



Reciprocal effect of tourist destinations on the strength of national tourism brands



Glauber Eduardo de Oliveira Santos ^{a,*}, Janaina de Moura Engracia Giraldi ^b

^a School of Arts, Sciences and Humanities, University of São Paulo, R. Arlindo Bettio, 1000, São Paulo, SP 03828-000, Brazil

^b School of Economics, Business Administration and Accounting at Ribeirão Preto, University of São Paulo, Av. Bandeirantes, 3900, Ribeirão Preto, SP 14040-905, Brazil

HIGHLIGHTS

- The study conducts an experiment about the reciprocal effect in the tourism context.
- Perceptions about tourist destinations affect the national tourism brand.
- The more attractive the destination, the stronger the national tourism brand.
- Previous knowledge about the country does not moderate the reciprocal effect.

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ABSTRACT

The assignment of a brand to a product affects consumer's perceptions not only about the product, but also about the brand itself. The reciprocal effect of the product on its brand can be either positive or negative. Extending the concept of reciprocal effect to a new context, this study analyzed how consumer's perceptions about tourist destinations can affect the national tourism brand. An experiment showed that destinations leading to attitudes that are more positive than the average can strengthen the national tourism brand, while destinations leading to attitudes below the average can weaken it. Brand dilution can happen even when the outcome is effective from the destination's perspective. Because of the reciprocal effect, the determination of public policies in the destination level is usually inefficient from the country's perspective. These results reinforce the need for national brand governance.

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1. Introduction

Brands enable products to be considered members of certain mental categories. As such, the properties of these members are judged not only directly, but also by means of inferences made from the characteristics of the category identified by the brand (Boush & Loken, 1991; Park, Milberg, & Lawson, 1991). Thus, the attitude toward a product identified by the brand is different from the attitude toward an unbranded product (Kapferer, 2008; Keller, 1993). However, assigning a brand to a product does not influence consumer's perceptions only regarding the product itself. The assignment of the brand can affect perceptions regarding the brand itself since the image of the brand is the combination of the image

of all known products that exhibit the brand's symbols. On a two-way relationship, the assignment of brand X to product Y affects consumer's perceptions about both product Y and brand X. The effect of the branded product on consumer's perceptions regarding the brand itself is known as reciprocal effect (Aaker & Keller, 1990). The reciprocal effect of a brand can be positive or negative. On the one hand, branded products can enhance the brand image, increasing its power to influence consumers positively (Kapferer, 2008; Keller & Aaker, 1992; Keller, 1993). However, branded products can also damage the brand, especially when they are associated with negative characteristics or when their images are inconsistent with the original image of the brand (Aaker, 1991; Farquhar, 1989; Keller, 1993).

Several empirical studies presented evidence of the existence and characteristics of the reciprocal effect of products upon their brands. Almost all studies in this field focused their analysis on consumer goods (e.g. Kim, Lavack, & Smith, 2001; Martinez &

* Corresponding author.

E-mail addresses: glauber.santos@usp.br (G.E.O. Santos), jgiraldi@usp.br (J.M.E. Giraldi).

Chernatony, 2004; Pina, Riley, & Lomax, 2013). A few studies addressed the reciprocal effect in the context of country brands by focusing on products of a specific geographical origin (Clifton, 2014; Magnusson, Krishnan, Westjohn, & Zdravkovic, 2014). The only studies on the reciprocal effect related to tourism issues were those developed by Lee and Lockshin (2012) and Campo and Alvarez (2014). However, it seems that no study addressed the reciprocal effect caused by the tourist destination on the national tourism brand.

In a certain perspective, destinations are simply products associated with the tourism brand of their countries. Nevertheless, the destination product is quite different from other products in several aspects. First, a destination is inseparable of its national tourism brand, while most other products could be branded differently than they actually are. Besides, the attribution of the national tourism brand to a destination is unintentional, whereas other products are frequently branded as a result of a managerial strategy. Finally, the destination product comprises a set of components that is larger and more complex than those sets of other products, including different services, places, people and other elements. Therefore, the transposition of concepts, theoretical propositions and empirical evidence about the reciprocal effect to the tourism context may bring out important new questions and conclusions.

Up until now, the reciprocal effect has been studied almost exclusively in the context of brand extensions. The reciprocal effect resulting from changes in objective characteristics or perceptions about a previously branded product has been poorly studied. Three noticeable exceptions are the studies of Lee and Lockshin (2012), Clifton (2014), and Magnusson et al. (2014). This sort of changes is particularly important for the reciprocal effect of the destination on the national tourism brand, since geographic compositions of countries are essentially constant over time. Therefore, the national tourism brand can hardly be extended to new destinations. Conversely, reciprocal effect on the national tourism brand is likely to happen due to consumer's perception shifts about destinations that always belonged to the country. This particularity of the national tourism brand, as compared to other types of brands, provides special interest for the study of reciprocal effects on the tourism context.

Applying the concept of reciprocal effect to the tourism context, the aim of this study is to analyze how the attitude toward the tourist destination affects the strength (i.e. competitiveness [Kapferer, 2008]) of the national tourism brand. This research is expected to be useful to support a number of decisions on the tourism management of destinations and countries. Understanding the reciprocal effect enables a more accurate assessment of costs and benefits of any tourism management strategy by taking into consideration its outcomes not only to the destination, but also to the national tourism brand and, consequently, to other destinations in the same country. Without this sort of consideration, estimates of net benefits arising from destination marketing can be biased from the national perspective. Hence, the reciprocal effect leads to a coordination problem for the national tourism brand administration.

In the following, the reciprocal effect is discussed briefly, first from a broad perspective, and then in the tourism context. In section four, theoretical propositions that attempt to explain this effect in the tourism context are presented. Some of these hypotheses are tested in an experiment reported in section four. Finally, conclusions, implications, and suggestions for future work are presented.

2. Reciprocal effect on brands

Several terms have been used in the literature to denote how the assignment of a brand to a product affects the brand, including *reciprocal effect* (Aaker & Keller, 1990; Lane & Jacobson, 1997; Park et al., 1991; Swaminathan, 2003), *spillover effect* (Knapp, Hennig-

Thurau, & Mathys, 2014; Magnusson et al., 2014; Simonin & Ruth, 1998; Sullivan, 1990), *reciprocal spillover effect* (Balachander & Ghose, 2003), *feedback effect* (Ahluwalia & Gürhan-Canli, 2000; Thorbjørnsen, 2005; Völckner, Sattler, & Kaufmann, 2008), *feedback spillover effect* (Pina et al., 2013) and *reversed effect* (Lee & Lockshin, 2012). Aaker and Keller (1990, p. 40) defined *reciprocal effect* as “the impact of the extension on the original brand”. Sullivan (1990, p. 309) explain that “spillovers occur when information about one product affects the demand for other products with the same brand name”. Ahluwalia and Gürhan-Canli (2000) used *feedback effects* to designate dilution or enhancement of the brand family caused by the branded product. In the present study, the oldest and apparently prevalent term *reciprocal effect* was preferred. *Reciprocal* indicates that the effect of the product on the brand is the counterpart of the usual effect of the brand on the product. Fig. 1 provides a simple and representative graphical definition of the reciprocal effect.

In theoretical terms, the reciprocal effect can be explained from the perspective of brands as signs that enable product categorization (Bless & Greifeneder, 2009; Erdem & Swait, 1998; Gnoth, 2007; Kapferer, 2008; Tsao, Berthon, Pitt, & Parent, 2011). The theory of categorization (Rosch, 1983) explain that the characteristics of the members of a category are summarized by its prototype. Hence, the image of the brand corresponds to the image of the prototype of the category of branded products. According the theory, the definition of prototype features departs from some measure of central tendency of the characteristics of all known members of the category (Barsalou, 1985; Rosch, 1983; Smith, Osherson, Rips, & Keane, 1988).

Inferences about characteristics of members of the category are derived from the characteristics of the prototype (Erdem & Swait, 1998; Kapferer, 2008; Tsao et al., 2011). Making inferences from symbols that enable product categorization is the core mechanism of the brand effect. On the other hand, perception shifts about an object can reshape its category's prototype. Therefore, the reciprocal effect on brands can be explained as a particular case of the inductive process of prototype formation. When there is a shift in the perception about a branded product, the image of the brand prototype is adjusted, leading to distinct inferences about other branded products.

Although the study by Romeo (1991) was not successful in verifying the occurrence of the reciprocal effect, most studies since Keller and Aaker (1992) were able to identify such effect. Different studies have shown that low quality brand extensions have a negative reciprocal effect on the strength of the brand (Gürhan-Canli & Maheswaran, 1998; Kim et al., 2001; Lane & Jacobson, 1997; Milberg, Park, & McCarthy, 1997; Völckner et al., 2008). Reciprocal effects can reach not only the brand as a whole, but also each of its assets individually. In this regard, Morrin (1999) found that brand awareness is magnified by consumer exposure to advertising of the brand extension. Loken and John (1993) and John, Loken, and Joiner (1998) showed that negative information about specific features of the brand extension can undermine specific aspects of brand image. Keller and Aaker (1992) and Dacin and Smith (1994) indicated that brand extension increases the likelihood of success of subsequent extensions. Discrepancies between

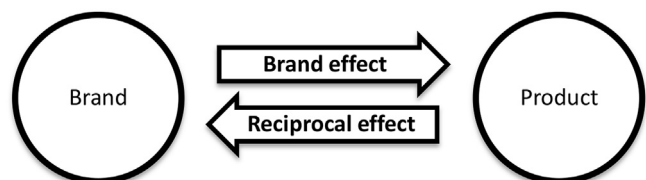


Fig. 1. Brand effect and reciprocal effect.

brand and extension images can lead to brand image revision. Consequently, the boundaries of the brand image can expand in order to accommodate the differentiated product. By diversifying the set of brand associations, the dissimilar brand extension increases uncertainty about the characteristics of other branded products and weakens the brand (Keller & Aaker, 1992; Knapp et al., 2014; Magnusson et al., 2014; Milberg et al., 1997; Park, McCarthy, & Milberg, 1993; Pina et al., 2013; Völckner et al., 2008). The similarity between brand and extension images also performs a moderating role so that the effect of the lower quality extension on the brand strength is smaller for dissimilar brand extensions than for similar extensions (Kim et al., 2001; Knapp et al., 2014; Swaminathan, 2003). Various additional aspects influence the intensity of the reciprocal effect, including the perceived quality of the brand (Keller & Aaker, 1992), consumer familiarity with the brand (Martinez & Chernatony, 2004; Sheinin, 2000), naming strategies (Milberg et al., 1997; Park et al., 1993), brand features (Kim et al., 2001; Pina et al., 2013) and consumer characteristics (Ahluwalia & Gürhan-Canli, 2000; Gürhan-Canli & Maheswaran, 1998; Lane & Jacobson, 1997).

3. Reciprocal effect on country brands

Although brands were originally used to distinguish agricultural and industrial goods of a certain source (Batey, 2008; Kapferer, 2008), this notion has been widely employed to countries at least since the 1990s (Papadopoulos & Heslop, 2002; Papadopoulos, 2004). The mere name of a country constitutes a brand (Gartner, 2009), although several other symbols can help identify products associated with a particular country (Gnoth, 2007). The national brand distinguishes several sorts of products associated with the country, including tourism services and destinations (Anholt, 2003). All regions, cities and sites of a country, just like a usual product, are inevitably associated with the national tourism brand.

The reciprocal effect on the national brand has received little attention in the scientific literature. Some basic elements of this analysis are found in the work of Han (1990), who affirmed that some parts of the image of a product can be extended to other products of the same country. The author defended this idea by showing the existence of correlation between beliefs about different products of the same country.

A rigorous empirical prove of the reciprocal effect on the national brand was provided by Magnusson et al. (2014), who examined the reciprocal effect caused by car and beer brands. By using experiments, the authors showed that national brands can be affected by negative information about goods produced in their territories. They also found that less prototypical products affect only national brands with respect to the same category of products, while the reciprocal effect of more prototypical products reach out other categories of products as well. Evidence of the reciprocal effect on the national brand and the role of national prototypicality of the product was also provided by Clifton (2014).

Lee and Lockshin (2012) examined the reciprocal effect of physical products on the national tourism brand. Their first study was an experiment showing that consumers with more positive beliefs about goods produced in a country make judgments that are more positive about the country as a tourist destination. The second study was a quasi-experiment that led to the conclusion that the relationship between beliefs about national goods and the attitude toward the country as a tourist destination is moderated by the familiarity with the country, so that the effect is greater for individuals who are less familiar with it.

While previous studies analyzed the reciprocal effect caused by consumer goods, Campo and Alvarez (2014) were pioneers in analyzing the reciprocal effect caused by the tourism product. The

target of the reciprocal effect in this analysis was the image of the overall national brand of Israel. A quasi-experimental study using tourist brochures was carried out with Spanish and Turkish university students. A direct effect of the national tourism product on the image of the overall national brand was evidenced. The authors also provided evidence that consumers with lower knowledge about the country are more inclined to give rise to the reciprocal effect.

Some relevant lessons can be learned from these previous studies. First, the reciprocal effect happens not only in the context of usual brands, but also in the national brand context. Second, the national brand is negatively affected by poor quality products, and positively affected by high quality products. Third, products of one type can influence perceptions of products of another type through their effect on the national brand.

Despite the existence of some evidence of the reciprocal effect in the tourism context, some links are still missing. The reciprocal effect on the national tourism brand was studied by Lee and Lockshin (2012) as a consequence of the quality of goods, not the tourism product. From the national tourism management perspective, studying the tourism product as cause of the reciprocal effect internalizes the issue, allowing managers to focus on more readily solvable problems. On the other hand, the reciprocal effect caused by the tourism product was analyzed by Campo and Alvarez (2014) with respect to the overall national tourism. In this case, the consequence is of little interest for national tourism managers. In sum, no previous study joined the tourism product as cause and the national tourism brand as consequence. This analysis is carried out next.

4. Theoretical model and hypotheses

The set of theoretical concepts and empirical evidence discussed in the previous sections was used as the basis for the development of a theoretical model explaining the reciprocal effect of the attitude toward the tourist destination on the strength the national tourism brand. The term attitude here means simply an evaluative judgment (Ajzen, 2001). Using the terminology proposed by Kapferer (2008), the strength of the national tourism brand can be understood as the additional positive attitude toward the branded destination as compared to the attitude toward the non-branded destination.

The reciprocal effect in this context can be defined as the influence of the attitude toward the destination (v) on the strength of the national tourism brand (M). From the perspective of brands as symbols that enable product categorization (Bless & Greifeneder, 2009; Erdem & Swait, 1998; Gnoth, 2007; Kapferer, 2008; Tsao et al., 2011), it follows that the image of the national tourism brand correspond to the image of the national tourist destination prototype. Since prototypes represent the average characteristics of all members of the category (Barsalou, 1985; Rosch, 1983; Smith et al., 1988), the strength of the national tourism brand can be estimated by the mean attitude toward all known destinations located in its territory, as represented in the following equation.

$$M = \alpha_0 + \alpha_1 \frac{\sum v_k}{K} + u \quad (1)$$

where M stands for the strength of the national tourism brand, v is the attitude toward a tourist destination, α are parameters, k is the destination index and K is the number of known destinations in the country. Since it is not assumed that the strength of the national tourism brand is determined solely by the attitudes toward its component destinations, the function includes a constant (α_0) and an error term (u).

The averaging nature of the prototype implies that the strength of the brand is expected to be positively associated with the attitudes toward all known branded products (John et al., 1998; Kim et al., 2001; Lane & Jacobson, 1997; Lee & Lockshin, 2012; Loken & John, 1993; Milberg et al., 1997). The first hypothesis of the present study is that this relationship also applies to the tourism context. Mathematically, this hypothesis is represented in equation (1) by $\alpha_1 > 0$.

H1: The strength of the national tourism brand is positively influenced by the attitudes toward its tourist destinations.

In theoretical terms, H1 means that an improvement in the attitude toward a tourist destination displaces the national prototype toward the positive pole of the perceptual space. Contrariwise, a decrease in the attitude toward a destination affects the national prototype negatively. When a previously unnoted destination become known, the outcome can be brand strengthening if the attitude toward the destination is more positive than the attitude toward the national destination prototype. However, if the newly known destination is perceived as less attractive than the average, the national tourism brand can be damaged.

The process of prototype formation as synthesis of all information about members of the category implies that the effect of additional information is decreasing with respect to the amount of previous information. This happens because the mean becomes less sensible to new values as the amount of previous values increase. Hence, from the first hypothesis it follows that the effect of additional information about destinations tends to be limited when the amount of previous information already assimilated by the individual is larger. In other words, the higher the degree of knowledge of the individual about the country, the lower the reciprocal effect. This theoretical proposition is consistent with the findings of Lee and Lockshin (2012) and it constitutes the second hypothesis of the present research.

H2: The effect of the attitudes toward tourist destinations on the strength of the national tourism brand is negatively influenced by the individual's level of knowledge about the tourism characteristics of the country.

In mathematical terms, this hypothesis states that the effect of the individual's level of knowledge about tourism in the country (r) moderates the relationship between two other variables (v and M). To avoid bias in the estimation of this effect, the variable r is included twice in the model following from equation (1) and presented in equation (2). H2 can be mathematically defined as $\alpha_3 < 0$.

$$M = \alpha_0 + \alpha_1 \frac{\sum v_k}{K} + \alpha_2 r + \alpha_3 r \frac{\sum v_k}{K} + u \quad (2)$$

5. Experimental design

The proposed hypotheses were tested by means of an experiment conducted with subjects recruited with help of *Amazon Mechanical Turk* (MTurk). This commercial tool was created as an online labor market, allowing people to hire anonymous workers from all over the world to carry out human intelligence tasks. MTurk has been widely used for the recruitment of subjects to scientific experiments. In fact, the system has a number of advantages when used for this purpose, including easy access to a wide, stable, and diverse subject pool, low cost, and agility (Mason & Suri, 2012). Several researches have shown that data collected through MTurk are just as good as those obtained in laboratories (Buhrmester, Kwang, & Gosling, 2011; Goodman, Cryder, & Cheema, 2013; Horton, Rand, & Zeckhauser, 2011; Paolacci, Chandler, & Ipeirotis, 2010; Suri & Watts, 2011).

The experiment was created as a task in MTurk, offering a small amount of money to individuals willing to participate. Each subject of the experiment received \$0.10 and took an average of 2 min and 33 s to complete the assignment. It is important to underline that Mason and Suri (2012) showed that the amount paid for MTurk experiment participants is expected to have no effect on the quality of answers. Only individuals from the United States were able to participate in the experiment. The country of residence restriction was implemented through an MTurk filter, which is based not only on respondents' self-declarations, but also on payment restrictions. The choice of a single country for subjects aimed to avoid problems arising from cultural and idiomatic differences. Besides, experimental social research is usually not very concerned in justifying the choice of a particular social group since representativeness is frequently not an issue. This is the case of the present study inasmuch as observing the reciprocal effect in any social group would suffice to prove its existence. There was a particularly high interest in subjects from the United States due to the fact that the country is the second largest consumer market for international tourism in the world (UNWTO, 2015), also ranking second for inbound tourism in Brazil (Ministério do Turismo, 2015). Data from a final sample of 363 individuals was analyzed.

The experiment design was divided into five parts, namely:

- I Introductory questions
- II Presentation and evaluation of Brazilian tourist destinations
- III Fictitious tourist destination selection
- IV Final questions about Brazil
- V Personal information

The initial questions aimed to increase subjects' attention and to introduce the tourism theme, a strategy suggested by Goodman et al. (2013) for research done using MTurk. The questions of this part addressed travel experiences and preferences of the subjects in a broad tourism context.

At part II, eight experimental groups were created for the presentation of stimuli illustrating Brazilian tourist destinations. A map and eighteen photographs were used to describe each destination. The map indicated the destination position in the world, while the set of photographs illustrated different aspects of it, such as tourist attractions, landscapes and social facts.

Experimental groups differed with respect to the attractiveness, amount, and the order of destinations. The attractiveness of the destination was defined as the average attitude toward the location for the population under study, thus indicating the expected attitude of each participant of the experiment toward the destination. The stimuli were manipulated in order to establish two levels of attractiveness: low and high. The municipalities of Porto de Galinhas and Trancozo were selected to represent highly attractive destinations, while low attractiveness destinations were represented by Recife and Salvador. All selected destinations are located in the northeast coast of Brazil, and are strongly associated with sun and sea tourism. It should be noted that the attractiveness levels of the selected destinations are not necessarily true in an external context. These levels became effective in this experiment by means of intentional selection of images that highlight positive or negative aspects of each place. The highly attractive destinations were represented by images that referred mainly to positive aspects, while the low attractiveness destinations were represented by images recalling both positive and negative aspects. The use of some images with positive content to describe destinations of this latter set was justified by the need to offer credible stimuli to participants.

Some of the subjects were presented to a single destination, while others were presented to two destinations. This variation in the number of destinations used as stimuli aimed to test the

existence of a relationship between this variable and the strength of reciprocal effect. For participants who received stimuli illustrating a single destination, the identity of this destination was randomly selected. For example, the participant assigned to a single highly attractive destination experimental group, the selection between Porto de Galinhas and Trancoso was random. For subjects who received stimuli illustrating two destinations, their order was also random. Thus, by manipulating attractiveness levels (low or high), the number (one or two), and order of the destinations (Porto de Galinhas or Trancoso; Recife or Salvador), eight experimental groups were created. Each subject was randomly assigned to one of these eight groups. Therefore, the experiment can be classified as full factorial ($2 \times 2 \times 2$).

After the presentation of a destination, three questions requested its evaluation in the context of leisure trips. Each question asked for a slightly different judgment. The first regarded future trips in general, while the second referred specifically to the next trip, and the last concerned trips of friends and relatives of the subject. Answers were recorded on a sliding button that could be freely positioned in a continuous scale ranging from “not attractive at all” to “very attractive”. Values of this scale were recorded with an accuracy of one thousandth. These three questions aimed to increase the level of mental elaboration about the destination, as well as enabling manipulation checks.

At part III of the experiment, subjects had to choose between two fictitious tourist destinations for a leisure trip. One of the destinations was supposed to be located at the Brazilian northeast coast, next to previously presented destinations. The second destination was randomly selected from a list of three fictitious destinations supposedly located at the coasts of Costa Rica, South Africa and Indonesia. The only information offered about all fictitious destinations were maps showing their locations in the world and highlighting the names of their countries. No additional information about these destinations was available to the subject.

In the absence of specific information about each fictitious destination, the subjects had no other option but to make their choices between the two fictitious sites based exclusively on inferences made from the name of their countries. In other words, the choice of the fictitious destination can only be explained by the strength of the tourism brand of each respective country. For example, the choice between the Brazilian and the Indonesian destination could be based only on the strength of the tourism brands of Brazil and Indonesia insofar as there was no other information available to the subject about these specific destinations. It is important to stress that making choices based on the strength of the national tourism brand was not a mere instruction for subjects, but in fact an inevitable condition imposed by the experimental design.

The participants were not informed that the destinations were actually fictitious. The aim of this strategy was to increase the credibility of subjects' responses. The fictitious destinations were presented as if they were new in the tourism market and almost unknown to the general public. The set of instructions provided to subjects suggested that they would probably have very little knowledge about these places, but that this lack of information was part of the planned research conditions and should be maintained. Additionally, some of the most usual proper names of each country were given for these destinations in order to puzzle information search. Thus, even if any subject tried to find further information about these places, it is likely that he or she was finally overwhelmed by clueless information.

At part IV, the subjects answered three general questions about Brazil. The first question asked the subjects to evaluate Brazil as a tourist destination for future leisure trips. The extremes of the answer scale for this question were anchored at “not attractive at

all” and “very attractive”. This question was used as a partial and redundant indicator of the strength of Brazil's tourism brand. The second question assessed participants' level of knowledge about Brazil as a tourist destination in a scale ranging from “nothing at all” to “very much”. This question was used to estimate the moderating effect of prior knowledge about tourism characteristics of the country upon the reciprocal effect. The third question inquired whether the participant had been to Brazil and if so, whether one or more times. This question was used as an additional measure of participants' knowledge about Brazil. Results indicated that less than 4% of the subjects had previously been to Brazil.

Finally, at part V subjects answered a few questions about personal characteristics. The majority of the sample (61.2%) was female and the median age was 32. Three quarters of the sample (74.6%) attended to higher education.

6. Data analysis

The three evaluative questions of real Brazilian tourist destinations made at part II of the experiment were internally consistent, forming a scale of three items with a Cronbach Alpha reliability index of 0.944. The two low attractiveness destinations had lower average ratings than those obtained by highly attractive destinations. On a scale from 0 to 1, the average rating of the low attractiveness destinations was 0.33, while the highly attractive destinations reached an average rating of 0.76. The difference between these two values is statistically significant at the 0.001 level ($p < 0.001$), confirming the validity of the stimuli.

The average evaluation of Brazil as a tourist destination for future leisure trips was 0.63 on a scale from 0 (not attractive at all) to 1 (very attractive). The score was higher for those who received stimuli illustrating highly attractive destinations (0.78) than for those who were presented to low attractiveness destinations (0.50). The Brazilian fictitious destination was preferred over the destination in other country by 54% of the sample. This probability was higher for those in the high attractiveness experimental group (0.70) than for those in the low attractiveness group (0.39). These two analysis provide preliminary support for the reciprocal effect hypothesis. However, a consistent analysis require more sophisticated statistical tools.

The effect of the attitude toward the destinations upon the strength of Brazil's tourism brand can be consistently analyzed by the conditional probability of the selection of the Brazilian fictitious destination presented at part III of the experiment. Estimates of the determinants of this probability can be obtained from a suitable multivariate model adapted from equation (2). Following this line of reasoning, the strength of Brazil's tourism brand can be explained by the following equation.

$$B_i = b_i + u_{Bi} = \theta_0 + \theta_1 a_i + \theta_2 r_i + \theta_3 r_i a_i + \theta_4 d_i + u_{Bi} \quad (3)$$

where

- B: strength of Brazil's tourism brand
- b: estimated part of the strength of Brazil's tourism brand
- u: error term with mean 0 and standard deviation σ
- a: dummy variable that identifies experimental groups that received stimuli illustrating highly attractive destinations
- r: degree of prior knowledge about the tourism characteristics of Brazil
- d: dummy variable that identifies experimental groups that received stimuli illustrating two destinations
- θ : parameters to be estimated
- i: subjects' index

The reciprocal effect of attitudes toward destinations on the strength of Brazil's tourism brand is represented by the coefficient θ_1 . The direct effect of prior knowledge about Brazil is given by θ_2 , while θ_3 stands for the moderating effect of this variable upon the reciprocal effect. Variable d equals -1 for experimental groups with two destinations of low attractiveness, 1 for groups with two highly attractive destinations and 0 for one destination experimental groups. Thus, coefficient θ_4 points to the moderating effect of two destinations upon the reciprocal effect.

On the other hand, the strength of the tourism brand of the foreign country included in the choice set of part III of the experiment is simply given by

$$F_i = f_i + u_{Fi} = \delta_0 + \delta_1 Y_i + \delta_2 Z_i + u_{Fi} \quad (4)$$

where.

- F: strength of the foreign country tourism brand
- f: estimated part of the strength of the foreign country tourism brand
- u: error term with mean 0 and standard deviation σ
- y: dummy variable that identifies the fictitious destination located in Indonesia
- z: dummy variable that identifies the fictitious destination located in South Africa
- δ : parameters to be estimated
- i: subjects' index

The fictitious destination located in Costa Rica was adopted as the reference case for the dummy variables y and z . According to the choice axiom of [Luce \(1959\)](#), the probability (p) that individual i chooses the Brazilian fictitious destination instead of the foreign fictitious destination equals the probability that Brazil's tourism brand is stronger than the tourism brand of the foreign country, that is

$$p_i = p(B_i > F_i) = p(b_i + u_{Bi} > f_i + u_{Fi}) \quad (5)$$

Rearranging equation (3), it follows that

$$p_i = p(u_{Fi} < u_{Bi} + b_i^* - f_i^*) \quad (6)$$

where

$$b_i^* = b_i - f_i = \theta_0^* + \theta_1 a_i + \theta_2 r_i + \theta_3 r_i a_i + \theta_4 d_i + \theta_5 y_i + \theta_6 z_i \quad (7)$$

being that $f_i^* = 0$, $\theta_0^* = \theta_0 - \delta_0$, $\theta_5 = -\delta_1$ and $\theta_6 = -\delta_2$. Note that the value f_i^* is set to zero in order to achieve identification of the model, following the principle that “only differences in utility matter” ([Train, 2009](#), p. 19).

Under the assumption that the error term u follows a Gumbel distribution (Extreme Type 1), the probability of the selection of the Brazilian fictitious destination is given by the following logistic function:

$$p_i = \frac{e^{b_i^*}}{e^{b_i^*} + 1} \quad (8)$$

The maximum likelihood method was used to obtain estimates for the parameters of this binomial regression logistic model ([Hensher, Rose, & Greene, 2005](#); [Train, 2009](#)). The model was significant according to the likelihood ratio test ($p < 0.001$). The explanation power of the model according to the pseudo- R^2 statistic ([McFadden, 1974](#)) was 0.137. The model correctly predicted 67.2% of the choices made by the experiment subjects. Estimates of the logistic regression model are presented in [Table 1](#).

The estimated coefficient θ_1 is positive and significant at the 0.001

Table 1
Estimates of the logistic regression model.

Parameter	Estimate	Standard deviation	Marginal effect	P
θ_0^*	-1.992	0.353		0.000
θ_1	1.859	0.441	0.38	0.000
θ_2	0.00185	0.000579	0.38	0.001
θ_3	-0.00104	0.000807	-0.21	0.197
θ_4	0.0563	0.343	0.01	0.870
θ_5	1.017	0.289	0.21	0.000
θ_6	1.189	0.295	0.24	0.000

level. The average probability of choosing the Brazilian fictitious destination is 0.38 higher for individuals assigned to the highly attractive destinations experimental group. Therefore, H1 is supported by evidence. The results support the hypothesis that the strength of the national tourism brand is positively influenced by the attitude toward national tourist destinations. The more positive the attitude toward the destination, the stronger the national tourism brand. Conversely, destinations with low attractiveness can damage the national tourism brand. This result is consistent with the empirical scientific literature previously presented, as well as with the theoretical model developed in the preceding section of this article.

Although the estimated coefficient θ_3 is negative, its value is not significant even at the level of 0.1. Therefore, H2 is not supported. Although it is not possible to provide a final explanation for this unexpected result, it is viable to make some conjectures. Possible explanations are the great variability and the low intensity of the moderating effect exerted by the degree of knowledge of the subject about tourism characteristics of the country.

The positive and significant value of θ_2 at the level of 0.001 ($p < 0.001$) indicates that the greater the degree of knowledge of the individual about tourism characteristics of Brazil, the stronger Brazil's tourism brand. The average probability of choosing the Brazilian fictitious destination of an individual that knows “nothing at all” about Brazil is 0.38 lower than the probability of those who claim to know “very much” about the country.

As the θ_4 coefficient was not significant, the results showed that the number of destinations of the same type presented to participants does not have a significant influence upon the reciprocal effect. The positive values of the coefficients θ_5 and θ_6 indicate that among foreign tourism brands, Costa Rica is the strongest. The probability of choosing the fictitious Brazilian destination is 0.24 higher when the foreign destination is supposedly located in South Africa and 0.21 higher when it is in Indonesia. The difference between the Costa Rican brand and the other two foreign brands is statistically significant at the level of 0.001 ($p < 0.001$). The strength of the South African tourism brand was not statistically different from strength of the Indonesian tourism brand ($p > 0.1$).

7. Discussion

Managing national tourism brands is a very relevant and complex activity. The symbols that identify destinations of a specific country, distinguishing them from destinations in other countries, exert substantial influence on perceptions, judgments, attitudes, intentions and behaviors of travel consumers. Good management of the national tourism brand can lead to expansion of tourist demand for the country, allowing the nation to obtain higher benefits from inbound tourism. On the other hand, mismanagement can lead to missed opportunities, or even to actual reductions of the inbound tourism demand.

The complexity of managing national tourism brands arises from several factors, including the multiplicity of components of the national image. Brands of this type identify categories formed by

countless products, each of them assuming a distinct position in the cognitive and emotional networks of consumers' minds. The formation of the national tourism brand image is a complex process of definition of the prototype of a mental category by means of perception, memorization, organization and representation of information about the set of known national destinations. Similarly, the strength of the national tourism brand is formed by induction from the attitudes toward destinations located within the national territory. Therefore, new perceptions about any destination in the country can have relevant effects on the strength of the national tourism brand, affecting by extension the inbound tourism demand for all other national destinations. This reciprocal effect of destinations on the national tourism brand was the core of analysis in this study.

This article was a pioneer in studying the reciprocal effect of tourist destinations on the national tourism brand. Two propositions on the reciprocal effect were derived from a theoretical model built on the perspective of brands as symbols that enable categorization of products. These hypotheses were tested by analyzing data collected in an experiment. The results showed that the attitudes toward tourist destinations of a country have a direct effect on the strength of their national tourism brand. Therefore, the more positive the attitude toward the destination, the higher the strength of the country's tourism brand. This relationship stems from the fact that brand strength is given by the average attitudes toward all branded products. Additionally, the experiment results did not provide support to the hypothesis of a moderating effect of the degree of prior knowledge about the tourism characteristics of the country upon the reciprocal effect. Thus, no evidence was presented indicating that individuals who know better the country are less inclined to give rise to the reciprocal effect.

7.1. Theoretical and managerial implications

The empirical results obtained from this experiment have important theoretical and managerial implications. From a theoretical point of view, they provide indications that the reciprocal effect is intrinsic to the assignment of brands to any type of product, no matter the context. More specifically, they show that the reciprocal effect is not restricted to brands of goods and services, also occurring in the tourist destination context. Besides, results show that the reciprocal effect can be caused not only by newly branded products, but also by previously branded ones when new information becomes available.

In general, the results obtained offer support to the theoretical model developed to explain the reciprocal effect. This theoretical perspective, once corroborated by empirical data, offer a great contribution to the understanding of this effect. Understanding brands as symbols that enable categorization provides a broader view of the reciprocal effect, facilitating analytical and didactic organization of concepts and allowing a better explanation of facts. Above all, the theoretical model contributes to the development of predictions about the likely effects of different events and management strategies. From this theoretical model of brand management, and especially of national tourism brands, the expected results of different courses of action can be judged with a lower level of uncertainty. Consequently, decisions that are more efficient can be made.

The proposed theoretical model, jointly with the empirical results obtained, offers some specific recommendations for managers of national tourism brands. The first recommendation is to watch for the attractiveness of each destination in the country, since any of them can influence the tourism demand for all other national destinations through the reciprocal effect upon the national tourism brand. Information about a destination not only affects this very location, but also influences all other destinations in the country. If the information leads consumers to form more positive

judgments about the national tourism brand, other destinations in the country will benefit. On the other hand, if the outcome is a damage of the national tourism brand, the other destinations will be hurt.

Without the understanding of the reciprocal effect, any estimate of costs and benefits of any management strategy of either tourist destinations or countries could be misleading. Profitable strategies for the destination can be deleterious for the country as a whole. If the destination manager decides to implement the strategy, the national brand can be hurt and other destinations can suffer bad consequences. However, it is unlikely that the destination manager will consider other destinations' losses while making a judgment. Theoretically even successful advertising of a destination may have negative impact for the country if it results in greater salience of a place leading to attitudes lower than the average. Further empirical research is needed to confirm this possibility.

Moreover, individual strategies considered disadvantageous for the destination may actually have a positive balance for the country. This case would occur if the tourism brand of the country were sufficiently strengthened by the destination strategy. Therefore, the omission of the reciprocal effect in the analysis of tourism managers can lead to either wrong or sub-optimal decisions, be it by means of wasting good opportunities, or by adopting losing strategies.

Allowing destinations to be individually responsible for their images is not efficient from the national point of view. Some kind of national governance system that ensures collective interests regarding the country's image is needed. This governance structure should seek to prevent a destination from harming other destinations through their negative reciprocal effect on the national tourism brand. The promotion of new tourist destinations of a country should be parsimonious and avoid promoting destinations less attractive than the national average. The governance of the national tourism brand should also seek to encourage positive interactions among destinations, which can occur from strengthening the national tourism brand by destinations leading to highly positive attitudes. Focusing on the promotion of the country's best destinations strengthens the national tourism brand, indirectly benefiting other destinations of the country. The growth of tourism demand for the less attractive destinations is more effective from the national perspective when it is the result of the promotion of the most attractive destinations. This indirect way of demand increase may take place through multi-destination travel or additional visits to the country. Anyhow, this indirect route is the only one that allows demand growth for the less attractive destinations without harming the country as a whole.

The past and present of Brazilian tourism management illustrate both alternatives. In the past, only Brazilian highlights were promoted internationally. Inbound tourism increased considerably and some secondary destinations emerged from spillovers of the main ones. Over the last two decades, the set of internationally promoted destinations increased substantially. However, results are not supportive. Brazilian inbound tourism flow essentially did not increase since then and the newest national destinations are now decades old.

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Glauber Eduardo de Oliveira Santos is professor of tourism economics in the School of Arts, Science and Technology of the University of São Paulo (EACH-USP). Director of the International Academy for the Development of Tourism Research in Brazil. His research interests include tourism, economics and consumer behavior.



Janaina de Moura Engracia Giraldi is an Associate Professor of marketing and management in the School of Economics, Business Administration and Accounting at Ribeirão Preto of the University of São Paulo (FEAR-RP/USP). Her research interests include business management, marketing and consumer behavior.