486</td>
<td>0.191</td>
<td>0.000</td>
<td>0.011</td>
<td>0.114–0.265</td>
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<tr>
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<td>Behavioral loyalty</td>
<td>23</td>
<td>10695</td>
<td>0.159</td>
<td>0.000</td>
<td>0.012</td>
<td>0.082–0.234</td>
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<td>6244</td>
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<td>0.129–0.580</td>
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<td>3186</td>
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<td>0.229–0.621</td>
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<td>−0.039–0.771</td>
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<td>0.022</td>
<td>0.069</td>
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<tr>
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<td>Composite loyalty</td>
<td>3</td>
<td>2252</td>
<td>0.242</td>
<td>0.000</td>
<td>0.006</td>
<td>0.156–0.324</td>
<td>105</td>
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<td>Attitudinal loyalty</td>
<td>2</td>
<td>537</td>
<td>−</td>
<td>−</td>
<td>−</td>
<td>−</td>
<td>−</td>
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<tr>
<td></td>
<td>Behavioral loyalty</td>
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<td>2043</td>
<td>0.304</td>
<td>0.000</td>
<td>0.008</td>
<td>0.218–0.384</td>
<td>235</td>
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<td></td>
<td>Composite loyalty</td>
<td>6</td>
<td>2680</td>
<td>0.358</td>
<td>0.000</td>
<td>0.024</td>
<td>0.219–0.483</td>
<td>493</td>
</tr>
</tbody>
</table>

Note 4: Fail-Safe-Number (FSN) is a statistic to estimate the number of unpublished studies required to bring the meta-analytic effect size down to a statistically insignificant level. Meta-analytic results are valid if FSN exceeds its critical value, which is five times the number of studies, plus 10 (Rosenthal, 1991). In this study, FSNs all exceeded their corresponding critical values.
congruity had effect sizes of 0.304 and 0.358 on behavioral and composite loyalty, respectively, with $P$ values less than 0.001. These results supported $H_2 (e)$ and $H_3 (e)$.

4.2. Analysis of total effects

Due to the heterogeneity of mediating variables across studies, each mediating factor corresponds to only a small number of studies. This makes it difficult to generalize the mediations and demonstrate the overall pattern of indirect effects. Also, studies that employed regression and correlational analyses failed to report the indirect effects. As such, the current study considers the total effects which are the sum of direct and indirect effects, rather than the specific mediating variables. Table 5 shows the total effects of destination image on tourist loyalty, which are the combination of direct and indirect effects. It was found that all image dimensions had significant effects on attitudinal loyalty, behavioral loyalty, and composite loyalty. All combined total effects, except that of affective image on attitudinal loyalty, were larger than the combined direct effects. This is supportive of the proposition that destination image not only has direct impacts on tourist loyalty, but exerts indirect influences through mediation of other factors. Fig. 2 illustrates the direct effects and total effects of destination image on tourist loyalty. The overall image had the greatest impact on tourist loyalty, with significant direct effects and total effects at 0.001 level. The effect sizes of overall image were the largest, followed by those of affective image, and then cognitive image.

Cognitive–affective joint image also held high combined effect sizes; however, with relatively smaller sample size and large standard error, the results were rather unstable. Self-congruity had significant impact on behavioral loyalty and composite loyalty, with relatively high effect sizes. Compared to cognitive and affective image, self-congruity had higher effect sizes on behavioral loyalty. Compared to cognitive image, self-congruity also showed higher effect sizes on composite loyalty. Of the three levels of tourist loyalty, all image dimensions had the greatest impact on composite loyalty, and then on attitudinal loyalty and behavioral loyalty, successively.

5. Implications and conclusion

Destination image and tourist loyalty, as well as their interrelationships, have been attractive areas of investigation for both academics and practitioners in tourism (e.g. Chi & Qu, 2008). Despite the considerable amount of studies on destination image and tourist loyalty, the multi-dimensional nature of the constructs and the variances across studies make it difficult to ascertain a solid linkage between the two. With this in mind, the current study synthesized 66 published articles aiming for informative conclusions which cannot be drawn easily at the level of individual studies. Fourteen hypotheses were proposed and tested through a rigorous meta-analysis procedure. The overall results offered strong support for the statistically significant relationships between different dimensions of destination image and those of tourist loyalty, except for cognitive–affective joint image and attitudinal loyalty. Therefore, the proposition that destination image plays an important role in achieving tourist loyalty was confirmed.

In terms of theoretical implications, this meta-analysis has contributed to the body of knowledge on destination image and tourist loyalty in three ways. First, it examined in depth the multi-dimensional nature of destination image and tourist loyalty. Although a number of studies have acknowledged the linkage between destination image and tourist loyalty, not much has been done to integrate the multiple dimensions of both constructs. Based on an extensive review of past studies, the current study proposed and confirmed a framework which is more comprehensive in accounting for and testing the multiple dimensions simultaneously. Second, while the significant impact of destination image on tourist loyalty is confirmed, different dimensions of destination image demonstrated quite varying degrees of impacts. It revealed that out of all dimensions of destination image, overall image had the greatest impact on tourist loyalty, followed by affective image and cognitive image. Cognitive–affective joint image failed to demonstrate a stable impact on tourist loyalty. The findings deserve explicit attention given the fact that existing studies on destination image have largely focused on cognitive image. As constructs less investigated in existing literature, affective image and overall image are often measured by a single item or primitive scales. Although more recent studies have employed a cognitive–affective perspective of image, the meta-analysis showed a rather unstable impact of the joint approach. As the holistic impression held by a tourist of the destination, overall image encompasses much more than a simple sum of the cognitive and affective image (Bigné et al., 2001; Echtner & Ritchie, 1991). In the present study, overall image demonstrated the potential of serving as a strong proxy for destination image. Compared to the traditional approach which treats the cognitive aspects as the operational definition of destination image, overall image may represent a novel and broader theoretical view and therefore deserves further scrutiny into its nature and possible underlying dimensions. The impact of self-congruity on

### Table 5

<table>
<thead>
<tr>
<th>Image variables</th>
<th>Loyalty variables</th>
<th>Number of total effects</th>
<th>Sample size</th>
<th>Combined effect size</th>
<th>P-value</th>
<th>Standard error</th>
<th>Combined effect size range 95%</th>
<th>Fail-Safe-Number</th>
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<tr>
<td>Cognitive image</td>
<td>Attitudinal loyalty</td>
<td>16</td>
<td>9865</td>
<td>0.280</td>
<td>0.000</td>
<td>0.008</td>
<td>0.216–0.341</td>
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<tr>
<td>Behavioral loyalty</td>
<td>27</td>
<td>12423</td>
<td>0.229</td>
<td>0.000</td>
<td>0.009</td>
<td>0.168–0.289</td>
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<td>Composite loyalty</td>
<td>16</td>
<td>9189</td>
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<td>0.000</td>
<td>0.019</td>
<td>0.249–0.425</td>
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<td>4422</td>
<td>0.290</td>
<td>0.000</td>
<td>0.021</td>
<td>0.165–0.405</td>
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<td>Composite loyalty</td>
<td>5</td>
<td>2232</td>
<td>0.487</td>
<td>0.000</td>
<td>0.010</td>
<td>0.402–0.563</td>
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<tr>
<td>Cognitive–affective joint image</td>
<td>Attitudinal loyalty</td>
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<td>5795</td>
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<td>0.041</td>
<td>0.371–0.602</td>
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<td>0.000</td>
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<td>0.457–0.751</td>
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<td>680</td>
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<td>0.000</td>
<td>0.098</td>
<td>0.405–0.812</td>
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<td>0.000</td>
<td>0.030</td>
<td>0.282–0.566</td>
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<td>Behavioral loyalty</td>
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<td>0.095–0.746</td>
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</table>
tourist loyalty was shown to be significant and stable; thus, the congruence between destination image and tourists’ self-image was also an important antecedent of tourist loyalty. However, due to limitation in the number of studies, the impact of self-congruity on attitudinal loyalty was not examined.

Third, the findings also provided tenable evidence that destination image exerts different influence on the three dimensions of tourist loyalty. Destination image has the largest effect on composite loyalty and lesser effects on attitudinal and behavioral loyalty. In other words, the higher evaluation a tourist holds of the destination’s cognitive, affective, and overall qualities, the higher his or her loyalty toward the destination at both attitudinal and behavioral level. Despite the positive, significant effect of destination image on behavioral loyalty, the strength of the relationship is relatively weaker when compared to composite and attitudinal loyalty. This corroborates with Backman and Crompton (1991)’s argument that loyalty is more than the behavioral manifestation on consumers’ side, it is also about additional variance that behavioral approaches fail to address. One should also take into consideration the unique nature of tourism products and the relationship between tourists and destinations. Tourism products are intangible and experiential in nature (Mill & Morrison, 2002); selecting a destination to visit is much more complex than selecting tangible merchandise. Due to constraints in time, personal finance, companionship, or simply driven by novelty pursuits, tourists may not choose the destinations with best image in mind. As a result, the intention to visit or revisit may appear low. However, tourists’ post-visit relationship with a destination can be continuously reflected in their overall assessment of the place. For example, a favorable image held by tourists would increase their propensity to spread positive word of mouth to other potential tourists (Bigné et al., 2001).

In terms of practical implications, both destination image and tourist loyalty have been recognized as critical elements in achieving competitiveness for tourist destinations (Bigné et al., 2001; Yoon & Uysal, 2005). An enhanced knowledge about the two concepts and their interrelationships would ensure the formation of more precise strategic vision and initiatives, and therefore enhance the management of tourists’ decision-making and behavior patterns. The findings of this study offer several specific managerial implications for destination marketing and management. First of all, a positive image can help destinations to retain customer loyalty in a sustainable way. As the mental representation of a place in tourists’ minds, image is a key antecedent of destination loyalty. A destination with a distinctively positive and recognizable image has a greater chance of being selected by tourists (Pearce, 1982). Also, a favorable perception held by tourists can produce positive word of mouth and influence other potential tourists (Bigné et al., 2001). Therefore, marketing communications must strive to effectively create, maintain and improve the perceived image of the destination.

Second, tourist loyalty is significantly affected by tourists’ perception of the destination. However, the impacts of destination image on tourist loyalty can be complex and multi-faceted, rather than linear and uni-dimensional. The findings of this study offer several specific managerial implications for destination marketing and management. First of all, a positive image can help destinations to retain customer loyalty in a sustainable way. As the mental representation of a place in tourists’ minds, image is a key antecedent of destination loyalty. A destination with a distinctively positive and recognizable image has a greater chance of being selected by tourists (Pearce, 1982). Also, a favorable perception held by tourists can produce positive word of mouth and influence other potential tourists (Bigné et al., 2001). Therefore, marketing communications must strive to effectively create, maintain and improve the perceived image of the destination.

Third, despite the widely accepted cognitive approach which focuses on the functional characteristics or physical properties of...
tourist destinations, the feelings and emotional experiences of tourists deserve managerial attention, too. Since tourists employ a holistic perspective to form their perceptions of a destination. Marketers should reinforce both cognitive and affective dimensions with increased sample size. Third, the current study calls for further examination into the conceptualization and operationalization of overall image as a theoretical construct. Multiple-item scales may be considered in future research to enhance the validity and reliability of their findings (Um, Chen & Ro, 2006).

Lastly, our research, which is built off the English and Chinese database, may be replicated and compared with studies from other language sources to increase the generalizability of the knowledge.

6. Limitations and directions for future research

Although meta-analysis can be a powerful analytical tool in exploring the relationship between destination image and tourist loyalty, it has several limitations. First, this study was not able to exhaust all previous studies on destination image and tourist loyalty, although FSN demonstrated a high level of validity. Second, meta-analysis has also been criticized for having to lose contextual information such as characteristics of the sample and variations in the design quality (Brockwell & Gordon, 2001; Field, 2003). Similar to other meta-analytic studies, the paper was unable to report every inter-study differences, sample characteristics, and variation in model specification. Third, the quality of meta-analysis is dependent on the reported data in published studies and therefore “the aggregated results can only be as good as the studies themselves” (Lim, 1999, p. 282).

Findings of this meta-analysis provide directions for future research undertakings on destination image and tourist loyalty research. First, the impact of destination on tourist loyalty is a complex phenomenon, with both direct and indirect effects. Since combined effect size is the weighted average of all effect sizes, it is unavoidable that some information, including effects of mediating variables, was lost during the process. Future studies can incorporate structural equation modeling to further assess the functions of mediating variables. Second, although the total effect sizes gathered in this study are substantial, effect sizes regarding affective image and self-congruity were relatively limited. More empirical studies are encouraged to investigate the impacts of affective image and self-congruity on tourist loyalty with increased sample size. Third, the current study calls for further scrutiny into the conceptualization and operationalization of overall image as a theoretical construct. Multiple-item scales may be considered in future research to enhance the validity and reliability of their findings (Um, Chon & Ro, 2006).

Lastly, our research, which is built off the English and Chinese database, may be replicated and compared with studies from other language sources to increase the generalizability of the knowledge.

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References


