

## **Correlation between tourists' perceptions/evaluations of destination attributes and their overall satisfactions: Observations of a meta-analysis**

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### **Abstract**

This study examined the correlation between tourists' perception/evaluation of destination attributes and their overall satisfaction. Using the data gathered from 34 previous studies and applying the meta-analysis method, this study found that destination image, destination quality, and destination attribute satisfaction have significant positive effects on the tourists' overall satisfaction, whether the latter variable is singly or multiply scaled; all the overall estimates have small to medium sizes. However, three issues should be taken into account when interpreting this correlation. First, not all of the components of the attribute-based constructs (destination image, destination quality, destination attribute satisfaction) can have significant effects on the overall tourist satisfaction. Second, the unfavourable attributes of a destination may have some negative influences on tourist satisfaction. Third, the attribute-based constructs represent the external/common antecedents of overall tourist satisfactions; their predicting power may be eliminated when controlled by other internal/personal forces, such as personal values. Implications for future research and destination attributes management are discussed based on these observations.

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**Keywords:** destination image, destination quality, destination attribute satisfaction, overall tourist satisfaction, Comprehensive Meta-Analysis (CMA).

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### **Introduction**

Within the tourism literature, many individual efforts have been made in examining the linear relationships among destination image, tourist satisfaction and tourist intention (image → satisfaction → intention to revisit and/or

recommend) (Bigné, Sánchez, and Sánchez, 2001; Chen and Tsai, 2007; Chi and Qu, 2008; Jin, Lee, and Lee, 2015; Liu, Li, and Yang, 2015; Park and Njite, 2010; Prayag and Ryan, 2012; Wang and Hsu, 2010). Two syntheses (i.e., meta-analyses) have also been attempted to

verify the relationship between destination image and tourist intention (Zhang, Fu, Cai, and Lu, 2014), and between satisfaction and tourist intention (Dolnicar, Coltman, and Sharma, 2015). In the former study, Zhang, Fu, Cai, and Lu (2014) combined the results of 66 papers published between 2000 and 2012 in English and Chinese. The researchers defined five categories of destination image (cognitive, affective, overall, joint cognitive and affective, and self-congruity), and three types of tourist loyalty (attitudinal, behavioural, and composite). Their analysis revealed that almost all the image components had some significant effects on tourist loyalty; joint image, however, did not have a significant influence on attitudinal loyalty. In the latter study, Dolnicar, Coltman, and Sharma (2015) used the database of 25 papers published in *Annals of Tourism Research*, *Journal of Travel Research*, and *Tourism Management* between 2002 and 2011. The outcome of their analysis showed that satisfaction (tourist satisfaction, overall satisfaction, recovery satisfaction, and satisfaction) and intention (behavioural intention, loyalty, word-of-mouth, and intention) had a significant correlation. However, no study has been done to synthesise the correlation between destination image and tourist satisfaction.

Structurally, destination image is a compilation of the cognitive/functional and affective/psychological attributes that are attached to a destination (Echtner and Ritchie, 2003). Destination attributes, however, also represent the external or pull motivational forces that attract individuals to visit a destination (Yoon and Uysal, 2005), and the experiences and external values that they can have/obtain at the destination (Kim, 2012; Jin, Lee, and Lee, 2015; Wu, Li, and Li, 2014). Additionally, destination attributes are sometimes used as the indicators of destination quality (Chen and Tsai, 2007; Žabkar, Brenčič, and Dmitrović, 2010). These attribute-based constructs, although used in “conceptually different ways” (Dolnicar, Coltman, and Sharma, 2015, p.157), are found to be the significant antecedents of tourist satisfaction (Assaker and Hallak, 2013; Chen, Lee, Chen, and Huang, 2011; Kim, 2012; Yoon and Uysal, 2005).

However, there is no consistency when measuring tourist satisfaction. Many studies gathered tourist evaluation of destination attributes to understand their satisfaction and/or destination performance (Eusébio and Vieira, 2013; Fallon and Schofield, 2004; Kozak and Rimmington, 2000; McDowall and Ma, 2010). Others focused on tourists’ overall satisfactions with the destination as a whole (Chen and Tsai, 2007; Kim, Holland, and Han, 2013; Park and Njite, 2010; Tasci and Boylu, 2010). Within the latter group of studies, some used a multiple-item scale while others applied a single-item scale of overall tourist satisfaction. In several attempts, researchers used the measures of satisfaction and intention (Ryan, Shuo, and Huan, 2010), and satisfaction and value for money (Lee, Graefe, and Burns, 2007) to examine the satisfaction construct. In such cases, the construct of tourist satisfaction does not only represent satisfaction.

In summary, there are a great deal of studies examining destination attributes, tourist satisfaction, and the relationship between them. However, the constructs and measures found in previous studies are remarkably diverse. Consequently, although the results seem to be similar and/or identical, no central trend has yet been identified, and error and bias within the existing literature are not eliminated. This study, therefore, collects and categorizes the existing literature on destination attributes (e.g., destination image, destination quality, value, experience, attribute satisfaction) and tourist overall satisfaction to synthesise the understanding of the relationship between them. In order to do so, the meta-analysis method is applied. Generally speaking, meta-analysis “is a set of statistical methods for combining quantitative results from multiple studies to produce an overall summary of empirical knowledge on a given topic” (Littell, Corcoran, and Pillai, 2008, pp. 1-2). As one of its advantages, meta-analysis presents the key findings in a manner that “is more differentiated and sophisticated than conventional review procedures that rely on qualitative summaries or ‘vote-counting’ on statistical significance” (Lipsey and Wilson, 2001, pp. 1-2).

Following the design of Lau, Ioannidis, and Schmid (1997), this study aims to clarify the

similarity and dissimilarity in the results of previous studies on the relationship between destination attribute evaluation and tourist overall satisfaction. From there, the study tries to (1) find the overall estimate of this relationship, and (2) explain any dissimilarities that may exist. To achieve these goals, this study begins with a qualitative systematic review of the literature, followed by a calculation of the overall estimates, and concludes with a discussion on the findings and an explanation of the inconsistencies. The structure of the current paper, therefore, will reflect that flow of the research process.

## Literature review

### *Destination and destination attributes*

Generally speaking, a destination is the place to which someone or something is going or being sent (Oxford Dictionaries, 2016). In the leisure and tourism contexts, a destination can be as large as a region (Assaker, Vinzi, and O'Connor, 2011), a country (Kim, Agrusa, Chon, and Cho, 2008), a city/province (Kozak and Rimmington, 2000), or as small as a theme park (Wu, Li, and Li, 2014), and a festival site (Papadimitriou, 2013). Some smaller places have also been counted as destinations, for example, lodging facilities (Loureiro and Gonzalez, 2008), museums (Gil and Ritchie, 2009), and restaurants (Ryu, Lee, and Kim, 2012). Yet, the latter may be considered as the components of the former. From one perspective, a destination is "a geographical space in which a cluster of tourism resources exist" (Pike, 2008, p.24). In other words, it is an amalgam of tourism products which can offer an integrated experience to tourists (Buhalis, 2000; Fyall, Garrod, and Tosun, 2006). From another perspective, a destination is a place that visitors visit temporarily (Pike, 2008). However, the meaning of a destination is always subjectively perceived and/or interpreted by tourists depending on their travel itinerary, cultural background, purpose of visit, and past experience, among others (Buhalis, 2000).

Each destination in particular and each type of destination in general are attached with a variety of attributes (Baloglu and McCleary, 1999b; Peña, Jamilena, and Molina, 2012; Phillips and Jang, 2010). Those attributes are widely used in

the studies on destination image. Specifically, the sensory attributes are the single cognitive images which are perceived through the five senses of human beings. For example, Australia is represented by the visual attributes of kangaroo and the Sydney Opera House, the olfactory attributes of sea and Asian food, the auditory attributes of birds' singing and waves, and the tactile attributes of animals and sand, among others (Son and Pearce, 2005). In the same context, this country is favourably attached to the cognitive attributes of natural attractions and water sports by its international students (Son and Pearce, 2005). The cognitive element can be further divided into three subcategories, including functional or visible attributes (e.g., natural attractions, nightlife and entertainment), psychological or invisible attributes (e.g., hospitality, customs), and mixed functional and psychological attributes (e.g., crowdedness, cleanliness) (Echtner and Ritchie, 2003). These attributes or images are the results of a cognitive mechanism in which individuals process the inputs of information in the form of sensory stimuli to form the aggregated impressions of a destination. Yet, when they use an affective mechanism, or rely on their feelings, to describe or evaluate a destination, the images are the affective ones. Under this approach, any destination can be felt as arousing, exciting, pleasant and relaxing in a sense, and sleepy, gloomy, unpleasant and distressing in another (Russell and Pratt, 1980). When applying the cognitive-affective continuum to conceptualize destination image, other concepts which are labelled differently can also be considered as its special elements, for example, authenticity (Ramkissoon and Uysal, 2011), destination personality (Sahin and Baloglu, 2011), and risk (Fuchs and Reichel, 2011). In addition to the abovementioned specific attributes, a destination may also be described or perceived through its holistic or overall image (Baloglu and McCleary, 1999a; Echtner and Ritchie, 2003), which is the most general and integrative evaluation that individuals have of the destination as a whole.

Moreover, destination attributes are employed in the studies on tourist satisfaction. For example, the four dimensions of British tourists' satisfaction with Mallorca, Spain are "availability

of English language,” “destination attractiveness,” “facilities and services at the destination airport,” and “tourist attractions and facilities” (Kozak and Rimmington, 2000). The satisfaction of tourists to the central region of Portugal, otherwise, is structured by three components of “accessibility,” “attractions,” and “basic services” (Eusébio and Vieira, 2013). Destination satisfaction, measured on destination attributes, is equally treated as destination performance in several studies (Fallon and Schofield, 2004; McDowall and Ma, 2010).

Furthermore, some studies use destination attributes as the measures of quality. For example, Chen and Tsai (2007) adopted such attributes as cleanliness, food and beverage, infrastructure, price, safety, and weather to examine tourists’ evaluation of trip quality. Similarly, Žabkar, Brenčič, and Dmitrović (2010) developed the construct of “perceived quality of destination’s offerings” which includes accessibility, accommodation, attraction, cleanliness, cuisine, people, and safety/security, among others. Furthermore, some researchers also adopted destination attributes in their studies on tourists’ external or pull motivations (Yoon and Uysal, 2005), and experiences and external values (Kim, 2012; Jin, Lee, and Lee, 2015; Wu, Li, and Li, 2014).

The review of the literature further revealed that several researchers measure only one attribution-based construct in their studies, for example, destination image (Baloglu and McCleary, 1999b), and tourist satisfaction (Yuan, Wu, Zhang, Goh, and Stout, 2007). Some researchers deeply focused on one or two attributes of a destination, for example, safety/security and hygiene/health (Tasci and Boylu, 2010), and smoke (Li, Pearce, Morrison, and Wu, 2016). A couple of researchers separate the two basic components of destination image, thus form two different constructs of destination image (i.e., cognitive image), and emotion (i.e., affective image) (Wu and Ai, 2016; Prayag, Hosany, Muskat, and Del Chiappa, 2017). Others use different attributes to measure two distinct concepts, for example, image and experience (Jin, Lee, and Lee, 2015), image and quality (Chen and Tsai, 2007), image and satisfaction (Chi and Qu, 2008), and image and

value (Wu, Li, and Li, 2014). The differences between these practices lay in the coding and/or the scales of the measures. For example, the item of satisfaction with “natural environment” was measured on a terrible/delighted scale in one study (Kozak and Rimmington, 2000), while the item of perception (image, attribute) of “breathtaking scenery and natural attractions” was rated on a disagree/agree scale in another (Chi and Qu, 2008).

### ***Tourist satisfaction***

Within the existing literature, researchers may examine (1) attribute-based satisfaction, (2) overall satisfaction, and (3) both types of satisfaction. Specifically, attribute-based satisfaction is the satisfaction with the various attributes of a destination, and overall satisfaction is the satisfaction with the destination as a whole. Many researchers separately investigate both types of satisfaction in their studies (Correia, Kozak, and Ferradeira, 2013; Fallon and Schofield, 2004; Kozak and Rimmington, 2000; Lee, 2015; Yuan, Wu, Zhang, Goh, and Stout, 2007), while some others combine the measures of attribute-based satisfaction and overall satisfaction (Lee, 2009). When measuring overall satisfaction, researchers may use a single-item scale (Bigné, Sánchez, and Sánchez, 2001; Chen and Tsai, 2007; Park and Njite, 2010), or a multiple-item scale (Kim, Holland, and Han, 2013; Tasci and Boylu, 2010; Tian-Cole, Crompton, and Wilson, 2002; Yoon and Uysal, 2005). In the latter case, the measures vary across studies, which may include overall satisfaction, expectation, delight, enjoyment, worth of time/effort, and wise choice, among others.

### **Method**

#### ***The search of the papers***

This study began with the search of the related literature, which was implemented in January 2016. The tourism, leisure and hospitality management journals listed on SCImago Journal and Country Rank portal (<http://www.scimagojr.com/>) were used as the base of the search. The portal, in general, includes the journals and country scientific indicators developed from the information kept in the Scopus® database. As of January 2016, the category of tourism, leisure and hospitality management provided the ranking of 78 journals

in 2014. The Journal of Travel Research was added to the list by the researcher, because this is one of the three leading journals in the field of tourism (Dolnicar, Coltman, and Sharma, 2015). (At the time of the search, Journal of Travel Research was not included in the category of tourism, leisure and hospitality management. However, in the latest ranking of 2017, this journal is number one in this category). This resulted in a list of 79 journals.

The search of the previous studies was conducted as follows. First, the researcher visited the portal of each journal in the list to find related papers. The combination of "destination + image + satisfaction" was used as the single search term across all journals. The researcher read the titles and abstracts of the papers in the search result, and created an initial list of the papers which contain one or more of these keywords in their titles and/or abstracts ( $n = 135$ ). Among the three keywords, satisfaction served as the milestone one, since it is the dependable variable in the investigated association; there is no such relationship if satisfaction is missing. The other two keywords helped eliminate the studies that did not apply to the context of a destination, and did not examine any attribute-based constructs. Second, the researcher used the databases of two private universities in Eastern Japan (Kanto region) to obtain the papers. Third, the researcher briefly read each paper to see whether it (1) investigated any attribute-based constructs, overall tourist satisfaction, and the relationship between them, and (2) was put into the context of a destination (e.g., a region, a country, a city, a park/forest, a festival site, an industrial site). Those papers ( $n = 73$ ) which satisfied both the abovementioned criteria were kept for further reading and analysis.

Fourth, the researcher reread the remaining papers with an emphasis on the conceptualization and measurement of the attribute-based constructs and overall tourist satisfaction, the analysis of the relationship between them, and the report of the results. After that, an additional 39 papers were eliminated because they (1) had subjectively low reliability (e.g., inconsistency between graphic and textual reports), (2) did not analyse the

predictive effect that the attribute-based constructs have on overall tourist satisfaction (but the correlation between them), (3) analysed the predictive effect of overall tourist satisfaction on the attribute-based constructs, (4) did not report the insignificant coefficient(s) of the relationship, (5) reported coefficients whose values exceeded 1.0, (6) did not report the measures of overall tourist satisfaction, (7) used the attribute-based measures of both tourist satisfaction and/or other constructs, (8) implemented an incorrect procedure of factor analysis (i.e., to implement factor analysis on the whole sample, then to apply this result to compute regression analysis on the subsamples), and (9) only measured the holistic/overall image of the destination. Regarding the number 4 issue, Zhang, Fu, Cai, and Lu (2014) replaced the missing values with 0. However, the insignificant correlations do not necessarily have a value of 0; thus, the replacement might reduce/increase the summarized effect. Therefore, this study's researcher chose to exclude from the analysis the research whose insignificant coefficients were missing.

### ***The coding of the data***

The remaining 34 papers (published between 2000 and 2017) were then grouped into nine categories (Table 1) in accordance with the name of the construct (destination image, destination quality, destination attribute satisfaction, destination pull motivation, destination value, and experience), and the type of the measures of overall tourist satisfaction (multiple-item and single-item). The data for the meta-analysis were then collected from each paper and kept in an Excel file. They include the size of the sample, the direct effect that the attribute-based construct had on overall tourist satisfaction, and the direction of the effect (Pierce, 2008). When the model was verified on the whole sample and its subsamples, only the effects observed in the whole sample were recorded. However, when there was no data for the whole sample, the effects observed in each subsample were treated separately; in other words, each analysis on each subsample was considered as an individual study. When there were more than one data point (i.e., the effects

**Table 1.** Categorization of the papers

No.	List of papers	Number of papers	Number of data points	Attribute-based construct	Overall tourist satisfaction
1	Anil (2012), Jin, Lee, and Lee (2015), Kim, Holland, and Han (2013), Li, Pearce, Morrison, and Wu (2016), Liu, Li, and Kim (2017), Liu, Li, and Yang (2015), Palau-Saumell, Forgas-Coll, Amaya-Molinar, and Sánchez-García (2016), Prayag, Hosany, Muskat, and Del Chiappa (2017), Song, Su, and Li (2013), Tasci and Boylu (2010), Veasna, Wu, and Huang (2013), Wu and Ai (2016), Wu, Li, and Li (2014)	13	13	Destination image	Multiple items
2	Chen and Tsai (2007), Chi and Qu (2008), Craggs and Schofield (2011), Park and Njite (2010), Prayag (2009), Prayag and Ryan (2012), Tang (2014)	7	7	Destination image	Single item
3	Papadimitriou (2013), Tian-Cole, Crompton, and Wilson (2002), Žabkar, Brenčić, and Dmitrović (2010)	3	3	Destination quality	Multiple items
4	Chen and Tsai (2007), Chen, Lee, Chen, and Huang (2011), Fallon and Schofield (2004), McDowall and Ma (2010), Mohamad, Lo, Songan, and Wee (2010)	5	5	Destination quality	Single item
5	Chi and Qu (2008), Correia, Kozak, and Ferradeira (2013), Eusébio and Vieira (2013)*, Kozak and Rimmington (2000), Lee (2015), Yuan, Wu, Zhang, Goh, and Stout (2007)	6	7	Satisfaction	Single item
6	Yoon and Uysal (2005)	1	1	Pull motivation	Multiple items
7	Wu, Li, and Li (2014)	1	1	Value	Multiple items
8	Jin, Lee, and Lee (2015)	1	1	Experience	Multiple items
9	Kim (2012)	1	1	Experience	Single item

Note. \* Paper contributes two data points

of the separate factors), the average value was calculated and used in the analysis.

Since the coding did not involve the interpretation of the latent meanings, the intra-coder reliability was sought (Given, 2008). Specifically, the researcher coded and recoded the papers three different times to ensure the accuracy and consistency of the coding. In addition, the researcher also noted the context, the origin of the sample, the label of the construct, and the type and scale of the measures of the attribute-based construct and overall tourist satisfaction (Appendix).

**The analysis of the data**

After the necessary data were generated, the analyses were computed in Comprehensive Meta-analysis (CMA) 3.0 (<https://www.meta-analysis.com/>). CMA was developed by a group

of experts from the U.S. and U.K., and is now considered as the world’s best-selling product for meta-analysis. This software provides researchers the means (1) to assess the across-study variability in the size of the relationship between a predictor X and a criterion Y, (2) to synthesise the overall estimate of the X-Y relationship, and (3) to examine how the inclusion/removal of a study affects the combined results (Pierce, 2008).

CMA is often compared to STATA, another meta-analysis software, for their formulas and results. Specifically, CMA includes all the same computational formulas used by STATA (see Kan, *et al.*, 2013 for examples of formulas). In addition, the results produced by CMA are identical to those computed by STATA (Bax, Yu, Ikeda, & Moons, 2007).

One of the best features of CMA is that it can compute an effect-size estimate in one of more than 100 formats (Pierce, 2008). The examples include the odds ratio and log odds ratio of a dichotomous analysis, the standardized paired difference and raw mean difference of a continuous analysis, and the correlation coefficient and Fisher's  $z$  of a correlational analysis, among others. The friendly Window interface of CMA allows researchers to easily copy, cut, and paste their data. When analysing the correlation between two variables, CMA automatically calculates the summarized effect, the  $Q$  value (across-study variability or heterogeneity test), and the failsafe number (publication bias test), among others. The outcomes are displayed in traditional tables and high-resolution graphics.

Another excellent feature of CMA is that it can compute a fixed-effect model and a random-effects model for the core analysis of the correlation between two variables (Pierce, 2008). A fixed-effect model assumes that the effect sizes of previous studies are similar, while a random-effects model assumes the opposite observation. To determine which model's outcome should be reported, researchers may examine the  $Q$  values produced by CMA (Hardy & Thompson, 1998). For example, when the  $Q$  value is significant ( $p < 0.05$ ), it is possible to assume that the outcomes of previous studies are heterogeneous; consequently, the random-effects model can be selected (Dolnicar, Coltman, and Sharma, 2015).

In this study, only five meta-analyses were implemented due to the limited number of papers and data points. The analyses include those of the relationship between destination image and overall tourist satisfaction, between destination quality and overall tourist satisfaction, and between destination attribute satisfaction and overall tourist satisfaction.

## Findings and discussions

### ***Are the results of previous studies similar?***

Obviously, the majority of previous studies found that there is a significantly positive correlation between the attribute-based constructs (i.e., destination image, destination quality/performance, pull motivation, external value,

experiences) and overall tourist satisfaction (Bigné, Sánchez, and Sánchez, 2001; Prayag and Ryan, 2012; Wang and Hsu, 2010). However, there are cases when no significant relationship was found (Chen and Tsai, 2007; Kim, Holland, and Han, 2013; Veasna, Wu, and Huang, 2013), or the relationship was significantly negative (Li, Pearce, Morrison, and Wu, 2015; Yoon and Uysal, 2005). In addition, not all the dimensions of the attribute-based constructs could significantly affect tourist satisfaction (Anil, 2012; Lee, 2015; Papadimitriou, 2013). In several recent studies, researchers found that tourist satisfaction could also generate some significant effects on destination image (De Nisco, Mainolfi, Marino, and Napolitano, 2015; Kim, Park, and Kim, 2016), or destination value (Akinci, Kiyimlioğlu, and Inana, 2015). However, the theoretical framework of these studies was either missing or scattered.

### ***What are the overall estimates?***

According to the outcomes of the meta-analyses, the  $Q$  values were significant ( $p < 0.05$ ). In other words, the effects generated in previous studies were heterogeneous. Consequently, the random-effects models are reported (Table 2).

It was found that the effect that destination image has on the overall tourist satisfaction is positive and significant. However, the effect is larger when the overall satisfaction was measured on a multiple-item scale. Similarly, destination quality was also found to have a significant and positive influence on overall tourist satisfaction, given the type of the measure of overall tourist satisfaction being single- or multiple-item. The effect of the former (destination quality  $\rightarrow$  single-item overall tourist satisfaction) is two times smaller than that of the latter (destination quality  $\rightarrow$  multiple-item overall tourist satisfaction). Finally, tourists' satisfactions with the attributes of the destination are the positive significant antecedents of their overall satisfactions. The ranges of the summarized effects suggest that the association between the two constructs has a small-to-medium size (Leech, Barrett, and Morgan, 2005).

**Table 2.** The direct effect of the attribute-based constructs on overall tourist satisfaction

	Data points	Q value ( $\rho$ )	Sample size	Summarized effect	Summarized effect range	$\rho$	Failsafe number (critical value)
Destination image → Overall tourist satisfaction (multiple-item scale)	13	1178.408 (0.000)	6679	0.506	0.487-0.523	0.000	5950 (75)
Destination image → Overall tourist satisfaction (single-item scale)	7	114.885 (0.000)	3196	0.299	0.267-0.330	0.000	443 (45)
Destination quality → Overall tourist satisfaction (multiple-item scale)	3	227.198 (0.000)	1790	0.634	0.606-0.661	0.000	549 (25)
Destination quality → Overall tourist satisfaction (single-item scale)	5	97.348 (0.000)	2142	0.304	0.265-0.342	0.000	223 (35)
Attribute satisfaction → Overall tourist satisfaction (single-item scale)	7	253.102 (0.000)	2453	0.452	0.420-0.483	0.000	898 (45)

To check the validity of the analyses, publication bias analyses' results were also examined. It was revealed that the number of excluded or unpublished studies needed to bring the summarized effect down to a statistically insignificant level well exceeded their critical values, which are five times the number of studies plus 10 (Rosenberg, 2005; Zhang, Fu, Cai, and Lu, 2014). This outcome proves that the meta-analyses were reliable.

**Why are there dissimilarities in the results of previous studies?**

In the existing literature, there are some studies that reported an insignificant correlation between destination image and overall tourist satisfaction. Chen and Tsai (2007), for example, found that overall tourist satisfaction was only affected by perceived value (time, money, and effort); the importance of destination image (destination brand, entertainment, nature and culture, and sun and sand), and trip quality (hospitality, attractions, transport, and amenity) was insignificant. In another study, Kim, Holland, and Han (2013) discovered that both perceived value (overall and economic), and service quality (product and performance) had some significant effects on overall tourist satisfaction; that of destination image (destination atmosphere, travel information, shopping, and community attitude), however, was insignificant. In Veasna, Wu, and Huang (2013), the authors investigated the influences of destination attachment, destination source credibility, and destination image on overall tourist satisfaction;

the only significant antecedent was destination attachment, whose formation was influenced by the other two variables. These findings, however, are not powerful enough to reject the importance of destination image. Otherwise, they suggest that there are other important forces that can control the overall satisfactions of tourists. Specifically, the internal and personal variables (Iso-Ahola, 1982) of destination attachment and perceived value seem to overpower the external variable of destination image when they were combined in the same model (Chen and Tsai, 2007; Veasna, Wu, and Huang, 2013). In addition, the second-level elements of a particular first-level attribute of the destination (e.g., service quality) may have more significant influences on overall satisfactions than the compilation of all the first-level attributes of that destination (e.g., service quality, facilities, attractions, hospitality) (Kim, Holland, and Han, 2013).

Moreover, some studies suggested that the correlation between the attribute-based constructs and overall tourist satisfaction may sometimes have a negative direction. In one case, Li, Pearce, Morrison, and Wu (2016) focused on tourist perception of one unfavourable attribute of the destination (smoke). The negative correlation suggests that the more concerned the tourists were, the less satisfied they could be and vice versa. This interpretation, however, does not contradict the widely ascertained positive association between destination attributes and overall tourist



satisfaction, which indicates that the more positive the perception of the destination attributes are, the higher the level of satisfaction among tourists is. In another case, Yoon and Uysal (2005) found that the combination of three dimensions of destination image could generate a negative influence on overall tourist satisfaction. However, this dissimilarity can be explained as follows. First, the majority of the components of destination image (modern atmospheres and activities, wide space and activities, natural scenery, restaurants and tennis, different culture, interesting town and village, and water activities) were removed from the analysis. This undertaking has doubtlessly reduced the actual contribution of destination image. Second, the three dimensions included in the model (small size and reliable weather, cleanliness and shopping, and nightlife and local cuisine) may represent the unfavourable facets of the destination as being found in Li, Pearce, Morrison, and Wu (2016). If this is the case, a negative correlation is unavoidable, but is not unexplainable.

Furthermore, the existing literature documents that not all dimensions of the attribute-based constructs can have significant influences on overall tourist satisfaction. For example, in the context of a municipal festival in Kirklareli City (Turkey), "staff", and "informational adequacy" did not generate any significant effects on overall tourist satisfaction (Anil, 2012). In the case of a carnival festival in Patras (Greece), "festival amenities" was the insignificant predictor of overall tourist satisfaction (Papadimitriou, 2013). In another study of the three factory sites in Taiwan (Lee, 2015), the outcomes of regression analyses showed that tourist satisfaction with destination attributes significantly affected their overall satisfaction; yet, among the seven factors of attribute satisfaction, only one (provision of safety and emergency systems) had a significant effect. In summary, the perceptions/evaluations of destination attributes are important with the formation of overall tourist satisfaction. However, some components/attributes may have more contributions than others. The importance of each component/attribute varies across different types of destination (Anil, 2012; Lee, 2015; Papadimitriou, 2013), and probably

across different types of tourist (Kim, Holland, and Han, 2013).

### **Conclusion**

The outcomes of the meta-analyses have confirmed that tourists' perceptions/evaluations (e.g., image, quality, satisfaction) of destination attributes are the significant and positive antecedents of their overall satisfactions. However, three issues should be taken into account when interpreting this correlation. First, not all of the components of the attribute-based constructs can have significant effects on overall tourist satisfaction. Some components are more important than others when contributing to the formation of overall tourist satisfaction. Second, the unfavourable attributes of a destination may have some negative influences on tourist satisfaction. This, nevertheless, does not contradict the overall positive association between tourists' perceptions/ evaluations of destination attributes and their overall satisfactions. Third, the attribute-based constructs represent the external/common antecedents of overall tourist satisfaction. Thus, their predicting power may be eliminated when controlled by other internal/personal forces, such as personal values.

### **Practical implications**

Destination attributes are multi-dimensionally arranged (cognitive – affective, holistic – specific, core – peripheral) (Echtner & Ritchie, 2003; Lai & Li, 2012). They are also perceived and evaluated from a variety of perspectives, for example, as the destination images, the quality criteria, and the satisfaction indicators. From any of the abovementioned approaches, perception/evaluation of destination attributes is always an important antecedent of overall tourist satisfaction. Thus, to make tourists satisfied, destination managers should take care of both the beauty (external appearances), and the quality (internal conditions) of their destination's attributes. Interestingly, these two dimensions are inter-correlated (Bouranta, Chitiris, & Paravantis, 2009; Mugge & Schoormans, 2012). A fresh and appealing look is the indicator of a good quality, and the good quality helps increase the favourability of an attribute in particular and of a product in general. On the one hand, the external appearances of the

attributes may be changed to renew and/or diversify the attractiveness of a destination. On the other, the internal conditions of such attributes must be maintained or improved in the long term to guarantee the stability and reliability of products' and services' quality.

However, as suggested by the empirical evidence, not all dimensions/attributes of destination image/quality/satisfaction can affect overall tourist satisfaction. The importance of each dimension/attribute may vary across destinations and tourist types (Anil, 2012; Kim, Holland, and Han, 2013; Lee, 2015; Papadimitriou, 2013). Therefore, a regular investigation of tourists' perceptions/evaluations will help destination managers manage the existing attributes in a more proper and effective manner. As the resources for the maintenance and development of tourist attractions are limited, a regular investigation will help show the destination managers the exact components/attributes that need their attention and focus in a given period.

### ***Theoretical implications***

Meta-analysis is a post-hoc practice which tourism researchers borrow from other fields such as biology (Rosenberg, 2005). While biology researchers can apply an a priori approach to design and operationalize previous studies for a later combined analysis, tourism researchers must rely on what had already been done. Therefore, meta-analysis in tourism is not simply the search for and aggregation of previous studies' results; it requires a careful selection of studies that can be combined to enable a reliable analysis. Meta-analysis, thus, can help reveal the inconsistencies and inaccuracies within previous studies; consequently, it can be a helpful tool for the collection of citable references.

In addition, researchers in tourism should follow what Dolnicar, Coltman, and Sharma (2015) recommended regarding the design and report of their studies. Specifically, all the constructs should be clearly defined and structured, and all the measures of a construct should correspond with its conceptualization. Later on, all the measures and their scales should be reported, together with the coefficient values of all the correlations under investigation. It is a common

practice that many researchers did not report the coefficients of the insignificant correlations. This poses difficulties for the post-hoc combination of the findings, and reduces the possibilities of comparison among studies which are put in the same context or employ the similar measures.

### **Limitations and future directions**

Although this study has made an extensive effort to clean the data and diversify the analysis, it could not avoid some common limits of a meta-analysis. As Zhang, Fu, Cai, and Lu (2014) noted, not all previous studies on the relationship between the attribute-based constructs and overall tourist satisfaction could be collected due to the limited access of databases, and the list of journals. The results of previous studies, which were treated as the data in a meta-analysis, could only be adopted without any cross-checking or cross-validation. External bias or incorrectness (e.g., differences in scales; Dolnicar, Coltman, and Sharma, 2015), if there are any, could not be avoided. Moreover, many contextual characteristics of the previous studies were not considered in the analysis, for example, the other constructs measured in the same model which can affect and alter the actual effect of the correlation between perception/ evaluation of destination attributes and overall tourist satisfaction. Furthermore, since this study was conducted by only one researcher, some internal biases in collecting, cleaning and analysing the results of previous studies may have occurred. However, these processes were implemented and repeated in different times with the inputs of many external comments of meta-analysis and tourism researchers. In addition, the fail-safe numbers (i.e., the results of the publication bias analyses) indicated that only the absence of a very large number of studies (even larger than the initial collection of papers,  $n = 135$ ) could invalidate the outcomes of these meta-analyses.

Considering the outcomes and limitations of this undertaking, some directions for future study can be proposed as follows. First, it can be realized from the categorization of the studies on destination attributes (Table 1) that the majority defined the issues from the approach of destination image, destination quality, and destination attribute satisfaction research. Thus, there is ample room for researchers to employ

destination attributes when investigating destination pull motivation and/or value, and experiences at destinations. In addition, more research should be done to address the unfavourable attributes of a destination, which are under-investigated in the existing literature. Second, since a variety of constructs/variables can be measured on destination attributes, it is interesting to combine some of them in the same model, and test the importance of each construct/variable with overall tourist satisfaction, and future tourist behaviours. In the same manner, the comparative significance that the internal/personal (push motivation, personal value), and the external/common (destination attributes) forces can have on overall tourist satisfaction and future tourist behaviours may be retested and confirmed. Third, when simultaneously measuring attribute satisfaction and overall satisfaction, researchers have consistently adopted a single-item scale to capture the latter variable. Thus, future studies may consider developing and using a multiple-item scale of overall satisfaction in this particular line of research. Fourth, it is observed from the two cases of destination image and destination quality (Table 2) that the combined effect when overall satisfaction was measured on a multiple-scale is twice as large when it was measured on a single-item scale. Future studies may retest these two scales to further understand their validity and effectiveness.

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## Appendix 1. Profiles of the 34 papers

Author(s)	Journal	Type of destination	Context	Origin of sample	Label of the attribute-based construct(s)	Type of attribute measures	Scale of attribute measures	Type of satisfaction measures	Scale of satisfaction measures
Anil (2012)	Tourism	Festival site	Turkey	Domestic	Festivalscape	CA	5 points, disagree - agree	MS	5 points, disagree - agree
Chen, Lee, Chen, and Huang (2011)	International Journal of Tourism Research	Park	Taiwan	Domestic	Quality	CA	5 points, dissatisfied - satisfied	OS	5 points, dissatisfied - satisfied
Chen and Tsai (2007)	Tourism Management	Large scale destination	Taiwan	Domestic	Image Quality	MA	5 points, disagree - agree	OS	5 points, disagree - agree
Chi and Qu (2008)	Tourism Management	Large scale destination	America	Domestic International	Image Satisfaction	CA	7 points, disagree - agree, dissatisfied - satisfied	OS	7 points, dissatisfied - satisfied
Correia, Kozak, and Ferradeira (2013)	International Journal of Culture, Tourism and Hospitality Research	Large scale destination	Portugal	International	Satisfaction	CA	5 points, worse - better than expected	OS	5 points, dissatisfied - satisfied
Craggs and Scho?eld (2011)	International Journal of Tourism Research	Industrial site	England	Domestic International	Image	MA	5 points, disagree - agree	OS	5 points, dissatisfied - satisfied
Eusébio and Vieira (2013)	International Journal of Tourism Research	Large scale destination	Portugal	Domestic International	Satisfaction	CA	5 points, bad - good	OS	5 points, dissatisfied - satisfied
Fallon and Schofield (2004)	Journal of Quality Assurance in Hospitality & Tourism	Large scale destination	America	International	Performance	CA	7 points, poor - good	OS	Not provided
Jin, Lee, and Lee (2015)	International Journal of Tourism Research	Park	South Korea	Domestic	Image Experience	MA	7 points, disagree - agree	MS	7 points, disagree - agree
Kim (2012)	Journal of Travel & Tourism Marketing	Park	South Korea	International	Experience	MA	5 points, disagree - agree	OS	Not provided
Kim, Holland, and Han (2013)	International Journal of Tourism Research	Large scale destination	America	Domestic International	Image	MA	7 points, disagree - agree	MS	7 points, disagree - agree
Kozak and Rimmington (2000)	Journal of Travel Research	Large scale destination	Spain	International	Satisfaction	CA	7 points, terrible - delighted	OS	7 points, terrible - delighted



Lee (2015)	<b>International Journal of Culture, Tourism and Hospitality Research</b>	<b>Industrial site</b>	<b>Taiwan</b>	<b>Domestic</b>	<b>Satisfaction</b>	<b>CA</b>	<b>5 points, dissatisfied - satisfied</b>	<b>OS</b>	<b>5 points, dissatisfied - satisfied</b>
Li, Pearce, Morrison, and Wu (2016)	International Journal of Tourism Research	Large scale destination	China	International	Smoke	CA	7 points, disagree - agree	MS	Not provided
Liu, Li, and Kim (2017)	Tourism and Hospitality Research	Large scale destination	China	Domestic	Image	MA	7 points, disagree - agree	MS	7 points
Liu, Li, and Yang (2015)	Journal of Vacation Marketing	Large scale destination	China	Domestic	Image	MA	7 points, disagree - agree	MS	5 points
McDowall and Ma (2010)	Journal of Quality Assurance in Hospitality & Tourism	Large scale destination	Thailand	Domestic International	Performance	CA	5 points, dissatisfied - satisfied	OS	5 points, dissatisfied - satisfied
Mohamad, Lo, Songan, and Wee (2010)	e-Review of Tourism Research	Large scale destination	Malaysia	Domestic International	Quality	CA	5 points, dissatisfied - satisfied	OS	5 points, dissatisfied - satisfied
Palau-Saumell, Forgas-Coll, Amaya-Molinar, and Sánchez-García (2016)	Journal of Travel & Tourism Marketing	Large scale destination	Spain Mexico	Domestic International	Image	MA	5 points, disagree - agree	MS	5 points, disagree - agree
Papadimitriou (2013)	Journal of Convention & Event Tourism	Festival site	Greece	Domestic	Quality	CA	10 points, disagree - agree	MS	10 points, dissatisfied - satisfied
Park and Njite (2010)	Asia Pacific Journal of Tourism Research	Large scale destination	South Korea	Domestic	Image	MA	7 points, disagree - agree	OS	7 points, dissatisfied - satisfied
Prayag (2009)	Journal of Travel & Tourism Marketing	Large scale destination	Mauritius	International	Image	CI OA	7 points, dissatisfied - satisfied, unfavorable - favorable	OS	7 points, dissatisfied - satisfied
Prayag, Hosany, Muskat, and Del Chiappa (2017)	Journal of Travel Research	Large scale destination	Italy	Domestic	Image Emotion	CA AA	7 points, unfavorable - favorable, negative – positive, not at all - very much	MS	7 points, dissatisfied - satisfied, terrible - delighted

Correlation between tourists' perceptions/evaluations of destination attributes and their overall satisfactions: Observations of a meta-analysis.

Prayag & Ryan (2012)	<b>Journal of Travel Research</b>	<b>Large scale destination</b>	<b>Mauritius</b>	<b>International</b>	<b>Image</b>	<b>MA</b>	<b>7 points, dissatisfied - satisfied</b>	<b>OS</b>	<b>7 points, dissatisfied - satisfied</b>
Song, Su, and Li (2013)	Journal of Travel & Tourism Marketing	Large scale destination	China	Domestic	Image	CA	7 points, disagree - agree	MS	7 points, disagree - agree
Tang (2014)	Asia Pacific Journal of Tourism Research	Large scale destination	China	International	Image	MA	5 points	OS	5 points, dissatisfied - satisfied
Tasci and Boylu (2010)	International Journal of Tourism Research	Large scale destination	Turkey	International	Safety/security Hygiene/health	CA	7 points, dissatisfied - satisfied	MS	10 points, dissatisfied - satisfied
Tian-Cole, Crompton, and Wilson (2002)	Journal of Leisure Research	Park	America	Domestic	Quality	CA	7 points, disagree - agree	MS	7 points, unfavorable - favorable, dissatisfied - satisfied, displeased - pleased, negative - positive
Veasna, Wu, and Huang (2013)	Tourism Management	Large scale destination	Cambodia	International	Image	CA	7 points, disagree - agree	MS	7 points, disagree - agree
Wu and Ai (2016)	Tourism and Hospitality Research	Festival site	China	Domestic	Image Emotion	OA AA	7 points, disagree - agree	MS	7 points, disagree - agree
Wu, Li, and Li (2014)	Tourism and Hospitality Research	Park	Taiwan	Domestic	Image Value	MA	7 points, disagree - agree	MS	7 points, disagree - agree
Yoon and Uysal (2005)	Tourism Management	Large scale destination	Cyprus	Domestic	Pull motivation	CA	4 points, unimportant - important	MS	5 points, worse - better, not worth - worth; 4 points, dissatisfied - satisfied
Yuan, Wu, Zhang, Goh, and Stout (2007)	Journal of Hospitality & Leisure Marketing	Large scale destination	China	Domestic	Satisfaction	MA	5 points, disagree - agree	OS	5 points, disagree - agree
Žabkar, Brenèè, and Dmitroviæ (2010)	Tourism Management	Large scale destination	Slovenia	Domestic International	Quality	CA	5 points, disagree - agree	MS	5 points, disagree - agree

Note. CA = cognitive measures, AA = affective measures, MA = mixed measures, OA = overall measure, MS = multiple measures, OS = single measure