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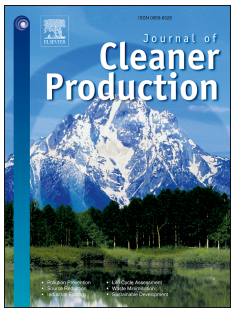

Fostering tourism destination competitiveness in developing countries: The role of sustainability

Gianluca Goffi, Marco Cucculelli, Lorenzo Masiero

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Fostering Tourism Destination Competitiveness in Developing Countries: The Role of Sustainability

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This study aims to test if sustainability influences tourism destination competitiveness in developing countries. The case study for the analysis is Brazil, where the enormous and unexploited potential for tourism makes sustainability a central issue in tourism development. Empirical results show that sustainability factors are positively associated with competitiveness indicators used as dependent variables in the regression model, thereby supporting the hypothesis that sustainability plays a key role in fostering tourism destination competitiveness. Tourism growth in developing countries has led to a number of environmental and socioeconomic problems. These results indicate that a new model of cleaner tourism that favorably affects economy, environment, and society is required. Some recommendations are provided based on empirical evidence to enable the developing countries to attain sustainable tourism development.

1. Introduction

Tourism is one of the main industries in the world. As a worldwide export category, tourism ranks third after fuels and chemicals, and is the top export sector in many developing countries (UNWTO, 2017). Tourism also plays an increasingly important role in the economic expansion because it is one of the main sources of foreign exchange and an essential component of export diversification. Previously excluded from the world's major tourism flows, the developing world has become the main growth area of tourism. The number of international overnight visitors in developing countries has more than doubled in the last 15 years and almost quadrupled in the last 25 years. Among the 1.235 billion international tourist arrivals in 2016, 550 million came from emerging economies (UNWTO, 2017), accounting for a market share of 45%, which is significantly higher than the 31% share recorded in 1990. UNWTO long-term forecasts predict that tourism destinations in developing economies will grow at double the rate of those in advanced economies.

Nevertheless, emerging economies accounted for only US$ 486 billion out of the US$ 1260 billion international tourism receipts. Moreover, the top ranks of the World Economic Forum (WEF) Travel and Tourism Competitiveness Index are regularly dominated by advanced countries[1], with emerging economies showing concerns related to environmental sustainability, human resources, job opportunities in tourism, and prioritization of tourism (WEF, 2017). Developing countries have not yet managed to fully exploit their tourism potential (Sanches-Pereira et al., 2017), and cleaner production concepts are still far from being incorporated into their tourism

[1] Despite the limitations of the index (Wu et al., 2012), it provides a starting point from which one can identify the main weaknesses of national tourism systems. Among all developing countries, only China is ranked in the first 20 positions, at the 15th place, whereas no developed nation is listed in the last 60 positions.

activities (Zhang, 2016). Tourism impacts in developing regions vary significantly according to the local political framework and stakeholders' involvement (Brown & Hall, 2008). Many studies on tourism sustainability in developing areas have focused either on community-based and pro-poor tourism, or discussed the positive/negative impacts of tourism on the environment (Shaalan, 2005), economic development (Pulido–Fernández et al., 2014), inequality (Alam & Paramati, 2016), income distribution (Incera & Fernández 2015), and poverty reduction (Blake et al., 2004). Although these topics warrant a thorough discussion, the crucial issue for the creation of a cleaner tourism model in developing countries is to demonstrate that sustainability can enhance tourism destination competitiveness (TDC). Sustainability is often perceived as a cost rather than an investment (Weeden, 2001): we cannot expect the tourism industry to turn to a cleaner model of production in developing countries if we do not demonstrate that sustainability has a key role in fostering TDC.

Cucculelli and Goffi (2016) demonstrated the role of sustainability as a crucial determinant of TDC in small and medium destinations of excellence in Italy. If this relationship is to be demonstrated in developing countries, then the adoption of a cleaner tourism model can eventually boost economic growth and poverty reduction. To test this hypothesis, primary quantitative data were collected by conducting an extensive survey among a large group of experts in two major Brazilian destinations, namely, Rio de Janeiro and Salvador de Bahia. Brazil, a developing country, is too large and heterogeneous to be considered in its entirety for an applied study on tourism. Therefore, the present study focuses on two major leisure destinations in Brazil, one is Salvador de Bahia in the country's less developed North and the other is Rio de Janeiro in the South. The North follows the classical pattern of less-developed economies, whereas the South, although facing serious poverty problems, is in a slightly better condition (Pegas, Weaver, & Castley, 2015).

Interviewed experts include tourism researchers, hotel and public managers, incoming travel agents, and travel consultants. From the survey, 511 usable responses were received (306 and 205 from Rio de Janeiro and Salvador de Bahia, respectively). We operationalized the conceptual approach by relating 62 attributes of competitiveness, which are important in defining tourism sustainability in developing countries, to 10 indicators of TDC used as dependent variables in the model. To obtain a smaller and uncorrelated set of independent variables, we performed principal component analysis (PCA) and applied the results in the subsequent regression analysis.

Brazil was selected as an applied case being a paradigmatic example for three reasons. First, tourism in Brazil faces various environmental and social concerns. The country ranks first in South America in terms of international tourist arrivals (6.3 million), first worldwide for natural attractions, and eighth for cultural attractions (according to the tourism competitiveness index, WEF, 2017), and 12th worldwide in terms of UNESCO World Heritage sites. However, among 136 countries worldwide, Brazil ranks 117th for the sustainable development of the tourism industry. Second, Brazil lacks tourism competitiveness and sustainability studies. According to Pegas et al. (2015, p. 763), "we were surprised by the lack of literature, in any language, on broader analyses of coastal tourism sustainability in Brazil." Third, the size of the country is continental: a shift toward

a more sustainable and competitive model of tourism development could significantly impact thousands of local destinations and millions of people.

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This paper is structured as follows. Section 2 sets the theoretical framework. Section 3 presents the case study. Section 4 describes the empirical analysis and methodology. Section 5 presents the main results. Section 6 provides a discussion.

2. Theoretical framework

2.1 Destination competitiveness and sustainable tourism development

TDC cannot be easily conceptualized because of the multiplicity of goals and the variety of destinations. Some destinations compete to enhance their economic development, whereas others diversify their economy or increase their market share. Therefore, several perspectives have been used to describe TDC. A first perspective is characterized by the idea that a destination should focus on creating value-added products to increase its market position (D'Harteserre, 2000). Another perspective highlights the relationships among TDC, local well-being, and the preservation of natural and sociocultural capital (Buhalis, 2000; Dwyer & Kim, 2003; Heath, 2002). Goffi and Cucculelli (2018) demonstrated the multidimensionality and relativity of the TDC concept. Ritchie and Crouch (2003, p. 2) provided the following comprehensive definition of TDC, which comprises both perspectives: "the ability to increase tourism expenditure, to increasingly attract visitors, while providing them with satisfying, memorable experiences and to do so in a profitable way, while enhancing the well-being of destination residents and preserving the natural capital of the destination for future generations."

The general conceptual model proposed by Crouch and Ritchie (1999) and refined by Ritchie and Crouch (2000) recognizes 36 elements of competitiveness, which are categorized into five main factors. The model distinguishes between comparative advantages that constitute the tourism resources available and the competitive advantages related to the ability of a destination to use tourism resources effectively over the long term. This model has stimulated the discussion of other conceptual models of TDC, including the well-known models proposed by Hassan (2000), Heath (2002), and Dwyer and Kim (2003). Hassan (2000) focused on environmental sustainability factors and identified four determinants of competitiveness, namely, demand orientation, comparative advantage, industry structure, and environmental commitment. Furthermore, Hassan (2000) stressed the importance of building partnerships among the private and public sectors, NGOs, and informal citizen groups. The integrated model proposed by Heath (2002) considered the various issues surrounding the concept of TDC displayed in the form of a house, which encompasses the competitiveness foundations, the key success drivers, the tourism "script" (strategic framework), the key building blocks (sustainable development and marketing strategy), and the competitiveness "cement" (research and monitoring). An evolution of the Ritchie and Crouch (2000) model is

developed by Dwyer and Kim (2003), whose model distinguishes between endowed and created resources and identifies "demand conditions" as crucial determinants of TDC.

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These models focused on how TDC can be improved to address the new challenges of market competition. However, only the model of Dwyer and Kim (2003) was empirically applied (see Dwyer et al., 2003). Other empirical studies aimed to evaluate the competitive position of one or more tourism destinations. Some authors, such as Gooroochurn and Sugiyarto (2005, a study on more than 200 countries), Mazanec et al. (2007, on 169 countries), Assaf and Josiassen (2012, on 129 countries), Assaker et al. (2013, on 154 countries), and Cvelbar et al. (2015, on 139 countries), use secondary data or objectively measured variables, examining the relationships between attributes of competitiveness and TDC through refined statistical techniques on large samples of countries worldwide. However, Crouch (2010) stated that the use of quantitative data could be confusing because many attributes cannot be quantified for their multidimensionality. Moreover, finding appropriate data for each attribute could be challenging due to the massive number of indicators required for the analysis. A second group of studies aimed to collect primary data through surveys on tourists or stakeholders and practitioners. TDC is measured using survey data on tourists' opinions and perceptions (Kozak & Rimmington, 1999; Bahar & Kozak, 2007; Cracolici & Nijkamp, 2008). However, tourists cannot determine the various factors that influence TDC, such as destination management, tourism planning, and conditioning factors (Enright & Newton, 2004). Thus, interviewing people who can answer questions on attractiveness and management issues, such as tourism stakeholders and practitioners, is important.

Among this part of TDC literature, the contribution can be divided into two main groups, namely, studies aimed at evaluating the competitive position of destinations (Dwyer et al., 2003; Enright & Newton, 2004; Omerzel Gomezelj & Mihalič, 2008; Dwyer et al., 2012; Dwyer et al., 2014) and studies that have generally investigated the relative performance of attributes (Dwyer et al., 2004; Enright & Newton, 2005; Crouch, 2010; Bornhorst, Ritchie & Sheehan, 2010; Caber et al., 2012). These studies do not focus on the relationships between the main competitive attributes and TDC. Moreover, the indicators included in these models do not provide an integrated treatment of the various issues encompassing the concept of sustainability. To fill the research gap, the current study proposes a model that has been first integrated with attributes of competitiveness. Many of the attributes refer to sustainability issues, and then are applied to test the relationship between sustainability factors and TDC in a developing country such as Brazil. Only by testing hypotheses, can we shed light on this important issue.

The publication of the World Commission on Environment and Development Report, known as the Bruntland Report (WCED, 1987), was the starting point of the sustainability debate in tourism. Three decades of debates have clarified that sustainability does not exclusively concern environmental issues but is composed of at least the environmental, social, and economic pillars (Swarbrooke, 1999). Sustainability is a complex and dynamic concept (Liu, 2003), a long-term goal (Hunter, 1995) that is site-specific and should be adjusted to each destination (Lee, 2001), and an adaptable notion according to different areas, destinations, and changing conditions over time

(Bramwell et al., 2016). Moreover, is now widely recognized that all types of tourism can aim to be sustainable (Tepelus, 2005). Large-scale tourism was intrinsically considered unsustainable (Krippendorf, 1987) and the polar opposite of sustainable tourism (Pearce, 1992). After an intensive discussion, it is now increasingly and extensively accepted that all forms of tourism can aim to be sustainable (Inskeep, 1991; Hunter & Green, 1995, Clarke, 1997). Budeanu (2005) suggested that sustainable tourism cannot be achieved if large-scale tourism practices are not adjusted to integrate sustainability.

Aguilò et al. (2005) proposed that sustainability may be a pulling factor for destination development and a tool to enhance quality of services. Pulido–Fernandez et al. (2015) demonstrated that investing in tourism sustainability does not affect a country's main economic tourism indicators in the short term, and does not constrain profitability and competitiveness.

Several authors have linked the notion of competitiveness with the concept of sustainability (Ritchie & Crouch, 2000; Hassan, 2000; Mihalic, 2000; Heath, 2002). Over the last 15 years, a considerable discussion on the relationship between tourism sustainability and competitiveness has occurred. Sustainability is a significant issue in the destination competitiveness literature, but existing studies are mostly theoretical rather than practical (Saarinen 2006). The first model that aimed to test the role of sustainability in TDC was that of Cucculelli and Goffi (2016); this model was applied to small tourism destinations in Italy, a developed country and one of the world's leading tourism destinations. The key question is to analyze if sustainability has a crucial role in explaining destination competitiveness in developing countries. Consequently, for the reasons explained in the next paragraph, the following hypothesis is proposed:

Hypothesis 1: In developing countries, a positive relationship exists between sustainability and tourism destination competitiveness.

2.2 The case of developing countries

The special volume "Sustainable tourism, progress, challenges and opportunities" of the Journal of Cleaner Production discusses the "potential of tourism to contribute to the transformative changes required to move to truly sustainable societies" (Budeanu et al., 2016, p. 285). This is a key question especially in developing countries. Cárdenas–García et al. (2014) showed that tourism improved the socioeconomic conditions of the population only in the most developed countries. Tosun and Jenkins (1998, p. 101) asserted that "contemporary planning approaches were developed by taking into account the socio-economic, political and human resources conditions in developed rather than in developing countries. Therefore, these planning approaches may not be transferable to and implementable in developing countries without considerable adaptations."

Developed economies no longer dominate the international tourism scene as the ever-increasing number of destinations in developing countries have opened up to tourism, thereby transforming this industry into a crucial driver of economic development in the latter. Tourism arrivals in

developing countries more than tripled from 1990 to 2016 and is expected to exceed the number in developed economies before 2020 and surpass the 1 billion mark by 2030 (UNWTO, 2017).

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Mihalic (2016) suggested that despite several decades of academic debate on tourism sustainability, its application in practice remains problematic. This finding is particularly evident in developing countries with the consequence of the degradation of the natural heritage (Shaalan, 2005). One of the main causes is that the relationship between sustainability and destination competitiveness has not been investigated in these contexts.

Many governments in developing countries encouraged large-scale capital-intensive tourism projects, with exclusive real estate and resort destinations, all-inclusive high-rise hotels, and condominiums built through foreign investments (Akama and Kieti, 2007). As stated by Tosun and Jenkins (1998), tourism started with an "unplanned tourism development era" during which activities were largely unplanned, followed by a "supply-oriented tourism planning period" concerned mainly with building hotels, restaurants, and physical infrastructures to meet the increase of tourism demand. Consequently, tourism was developed in most emerging world areas without an integrated plan and with almost no attention paid to environmental impact and local communities.

In these contexts, cleaner production strategies are fundamental because they could improve destination competitiveness with important socioeconomic repercussions. The majority of local residents in developing countries receives insignificant or no benefits from tourism development, and typically engages in marginal businesses such as street vending and other informal jobs (Akama & Kieti, 2007). Many developing countries adopted a model of resort-based tourism, where the cheap labor supply confirms the tendency of tourism to perpetuate structural and spatial inequalities (Weaver, 1988). The quickest and easiest approach for these countries to promote their tourism industry is to place tourism development in the hands of multinational companies, which are interested in short-term profits and consider sustainability as a secondary issue (Klemm and Parkinson, 2001). One of the main drivers for investing in developing countries has been low labor cost often associated with long working hours and insufficient protection of workers' rights. Therefore, tour operators in these countries tend to offer a tourism model described as "low price–high volumes–local exploitation" (Goffi et al., 2018, p. 181). Conversely, a highly sustainable tourism model can deliver net benefits to the poor and increase the employment opportunities for the most vulnerable group in society (Alam & Paramati, 2016).

Some limitations associated with tourism in developing countries include: high rates of foreign ownership, resulting in loss of control over local resources; considerable foreign leakage of tourism earnings; deficient integration with other domestic economic sectors; low multiplier effects due to tourism enclaves; unequal spatial distribution of development opportunities; fluctuating earnings due to seasonality and external factors (e.g., global economic recessions); environmental damage with loss of nonrenewable resources; growing alienation among the local population; conflicts over access to scarce resources; increasing crime rates; overcrowding; overloaded infrastructures; increasing prices of goods, services, and property; and loss of cultural identity (Brohman, 1996). Tourism governance, environmental and biodiversity conservation, assessment of tourism impacts,

value chain analysis, and intersectoral linkages are some of the areas of major concern in developing countries (Spenceley & Meyer, 2012).

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As shown by Shaalan (2005), the degradation of unique and pristine environments in many developing countries has resulted in depriving those destinations of their high competitive advantage. In response to increasing tourist concerns for unsustainable tourism development (Sigala, 2008), some tour operators have started to develop sustainable initiatives (Goffi et al., 2018). They recognize that even if tourists seldom demand "green products" explicitly, they tend to not return to unsustainable destinations (Miller, 2001). Tourists are becoming increasingly sophisticated in their selection of tourism destination, and a major factor that has been gaining importance in their preference is the environmental quality of the destinations (Yaw, 2005). The shift to a more sustainable tourism model has been reported not only in the case of coastal tourism in developed countries (Fortuny et al., 2008) but also in developing economies such as Indonesia (Law et al. 2016) and the Caribbean region (Yaw, 2005).

Policies for managing and promoting sustainable tourism could have a major impact on the competitiveness of these destinations. Ekanayake and Long (2012) claimed that tourism can be a driver of growth in developing countries. Pulido–Fernández et al. (2014) concluded that, in general, tourism development does not lead to the economic expansion of a developing country even though the intensity of this relationship differs across countries affected by various circumstances. This argument is in accordance with the views of Dwyer et al. (2004) and Rosentraub and Joo (2009) that under appropriate conditions, tourism growth can influence socioeconomic development. Political stability, supportive institutions, and decentralized structures are key issues to implement a sustainable tourism planning approach in developing countries (Tosun & Timothy, 2001). Only by addressing these issues can tourism contribute positively to the quality of life of people in these areas. Lee (2001) claimed that cleaner production can be viewed as the constant improvement of products and services to reduce the use of natural resources and minimize the risk to the human population and the environment. As a general approach based on the principle of "prevention," cleaner production has strong social and economic implications because most of the environmental effects also have social and economic impacts.

Butowski (2017) posited a hypothesis that he tested in five Polish destinations, that is, the sustainability of a tourism destination constitutes the synthetic measure of its tourism development. Pulido–Fernández et al. (2015) emphasized the importance of demonstrating how sustainable tourism can improve economic yield, increase wealth, reduce environmental risk, and generate prosperity. All these concepts are closely related to the destination competitiveness concept. Hence, the key issue is to demonstrate that sustainability can enhance destination competitiveness in developing countries, thorough testing the Hyp. 1. "Competitiveness is illusory without sustainability; to be competitive, a destination's tourism development must be sustainable, not just economically and ecologically, but socially, culturally, and politically as well" (Ritchie and Crouch, 2000, p. 5).

2.3 Model description

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The present model extends and adapts that of Cucculelli and Goffi (2016)[2] to a different context because no universal set of competitiveness indicators can be applied to all destinations at all times (Gomezelj and Mihalič, 2008). First Brazil, as opposed to Italy, is a developing country. Second, Italy is the fifth most visited destination worldwide by international travelers with more than 52 million arrivals, compared with the 6 million of Brazil. Third, the size of the destinations and the local contests of Rio de Janeiro and Salvador de Bahia are extremely different compared with those of small Italian municipalities. In this model, the following eight macro-attributes comprised 62 attributes:

(i) main attractors,
(ii) tourism services,
(iii) general infrastructure,
(iv) supporting factors,
(v) general conditions,
(vi) tourism policy and planning,
(vii) destination management, and
(viii) demand factors.

The macro-attributes, namely, the "main attractors" and "tourism services" transfer the value directly to the tourist, whereas the other macro-attributes support or condition their performances. This concept is based on the "value fan" configuration by Flagestad and Hope (2001), taking the "value chain" model of Porter (1980) as a reference.

"Main attractors" and "tourism services" are the central motivators for visiting a tourism destination. They transfer the value directly to tourists and, furthermore, six macro-attributes support their performances. Behind them, there is a complex system of prerequisites for destination competitiveness such as "tourism policy and planning" that encompasses strategies for the long-term development, "destination management" that manages its components in the short term, "supporting factors" that can restrain or amplify destination competitiveness, and "general infrastructures" that provide the foundations upon which a competitive tourism destination can be built.

The macro-attributes "main attractors," "tourism policy and planning," "destination management," and "supporting factors" are derived from the Ritchie and Crouch (2000) model. Different from the Richie and Crouch model, the macro-attributes "tourism services" and "general infrastructures" are considered separate factors in line with the work of Gunn and Var (2002). Moreover, the present model explicitly recognizes the "demand factors" as an important macro-attribute, as in the study by Dwyer and Kim (2003). A new determinant has been introduced, namely, "general conditions," which are forces in the wider environment that can define the limit or influence the potential of destination competitiveness, including banking and financial system,

[2] For a detailed explanation of each macro-attribute, see Goffi (2013) and Goffi & Cucculelli (2014).

overall economic condition, entrepreneurship, exchange rate, political stability, safety, environmental quality, overall cleanliness of the destination, cleanliness of government, and modern and transparent public administration.

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After establishing the eight macro-attributes, the model identifies a set of attributes for each of them, following the Dwyer and Kim (2003) approach. Table A.1 in the Appendix reports the entire list of 62 attributes. These attributes are useful to analyze TDC in a developing country. Compared with the Cucculelli and Goffi (2016) model, 9 out of 62 attributes are new. The original attributes are shown in the regular typeface in Table A.2 in the Appendix (which reports the attributes in each factor after the PCA); new attributes appear in *italics*.

The dependent variables of the model are 10 indicators concerning the tourism outcomes. The proposed model aims to determine the role of the 62 attributes in explaining the 10 indicators of TDC. A further difference with the Cucculelli and Goffi (2016) model is in the selection of the dependent variables, which has been adapted to the context of a developing country such as Brazil. Müller (1994) claimed that a competitive destination must pursue four main aims, namely, maximize visitor satisfaction, improve the subjective well-being of the local residents, preserve the local environment, and optimize sociocultural impacts. For this reason, Cucculelli and Goffi (2016) measured TDC using four indicators, three of which were unchanged in this model (I1–I2–I3), whereas the fourth indicator (formerly I.4 "tourism has resulted in positive economic impacts") is crucial in developing countries and is "exploded" into the following seven new indicators (I.4–I.10) that are useful to measure the economic impact of tourism in a developing country such as Brazil:

I.1 tourists are satisfied with their holiday experience,

I.2 tourism has resulted in positive environmental impacts,

I.3 tourism has resulted in positive social impacts,

I.4 tourism has increased local well-being,

I.5 tourism has improved poorest standards of living,

I.6 tourism has created formal employment opportunities,

I.7 tourism has fostered local economic growth,

I.8 tourism has benefitted local businesses,

I.9 tourism has attracted investments, and

I.10 tourism has improved local services.

Measuring TDC in developing countries should deal with aspects that have been overlooked in the previous research. Buhalis (2000) and Hassan (2000) highlighted the relationship between competitiveness and economic prosperity and the delivery of an experience that is more satisfying than those in other similar destinations. Hopwood et al. (2005) underscored the importance of focusing on sustainable livelihoods and well-being. Crouch and Ritchie (1999) claimed that TDC concerns the capability of destinations to provide a high standard of living for residents of the destination." Many authors agreed that a competitive destination is one that increases the well-being of its residents in the long term (Crouch, Ritchie, 1999; Bahar, Kozak, 2007; Dwyer, Kim, 2003; Heath, 2003).

Therefore, the seven new indicators of TDC consider socioeconomic aspects, at the local level, as the "local economic growth" (I.7), "local well-being" (I.4) as a priority, and "standards of living of the poorest" (I.5) that are supposed to benefit from tourism growth. The positive economic impacts are also expressed by the growth of the "employment opportunities" (I.6), development of "local businesses" (I.8), and improvement of "local services" (I.10). To improve local services and infrastructures, "attracting investments" (I.9) is important.

Figure 1 Here

Figure 1 displays the model in the form of a sun. The 10 dependent variables of the model, which are the tourism outcomes, are determined by the "fusion" of the 62 attributes (comprised by the 8 aforementioned macro-attributes). Not all the attributes have the same role. The core of our model is sustainability, which is not confined to one particular macro-attribute. In all macro-attributes, some are directly connected with the sustainability concept; they appear in *italics* in Table A.1 in the Appendix. The model aims to test which attributes have a critical role and, in particular, if the attributes of sustainability have a crucial role, that is, if a positive relationship exists between the attributes of sustainability and TDC (as discussed in the preceding paragraphs; thus, Hypothesis 1).

The majority of the attributes comprised by the macro-attributes "tourism policy and planning" and "destination management" are directly referred to the sustainability concept as "the public sector commitment to tourism education," "to minimize the negative social and environmental impacts," and "to maximize the economic impact" of tourism, "the integrated approach to tourism planning," "the stewardship of the natural environment," "the tourism impact monitoring," and "the promotion of local partnership." Ritchie and Crouch (2003) claimed that these elements are all closely related to the sustainability concept, similar to the attributes "environmental quality" and "overall cleanliness of the destination" in the macro-attribute "general conditions," for "environmental friendliness of accommodations" in the "tourism services," and for "natural resources" and "green areas" in the "main attractions." The attributes "tourists' respect for local traditions and values" and "tourists' environmental awareness" in the "demand factor" involve the tourists' responsibility concept, whereas "local supply of goods," "presence of local businesses," "management capabilities of local tourism firms," and "level of professional skills in tourism" in the "supporting factors" are concerned with the socioeconomic pillar of tourism sustainability. "General infrastructures" also encompass some sustainability-related attributes as "environmental friendliness of local infrastructures," "sanitation, sewage, and solid waste disposal," and "accessibility of facilities by disabled persons."

3. Case study

Brazil is a developing country that is experiencing relevant economic and social changes and is heavily focused on tourism. The country has hosted the 2014 FIFA World Cup and the 2016

Olympic Games, thereby placing its tourism industry in the world spotlight. Brazil is also the most visited country in South America; the number of international tourists increased from 5.161 million in 2010 to 6.306 million in 2016. The Inter-American Development Bank (IDB), in its program for supporting the Brazilian tourism system, stated that the level of tourism development in Brazil is inconsistent with its potential, that is, the country's tourism supply remains small and concentrated along its coastline (IDB, 2009).

The World Travel and Tourism Council confirms that Brazil has tremendous unexpressed potential in tourism given that the country ranks sixth worldwide in terms of the direct contribution of its tourism to employment; however, in relative terms, Brazil ranks 120th (WTTC, 2017). The country receives almost the same number of international tourists as the Dominican Republic, a country that is 174 times smaller. Therefore, tourism still has enormous growth potential and can become an actual economic engine and a major source of income and employment, especially for the less-developed areas of Brazil.

Puppim de Oliveira (2005, p. 32) stated that "policymakers in Brazil were tardy in perceiving the potential of the tourism industry." Santana (2000, p. 429) claimed that "the legacy of many decades of inappropriate policies has placed the nation in an unfavorable position for competing regionally and internationally in the tourism market." Brazil faces socioeconomic problems; thus, despite its enormous and unrealized potential, tourism has been set aside to focus attention on pressing issues. Dredge and Lohmann (2012) widely documented a new direction in the new millennium. Nevertheless, similar to other developing countries, tourism in Brazil is threatened by the current negative economic outlook and endemic problems of corruption.

Tourism has played a major role in Brazil since the establishment of its Ministry of Tourism in 2003 and the launch of the first "National Tourism Plan 2003–2007". Meanwhile, Embratur, the National Institute of Tourism of Brazil, launched its international tourism marketing plan entitled "Plano Aquarela 2007–2010," which was followed at the end of 2009 by the "Plano Aquarela 2020."

Tourism in developing countries is often applied to small communities, regions, or developing island states that are usually marked by a low level of domestic demand and a high dependence on international travelers and managed by few multinational companies, resulting in high tourism leakages. This case is not applicable to Brazil. Domestic travel spending generated 93.5% of the direct travel and tourism GDP in 2016 (WTTC, 2017) and is the primary engine of the Brazilian tourism system. However, the country still shows unexploited potential in domestic tourism. Haddad et al. (2013) demonstrated that domestic tourism can be an important channel to ensure highly efficient allocation of resources and reduce inequality among Brazilian regions and areas within regions. Over the last two decades, a major impulse to domestic tourism comes from the expanding middle class. Domestic tourists are usually more accustomed to food, accommodation, and general comfort level than international tourists, thereby increasing the income opportunities for local businesses (Shah and Gupta, 2000).

A new model of cleaner tourism of a giant developing country, such as Brazil, can significantly affect the economy and livelihood of millions of people. In 1992, the federal government launched Prodetur-Ne/I (with a total estimated cost of US$ 670 million, followed by Prodetur-Ne/II) to foster tourism in the Northeast, one of the poorest and most attractive regions in Brazil. Prodetur stimulated new investments, created employment opportunities, and contributed to the regional economic development. Nevertheless, IDB, which financed the project, recognized the lack of integration of sustainability principles into the tourism planning and management processes, the insufficient involvement of stakeholders, and the weak environmental and social impact assessment, as follows: "tourism growth produced environmental problems such as uncontrolled settlement of people searching for jobs, private building in environmentally sensitive areas, encroachment on rainforests and mangroves, impacts on coastal reefs and other coastal ecosystems, and insufficient collection and disposal of solid waste in urban areas" (Redwood, 2014, p. 116). Pegas et al. (2015, p. 762) stated that "the economic and sociocultural outcomes, especially for poor northerners, are disappointing, and the involvement of a powerful and well-resourced domestic entity, such as Prodetur, should entail added responsibilities and outcomes that transcend such basic improvements in residents' quality of life."

One of the greatest threats to tourism development in Brazil is environmental sustainability. In Rio de Janeiro, the main problems are encountered in Guanabara Bay, which is "highly contaminated by substances derived from domestic and industrial effluents as well as from agricultural runoff" (Carreira et al., 2004, p. 587). Guanabara Bay is one of the world's most densely populated urban areas, with almost nine million people living around the bay and in shantytowns (*favelas*), which are disconnected to sewage treatment plants; moreover, many industries surrounding the bay, including refineries and oil and gas terminals. The magazine National Geographic raised this issue during the Summer Olympics in Rio 2016[3]. A remarkable contrast exists between official statistics and surveys of private/non-governmental organizations. The last official statistics indicate that 10 out of 37 beaches in Rio de Janeiro[4] and seven out of 38 in Salvador de Bahia[5] are inappropriate for bathing. A private/non-governmental survey on 1,217 Brazilian urban beaches indicated that the situation is worse than the previous findings, with almost 70% of the beaches polluted and inappropriate for bathing[6].

In Brazil, a sharp contrast exists between large hotel chains, developers, and other economic interests and, on the other hand, residents, nongovernment organizations, and local associations, especially in the Northeast with regard to the Prodetur program. The first party pressured the local governments to provide massive investments in large resort complexes and related infrastructures, whereas the second party claimed that this type of tourism development could degrade the

[3] https://news.nationalgeographic.com/2016/08/what-s-in-rio-s-bay-/.
[4] According to the last bulletin dated March 12, 2018 of the Inea, the local State Environmental Institute, http://www.inea.rj.gov.br/cs/groups/public/documents/document/zwff/mda5/~edisp/inea_009193.pdf.
[5] According to the last bulletin dated March 9, 2018 of the Inema, the local State Environmental Institute, http://www.inema.ba.gov.br/wp-content/uploads/2018/03/Boletim-N10-Balneabilidade-para-Salvador-emitido-em-09_03_2018.pdf.
[6] http://www1.folha.uol.com.br/cotidiano/2017/12/1945035-pais-tem-70-das-praias-improprias-para-banho-em-areas-urbanas.shtml.

environment and cause socioeconomic problems (Puppim de Oliveira, 2005). In many Brazilian destinations, environmentally protected areas were created as alternative mechanisms for environmental protection, receiving economic support from development and financial institutions (Souza, 2018).

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Many economic and social problems connected to tourism development exist in Brazil, including wage inequalities and unfavorable conditions between tourism and other sectors, with low investments in hospitality education and community empowerment (Silva & Freire Guimarães, 2017). Tourism development, especially in the Northeast, "posed a serious threat to the lives of coastal fishermen. In most of the fishing villages, the residents lacked property titles and were threatened by reckless land grabs by unscrupulous realtors in collusion with the corrupted local judiciary" (Ullán de la Rosa et al., 2017, p. 6). A major social problem in Brazil is sexual tourism. Bandyopadhyay and Nascimento (2010) claimed that the long-lasting "exotic" representation presented by Embratur through images of semi-naked women on the beach or samba dancing has turned Brazil into a sexual playground with devastating social effects in many destinations and poor communities.

These arguments highlight the relevance of considering Brazil as an ideal case study to test the role of sustainability on TDC in developing countries. Considering the geographical size and heterogeneity of Brazil, this study focuses on the country's two most important destinations for leisure tourism, namely, Rio de Janeiro and Salvador de Bahia, which are the second and third most visited cities by domestic leisure tourists (after Sao Paulo, where business tourism plays a major role). Rio de Janeiro is also the most visited city by international tourists[7].

We selected these two destinations because they belong to the two largest regions in the country. Rio de Janeiro is in the Southeast and Salvador de Bahia is in the Northeast. These two regions are extremely different. The Southeast, which is populated by 80 million people, is the richest region in the country and accounts for approximately 60% of the national GDP (Rio de Janeiro also has the second largest GDP among all cities in the country). The Southeast also leads the country in terms of population, urban population, population density, vehicles, industries, universities, airports, ports, highways, hospitals, schools, houses, and many other areas. Meanwhile, the Northeast is populated by 53 million people and is an impoverished region, where 58% of the population is living in poverty or less than $2/day (Jeff, 2011). Moreover, with regard to sustainability outcomes, the North, which shows similarities to the classic Third World coastal tourism development, and the South, which reflects a predominantly "organic" growth trajectory similar to more developed countries (Pegas, Weaver & Castley, 2015) exhibit certain differences. Further differences exist in the tourism marketing strategies. Bahiatursa, the state tourism agency, marketed Bahia as the "Land of Happiness" (*Terra da Felicidade*), whereas Rio de Janeiro was promoted worldwide as the "The Wonder City" (*Cidade Maravilhosa*) for its samba music, carnival, beaches, and natural wonders (Williams, 2014). Salvador de Bahia is also known as the site of blackness, the Afro–Brazilian capital, and cultural distinctive uniqueness, whereas Rio de Janeiro is known for its racial mixture

[7] Source: http://setur.pa.gov.br.

and multiculturalism (Sansone, 2003) and is the classic "city with a vocation for the beach" (Barickman, 2014).

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Rio de Janeiro, with an estimated population of 6.45 million, is a cosmopolitan city named as the second and third largest metropolitan area and agglomeration in Brazil and South America, respectively. Salvador de Bahia is a historic city that is considered by many as the cultural capital of the country. Rio de Janeiro, which received 6.3 million domestic and 2.5 million international arrivals in 2015[8], is a city of dramatic beauty, attributable to its forest (Tijuca), lagoon (Rodrigo de Freitas), rocky mountains with panoramic views (such as the Pico da Tijuca, which is 1,021 m high or the Corcovado with the Christ the Redeemer statue, which is 710 m high), and endless coast with wonderful beaches (such as the famous Copacabana and Ipanema). Its uniqueness worldwide is derived from these wonders of nature, which are located in the heart of the city. Apart from its pulsating nightlife, Rio de Janeiro is also known for celebrating the largest carnival in the world.

With almost 3.5 million residents, Salvador de Bahia is the third most populous Brazilian city. It is a major point of convergence of European, African, and American Indian cultures in the 16th to 18th centuries and is named as the first historic capital of Brazil. The city is mainly known for the "old town" of Pelourinho (named as a UNESCO World Heritage site in 1985 and largely restored during the 1990s) and its marvelous, kilometer-long beaches. With its several monuments, Salvador has been named as the colonial city *par excellence* in the Northeast[9]. Apart from its carnivals and beaches, Salvador is also famous for its cuisine, music, dance, and architecture. Salvador de Bahia airport has recorded 3.8 million national and 156,000 international arrivals in 2015[10].

4. Empirical analysis and methodology

A survey instrument was prepared from the list of 62 attributes of TDC. Primary quantitative data were collected through experts' judgment, which is the most appropriate method for obtaining the expected results considering the large number of tourism destination competitiveness attributes. This method has not only been proven highly feasible, but the judgment of experts is a valuable source of information based on their experience and expertise (Crouch, 2010). The survey was conducted among tourism stakeholders and practitioners because they can better assess attributes of TDC given their skills, experience, and knowledge of issues associated with these supporting factors (Enright & Newton, 2004; Omerzel Gomezelj & Mihalič, 2008).

The selected participants were tourism experts, including incoming travel agents, tourist guides, hotel managers, travel consultants, tourism professors and researchers, and tourism public managers. These people should have solid knowledge of a particular destination. Various sources, such as personal contacts, websites of public tourism offices, and universities, provided the researchers with an initial mailing list, and then a snowballing process was conducted. Many websites related to tourism were checked to identify the most appropriate potential respondents.

[8] Source: http://www.riocepetur.com.br.
[9] Source: http://whc.unesco.org/en/list/309.
[10] Source: http://observatorio.turismo.ba.gov.br.

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The data were collected through a web survey, which required the respondents to rate the performance of their tourism destination on a five-point Likert scale. Each competitiveness attribute was rated against a reference group of destinations because asking the respondents to provide absolute ratings for any destination on any given attribute of competitiveness is meaningless (Dwyer et al., 2003). This practice is performed because a given location is competitive against other destinations, not in a vacuum (Gomezelj & Mihalič, 2008). Consequently, the web survey began by asking respondents to identify the main competitive destinations (maximum of five). For the 10 dependent variables measuring TDC, the respondent should indicate how much s/he agrees or disagrees with each statement on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree).

The questionnaire was pretested on five Brazilian hotel managers, five tourism researchers, and five tourism professionals. Some attributes were simplified and/or rewritten based on the results of the pre-test. The final draft of the model was screened by a panel of academics and practitioners. The online survey was distributed electronically and was available in Portuguese. A total of 511 usable responses were received, of which 306 were from Rio de Janeiro and 205 were from Salvador de Bahia, including 151 tourism researchers, 163 travel agency managers, 67 hotel directors, 45 public tourism managers, and 69 other tourism professionals (see Table 1).

Table 1 Here

A PCA with varimax rotation was performed to reduce the dimension and treat the correlation among the 62 questionnaire attributes. The following four items were excluded from the analysis due to low factor loadings (< 0.4): “gastronomy,” “accessibility of destination,” “value for money in destination tourism experience,” and “regularity of tourist flows.” The Kaiser–Meyer–Olkin (KMO > 0.7) statistic and the Barlett’s test of sphericity ($p < 0.001$) provided support for the appropriateness of the PCA. Moreover, the internal consistency of the scale for each component is confirmed by the Cronbach’s alpha (alpha < 0.6) computed for each component (Hair et al., 1995).

The uncorrelated component scores were subsequently used as independent variables in a regression analysis to capture significant relationships between the components and the TDC indicators. In particular, the five-point measurement scale of the 10 TDC indicators was recoded into three categories, namely, disagree (i.e., “strongly disagree” and “disagree”), neutral, and agree (i.e., “agree” and “strongly agree”). To comply with the categorical and ordered nature of the measurement scale, a set of ordered logistic regressions was specified as follows:

$$y^{*}_{i,t} = \alpha + \sum_{k} \beta_k Component(GEN)_{ik,t-1} + \sum_{s} \beta_s Component(SUST)_{is,t-1} + \varepsilon_i,$$

where y^{*} is a continuous latent variable related to the TDC indicator as perceived by the respondents at the time of the survey (t), α is the constant term, and β_k and β_s are the coefficients associated with the *k-th* generic and *s-th* sustainability-related components, respectively,

representing the perception of the respondents toward the competitive attributes in the previous three years (t-1). In an ordered logistic model, the relation between the continuous latent variable (y*) and the three observed ordered measurements, namely, y = 0 (disagree), y = 1 (neutral), and y = 2 (agree), is defined as follows:

$$y = 0 \; if \; y^* \leq 0,$$
$$y = 1 \; if \; 0 \leq y^* \leq \mu,$$
$$y = 2 \; if \; y^* > \mu,$$

where the unknown threshold parameter μ is estimated in the model. The error term ε is assumed to follow a standard logistic distribution, and the model is estimated through the maximum likelihood.

5. Results

The PCA produced 11 components that explained 65.4% of the total variance (see Table 2).

Table 2 Here

The list of items included in each component is reported in Table A1 in the Appendix and displays a coherent structure of the interrelations among the attributes. For brevity, the PCA results are not discussed in detail in this paper.

As can be deduced from the list of attributes included in each component four components among the 11, namely, "sustainable tourism policy and management," "sustainable infrastructures," "sustainable local environment," and "tourist responsibility," directly referring to the concept of sustainability. Table 3 reports the estimated results for the relationship between the 10 TDC measures and the components of destination competitiveness, resulting from the PCA.

Table 3 Here

To assess the explanatory contribution of the sustainability-related components, two regressions were sequentially estimated, one with only the generic (*GEN*) components and the other with the generic and sustainability-related (*GEN, SUST*) components, were sequentially estimated. The model fits were compared using the likelihood ratio (LR) test, defined as $2\times[\log likelihood(GEN, SUST) - \log likelihood(GEN)]$. The test statistic follows a Chi-square distribution with degrees of freedom equal to the difference in the number of parameters between the two models. As reported in the bottom part of Table 3, the 0.001 critical value for a Chi-square with four degrees of freedom is 18.47.

The introduction of the sustainability-related components into the model leads to a considerable and statistical ($p < 0.001$) improvement of the model fit for each of the 10 TDC indicators. In fact,

the four components directly referring to sustainability have a positive role in almost all TDC indicators, whereas the results for the components not related to sustainability are mixed and in line with ex-ante expectation.

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The first PCA component, "sustainable tourism policy and management," has the highest impact on the model regardless of the dependent variable and the destination. This component is also positively significant in all dependent variables. This result shows that tourism policy and management is crucial in improving TDC. In these destinations, the efforts to "reform" the tourism sector toward a cleaner direction is expected to lead to a highly competitive tourism system.

The other components directly related to sustainability also play a positive role, thereby corroborating these results. The second component, "sustainable infrastructures," is also positively significant in all dependent variables of both destinations, thereby indicating that integrating a set of sustainability criteria into infrastructure planning can enhance TDC. Thus, analyzing the environmental impact of infrastructures can allow all projects to be planned and managed through a sustainable approach while contributing to the competitiveness of the destination.

The component "sustainable local environment" is significant in all TDC indicators. This result was expected considering that Brazil ranks first worldwide for natural attractions according to the WEF Index. The quality of its natural resources is vital for the entire tourism system and has a fundamental effect on TDC.

The component "tourists' responsibility" is also significant for the majority of the TDC measures, thereby confirming that TDC requires an appropriate management of tourism demand. Kastenholz (2004) suggested that sustainable tourism cannot be achieved without an appropriate management of tourism demand. Specifically, improving the local sociocultural awareness of tourists and enhancing their environmental behavior are important issues that can positively affect the competitiveness of destinations. In summary, these results suggest that to increase TDC, tourism planning and destination management have to be consistent with the concepts underlying sustainable tourism.

6. Conclusions and Recommendations

This study provides empirical evidence that sustainability plays a key role in fostering TDC in a developing country such as Brazil, thereby corroborating the research hypothesis. The empirical findings show that sustainable tourism is not only essential for preserving the ecosystem and the sociocultural foundation of a developing destination but also for improving its competitiveness. This study is the first to demonstrate that sustainability influences TDC in an emerging economy. Ultimately, this study contributes to the current literature by proposing sustainability as a priority for the competitiveness of destinations in developing countries, more specifically in Brazil. Thus, tourism policy makers and destination managers should be encouraged to adopt new planning and

management models that prioritize tourists' needs and the satisfaction of economic, environmental, and social needs at the local level.

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We have compiled a list of recommendations (see Table 4) based on the results to help destinations in developing countries, such as Brazilian destinations, to move toward a sustainable tourism development. Each of the recommended points derives from the attributes that are included in the four sustainable components. The first seven points come from the attributes included in the first component, "sustainable tourism policy and management," which has the highest impact on the model. The last three points are derived from the other three sustainable components, "sustainable infrastructures," "sustainable local environment," and "tourists' responsibility," which also play a positive and significant role in explaining TDC.

Table 4 Here

1 The successful implementation of a sustainable tourism model in developing countries ultimately depends on committed public and private leadership at the national, provincial, and local levels (Law et al., 2016). A more sustainable model can be achieved in emerging economies through appropriate infrastructure design, demand management, zoning, and monitoring of environmental and socioeconomic impact, merging the principles of sustainability with the tourism and economic growth objectives. The key issue is fostering tourism governance through a network of national, regional and municipal tourism departments. The level of tourism development in Brazil is inconsistent with its potential due to the weakness of its public tourism governance (Redwood, 2014). After 2003, the Brazilian federal government moved to generally decentralize its operations and develop tourism in a hierarchical model within the following levels: Ministry of Tourism, state, regional, and municipal level. Valente et al. (2015) showed that the focus in Brazil, as well as in other developing countries, should be not only to establish good leadership but also to provide closer attention to individual and organizational aspects such as participation, legitimacy, transparency, and efficiency.

2 The direct involvement of the main local stakeholders is essential in identifying key values and sensitivities, thereby contributing to sustainable development of tourism in developing countries. Sharing the policy framework, encouraging participation, promoting awareness, and illustrating the role of tourism are important instruments for building a joint vision of tourism development that can greatly benefit TDC in developing countries, as shown by the empirical analysis. However, implementing the participatory tourism development approach requires a total change of perspectives. A sustainable tourism model should not only attract the involvement of stakeholders (Hatipoglu et al., 2016), but also to change the attitudes and traditions of different stakeholders within the tourism industry (Kernel, 2005). The trajectory of a territorial and shared approach for the national tourism policy began in Brazil with the launch of the National Program for Tourism Municipalization in 1994, followed by the Program of Regionalization of Tourism

"Roteiros do Brasil" in 2004 based on the National Plan of Tourism 2003–2007. De Araujo and Bramwell (1999) observed the limited involvement of the private sector, environmental groups, and NGOs in Brazilian tourism planning. Evidently, further efforts should be dedicated to the development of new methods that can encourage the relevant stakeholders to participate in tourism planning decisions.

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3 "Tourism impact management and monitoring" is the attribute with the highest loading in the first component, thereby testifying that the conservation of natural and social habitats, stability of the ecosystem, and boosting of the local economic impacts are key issues to address. Managing the impacts of tourism on the environment and society is crucial, especially in developing countries where tourism development is usually fast and uncontrolled. The monitoring of tourism has to provide essential information about the past, present, and future of a destination.

4 High-quality personnel is one of the most important factor that can reflects the competitiveness of tourism products in developing countries. Investing in education in hospitality can contribute to the development of destination's competitive advantage. One of the main threats to the tourism competitiveness in developing countries is a tourism model based on cheap labor, low quality-low prices. The integration of the poorest communities into the tourism industry and the provision of formal jobs can be realized only through the process of capacity building, and developing human and social capital. The tourism growth in Brazil has led to the proliferation of low-paid, low-skilled, informal, and seasonal jobs, mainly street vending (Silva & Freire Guimarães, 2017). Meanwhile, national tourism policies have created the conditions to generate a supply of low-cost labor for tourism. The quality of services, which largely depends on the employees, can be compromised. Therefore, public and private entities need to invest in tourism and hospitality education programs to create a skilled workforce.

5 Tourism development in developing countries needs an integrated approach recognizing that resources, facilities, and infrastructures are interrelated with the social, cultural, and natural environment. The empirical evidence suggests that the integration of sustainable tourism into the overall development is fundamental. Tourism in developing countries often lacks "interaction" with the other sectors of the local economy, such as agriculture, thereby resulting in high tourism leakages. Brazil frequently shows a spatial duality between the most in-demand coastal location and plantation-based economy in the mainland. The improvement of the link between tourism and rural development can boost tourism industry diversification, sustainable development, and eventually TDC.

6 Tourism industry should generate income for local communities to be legitimate and useful. Tourism can have an important multiplier effect in developing countries. Financial support should be provided to local businesses in these areas. They need to prioritize the link between tourism development and poverty reduction. The empirical evidence shows that only by establishing housing, transportation, healthcare, employment and wage standards, and work-related and social protections for tourism workers that developing countries can develop a

sustainable tourism model that fosters TDC. Poor communities have to be empowered and encouraged to participate in the tourism industry and negotiate with the private sector. Low-income households could benefit from alternative revenue distribution as tourism is among the most important sources of government revenue (Incera & Fernández, 2015). Blake et al. (2008) showed that tourism benefits the lowest income sections of the Brazilian population and has the potential to reduce income inequality. However, as pointed out by the authors, the lowest income households are not the main beneficiaries of tourism. An alternative revenue distribution by the government can double the benefits of tourism for the poorest households and provide them with approximately one-third of all the benefits from this sector.

7 The arrival of outsiders in a particular area in developing countries may "disturb" the local culture, changing local lifestyles, with the consequence of loss of native customs and traditions. Hence, the authenticity of local cultural traditions should be preserved in these areas. Negative social impacts as gender inequalities, sexual exploitation, and loss of identity have to be addressed in emerging economies. Brazil's federal and state governments have exerted efforts in funding and promoting cultural programs (e.g., dance, music, ceremonies, art, and handicraft) and in networking local communities that have been previously operating independently from one another. These activities should be further implemented. Nevertheless, the sociocultural outcomes of tourism development in Brazil have been disappointing. The arrival of migrant and seasonal workers has been followed by illegal settlements and squatter areas (*favelas*), prostitution, illegal drug trade, and violence (Pegas et al., 2015).

8 Empirical evidence suggests that investments in infrastructures for medical care, transport, basic sanitation services (e.g., water supply, sewerage, drainage, and solid waste management), and other environmentally friendly infrastructures are fundamental in enhancing TDC in developing countries. Transport also plays a major role and provides one of the greatest challenges to sustainable development given the continental proportion of the country and the large distances that separate major cities and destinations. Investments in infrastructure and environmental protection are often in conflict, especially in developing countries. In Brazil, the Prodetur program showed an early effort in achieving this goal, but it needs to be integrated with sustainability principles. Puppim de Oliveira (2003) claimed that several strategies need to be implemented to achieve a cleaner model of tourism development in Brazil, including investing in environmental projects, implementing development control, introducing land use planning and development permits, enforcing environmental zoning, limiting the number of lodging units and types, assessing environmental impact, and establishing environmental agencies.

9 The regression analysis reveals that "sustainability of local environment" is an important determinant of TDC. The composition of this component, including the hospitality of residents, reveals that the consideration of the local environment should encompass the human environment. Protecting local communities and the natural environment must go hand in hand because of the interdependence of the human and natural environment. Locals are a fundamental part of the tourism product, that is, if they gain from tourism, then they will contribute by

offering an authentic and memorable experience. Modern tourists tend to escape from standardization and are willing to pay a premium for high-quality and authentic experiences. As natural resources are the top attraction in Brazil, the measures to protect them must be placed at the top of the government agenda due to the serious environmental problems. Apart from the establishment of protected areas, which brought a relevant indirect economic impact to other businesses and local communities (Souza, 2018), other environmental tools should be implemented (especially to address, among others, the problem of water pollution), but local institutions often lack adequate management capacity (Puppim de Oliveira, 2005).

10 Travelers need to be educated to understand the potential effects of their actions given that they are the final actors in making sustainable tourism a reality (Budeanu, 2005). The main problem in many developing countries is the tourism representation and destination image. Marketing strategies should be aimed to attract responsible tourists. In Brazil, since the Seventies, and for almost four decades, "Embratur invested large amounts of money in promoting the nudity of the carnival to attract international tourists" (Bandyopadhyay & Nascimento, 2010, p. 939). As a result, it has attracted a type of tourist that is far from being responsible and became one of the top sex tourism destinations in the world. The situation changed in the last 15 years as pictures of nearly naked women have been abandoned, and the domestic "Cores do Brasil" (Colors of Brazil) and the international "Plano Aquarela" (Watercolor Plan) marketing campaigns were launched to promote not only the country's carnivals and beaches but also its ecotourism attractions, culture, business, events, and sports. Intensive efforts should be exerted to change the destination image already ingrained in the minds of many international tourists.

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TABLES

Table 1. Sample descriptive statistics

	Count	Frequency
Occupation[a]		
Tourism researcher	151	29.5%
Travel agency manager	163	31.9%
Hotel director	67	10.4%
Public tourism manager	45	8.8%
Other tourism professional	69	13.5%
Sector [b]		
Public	113	22.1%
Private	302	72.8%
Age [c]		
20-30	105	20.5%
31-40	141	27.6%
41-50	120	23.5%
51-60	91	17.8%
Over 60	46	9.0%
Gender [d]		
Male	213	41.7%
Female	284	55.6%

Note: [a] 16 missing cases; [b] 26 missing cases; [c] 8 missing cases; [d] 14 missing cases.

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Table 2. Principal component analysis results

	Eigenvalue	*Variance explained*	*Alpha*
Sustainable Tourism Policy and Management (SUST)	20.21	17.67%	0.95
Sustainable Infrastructures (SUST)	3.50	9.91%	0.91
Local Tourism Businesses (GEN)	2.65	5.66%	0.86
Activities and Entertainment (GEN)	2.15	5.42%	0.83
Tourist Accommodations and Services (GEN)	1.94	4.87%	0.80
Economic Framework (GEN)	1.56	4.18%	0.65
Sustainable Local Environment (SUST)	1.37	3.97%	0.63
Tourists Responsibility (SUST)	1.27	3.82%	0.82
Destination Marketing (GEN)	1.17	3.51%	0.80
Historical and Artistic Resources (GEN)	1.11	3.44%	0.79
Clean Administrative System (GEN)	1.01	2.98%	0.83

KMO Measure of Sampling Adequacy (0.952); Bartlett's Test of Sphericity (χ^2 = 18246, p.<0.001)

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Table 3. Model results

	Tour.sat.	Env.imp.	Soc.imp.	Well-being	Poor.liv.
	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)
Constant	2.8 (0.189)***	0.05 (0.104)	1.212 (0.115)***	0.399 (0.1)***	0.025 (0.099)
Generic components					
Local Tourism Businesses	0.274 (0.11)**	0.324 (0.096)***	0.262 (0.093)***	0.11 (0.091)	0.053 (0.092)
Activities and Entertainment	0.512 (0.104)***	0.466 (0.098)***	0.504 (0.093)***	0.446 (0.092)***	0.519 (0.097)***
Tourist Accommodations and Services	0.215 (0.105)**	0.037 (0.095)	-0.09 (0.09)	0.174 (0.087)**	0.062 (0.092)
Economic Framework	0.523 (0.11)***	-0.208 (0.095)**	0.238 (0.09)***	0.138 (0.089)	0.044 (0.093)
Destination Marketing	0.654 (0.115)***	0.103 (0.095)	0.252 (0.089)***	0.143 (0.09)	0.109 (0.093)
Historical and Artistic Resources	-0.191 (0.107)*	0.023 (0.097)	-0.088 (0.092)	-0.14 (0.091)	-0.217 (0.094)**
Clean Administrative System	0.558 (0.131)***	0.261 (0.089)***	0.111 (0.09)	0.221 (0.086)***	0.081 (0.089)
Sustainable components					
Sustainable Tourism Policy and Management	0.486 (0.124)***	0.916 (0.102)***	0.832 (0.1)***	0.669 (0.094)***	0.683 (0.096)***
Sustainable Infrastructures	0.775 (0.126)***	0.638 (0.095)***	0.397 (0.094)***	0.564 (0.09)***	0.42 (0.091)***
Sustainable Local Environment	0.738 (0.109)***	0.347 (0.099)***	0.347 (0.089)***	0.436 (0.094)***	0.495 (0.098)***
Tourists Responsibility	0.476 (0.115)***	0.482 (0.099)***	0.321 (0.092)***	0.162 (0.09)*	0.238 (0.094)**
μ (threshold parameter)	1.67 (0.159)***	1.89 (0.139)***	1.48 (0.116)***	1.589 (0.117)***	1.01 (0.094)***
McFadden Pseudo R-squared	0.24	0.19	0.15	0.14	0.13
Log-likelihood (full)	-324.95	-429.75	-460.70	-477.00	-456.58
Log-likelihood (restricted)	*-384.34*	*-512.16*	*-519.30*	*-534.28*	*-509.26*
Chi-square (p<0.001; 4) = 18.47	118.78	164.82	117.20	114.56	105.36

Note: tourists satisfaction (tour.sat.); positive environmental impacts (env.imp.); positive social impacts (soc.imp.); increased well-being (well-being); poorest living standards (poor.liv.). *** = prob. < 1%; ** = prob. < 5%; * = prob. < 10%.

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Table 3. Model results (con't)

	Empl.opp.	Ec.grow.	Loc.bus.	Invest.	Infra.Serv.
	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)	Coeff. (Std.err.)
Constant	0.166 (0.099)*	2.309 (0.161)***	0.85 (0.103)***	2.487 (0.165)***	-0.102 (0.105)
Generic components					
Local Tourism Businesses	0.147 (0.093)	0.226 (0.103)**	0.158 (0.089)*	0.206 (0.101)**	-0.063 (0.096)
Activities and Entertainment	0.457 (0.094)***	0.444 (0.1)***	0.208 (0.087)**	0.373 (0.097)***	0.465 (0.101)***
Tourist Accommodations and Services	0.276 (0.093)***	0.085 (0.099)	0.108 (0.085)	-0.065 (0.098)	0.055 (0.096)
Economic Framework	0.167 (0.09)*	0.635 (0.106)***	0.315 (0.088)***	0.536 (0.101)***	0.097 (0.097)
Destination Marketing	0.148 (0.093)	0.487 (0.105)***	0.221 (0.087)**	0.486 (0.103)***	0.302 (0.1)***
Historical and Artistic Resources	-0.233 (0.093)**	-0.194 (0.104)*	-0.073 (0.088)	-0.199 (0.099)**	-0.168 (0.097)*
Clean Administrative System	0.197 (0.089)**	0.372 (0.109)***	0.276 (0.089)***	0.26 (0.104)**	0.299 (0.093)***
Sustainable components					
Sustainable Tourism Policy and Management	0.676 (0.095)***	0.757 (0.116)***	0.671 (0.094)***	0.631 (0.109)***	0.881 (0.105)***
Sustainable Infrastructures	0.486 (0.093)***	0.42 (0.114)***	0.339 (0.089)***	0.406 (0.11)***	0.874 (0.105)***
Sustainable Local Environment	0.294 (0.093)***	0.7 (0.104)***	0.235 (0.087)***	0.381 (0.094)***	0.465 (0.104)***
Tourists Responsibility	0.251 (0.092)***	-0.056 (0.102)	0.194 (0.086)**	-0.005 (0.097)	0.286 (0.099)***
μ (threshold parameter)	1.287 (0.106)***	1.39 (0.135)***	1.367 (0.104)***	1.666 (0.147)***	1.322 (0.116)***
McFadden Pseudo R-squared	0.13	0.21	0.10	0.16	0.20
Log-likelihood (full)	-466.52	-352.80	-497.56	-372.18	-418.85
Log-likelihood (restricted)	*-515.42*	*-405.10*	*-538.09*	*-404.92*	*-506.71*
Chi-square (p<0.001; 4) = 18.47	97.80	104.60	81.06	65.48	175.72

Note: employment opportunities (empl.opp.); economic growth (ec.grow.); benefits local businesses (loc.bus.); attracted investments (invest.); improved infrastructures and services (infra.serv.). *** = prob. < 1%; ** = prob. < 5%; * = prob. < 10%.

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Table 4. A List of Recommendations

Sustainable Tourism Policy and Management	1. Fostering tourism governance through a network of national, regional and municipal tourism departments 2. Facilitating stakeholders involvement 3. Managing and monitoring tourism impacts 4. Investing in education in tourism and hospitality 5. Adopting an integrated approach to tourism planning, also strengthening intersectoral linkages 6. Maximising local economic impact, by strengthening local economic linkages, and fostering local businesses 7. Prioritizing sociocultural issues, by addressing negative social impacts, and promoting local cultural authenticity
Sustainable Infrastructures	8. Balancing the development of natural attractions with investments in appropriate infrastructures
Sustainable Local Environment	9. Prioritizing the protection of natural environment together with the human environment
Tourists Responsibility	10. Increasing tourists' environmental and sociocultural awareness

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Appendix

Table A.1

MAIN ATTRACTORS	DESTINATION MANAGEMENT
Natural resources	Tourist destination communication
Historical sites	Effectiveness of destination positioning
Artistic and architectural features	Effective market segmentation
Green areas	*Effectiveness of destination management structure*
Cultural attractors	Tourist guidance and information
Events	*Stewardship of the natural environment*
Leisure activities	*Tourism impacts management and monitoring*
Evening entertainment and nightlife	*Promotion of partnerships among local tourism businesses*
Gastronomy	*Promotion of partnerships between public and private stakeholders*
Shopping opportunities	DEMAND FACTORS
TOURISM SERVICES	*Tourists' respect for local traditions and values*
Quality of accommodations	*Tourists' enviromental awareness*
Quantity of accommodations	Awareness of destination
Environmental friendliness of accommodations	Level of repeat visitors
Food services quality	Regularity of tourist flows
Tourist oriented services	GENERAL INFRASTRUCTURES
SUPPORTING FACTORS	*Environmental friendliness of local infrastructures*
Accessibility of destination	Quality of transport services and infrastuctures
Value for money in destination tourism experience	Communication system
Local supply of goods	Medical care facilities
Presence of local businesses	*Sanitation, sewage and solid waste disposal*
Management capabilities of local tourism firms	*Accessibility of facilities by disabled persons*
Use of IT by local tourism firms	GENERAL CONDITIONS
Level of professional skills in tourism	Banking and financial system
Hospitality of residents	Overall economic condition
TOURISM POLICY AND PLANNING	Entrepreneurship

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Political commitment to tourism	Exchange rate
Integrated approach to tourism planning	Political stability
Public sector commitment to tourism/hospitality education and training	Safety
Collaboration among public sector units for local tourism development	*Environmental quality*
Cooperation between public and private sector for local tourism development	*Overall cleanliness of the destination*
Emphasis on community participatory process in tourism planning	Cleanliness of government
Public sector commitment to minimizing negative environmental impacts of tourism	Modern and transparent public administration
Public sector commitment to minimizing negative social impacts of tourism on local community	
Public sector commitment to maximising economic impacts of tourism on local community	

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Table A.2

Original model component	*Attributes*	*Loading*	*Original model component*	*Attributes*	*Loading*
	Sustainable Tourism Policy and Management (SUST)			**Activities and Entertainment** (GEN)	
DestMan	Tourism impacts management and monitoring	0.745	Attract	Events	0.758
TourPol	Public sector commitment to tourism/hospitality education and training	0.741	Attract	Evening entertainment and nightlife	0.693
TourPol	Collaboration among public sector units for local tourism development	0.736	Attract	Cultural attractors	0.678
TourPol	Public sector commitment to minimizing negative social impacts of tourism on local community	0.726	Attract	Leisure activities	0.636
DestMan	Promotion of partnerships among local tourism businesses	0.725		**Tourist Accommodations and Services** (GEN)	
TourPol	Public sector commitment to minimizing negative environmental impacts of tourism	0.710	TourServ	Quality of accommodations	0.721
DestMan	Promotion of partnerships between public and private stakeholders	0.707	TourServ	Quantity of accommodations	0.715
DestMan	Stewardship of the natural environment	0.702	Attract	Shopping opportunities	0.576
TourPol	Emphasis on community participatory process in tourism planning	0.694	TourServ	Food services quality	0.514
TourPol	Public sector commitment to maximizing economic impacts of tourism on local community	0.685	TourServ	Environmental friendliness of accommodations	0.478
DestMan	Effectiveness of destination management structure	0.683		**Economic Framework** (GEN)	
TourPol	Integrated approach to tourism planning	0.663	*GenCon*	*Entrepreneurship*	*0.530*
TourPol	Cooperation between public and private sector for local tourism development	0.641	*GenCon*	*Banking and financial system*	*0.517*
DestMan	Tourist guidance and information	0.590	*GenCon*	*Political stability*	*0.500*
TourPol	Political commitment to tourism	0.516	*GenCon*	*Exchange rate*	*0.444*
	Sustainable Infrastructures (SUST)			**Sustainable Local Environment (SUST)**	
Infrastr	Sanitation, sewage and solid waste disposal	0.710	Attract	Natural resources	0.636
GenCon	*Overall cleanliness of the destination*	*0.689*	Support	Hospitality of residents	0.542
Infrastr	Accessibility of facilities by disabled persons	0.654	Attract	Green areas	0.520
Infrastr	Medical care facilities	0.648		**Tourists' Responsibility (SUST)**	
GenCon	Safety	0.626	Demand	Tourists' respect for local traditions and values	0.793
GenCon	Environmental quality	0.610	Demand	Tourists' environmental awareness	0.775

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Infrastr	*Environmental friendliness of local infrastructures*	*0.584*
Infrastr	Communication system	0.576
Infrastr	Quality of transport services and infrastructures	0.535
GenCon	*Overall economic condition*	*0.490*
	Local Tourism Businesses (GEN)	
Support	Management capabilities of local tourism firms	0.675
Support	Level of professional skills in tourism	0.662
Support	Use of IT by local tourism firms	0.651
Support	Presence of local businesses	0.607
TourServ	Tourist oriented services	0.494
Support	Local supply of goods	0.440
	Destination Marketing(GEN)	
Demand	Awareness of destination	0.594
DestMan	Effective market segmentation	0.579
DestMan	Effectiveness of destination positioning	0.503
Demand	Level of repeat visitors	0.482
DestMan	Tourist destination communication	0.462
	Historical and Artistic Resources (GEN)	
Attract	Historical sites	0.850
Attract	Artistic and architectural features	0.843
	Clean Administrative System (GEN)	
GenCon	*Modern and transparent public administration*	*0.822*
GenCon	*Cleanliness of government*	*0.765*

Note: Attract = main attractors; TourServ: tourism services; Infrastr: general infrastructures; Support: supporting factors; GenCon: general conditions; TourPol: tourism policy and planning; DestMan: destination management; Demand: demand factors.

Due to low factor loadings (<0.4) the following four items were excluded from the analysis: “Gastronomy” (TourServ); “Accessibility of destination” (Support); “Value for money in destination tourism experience” (Support); “Regularity of tourist flows” (Demand).

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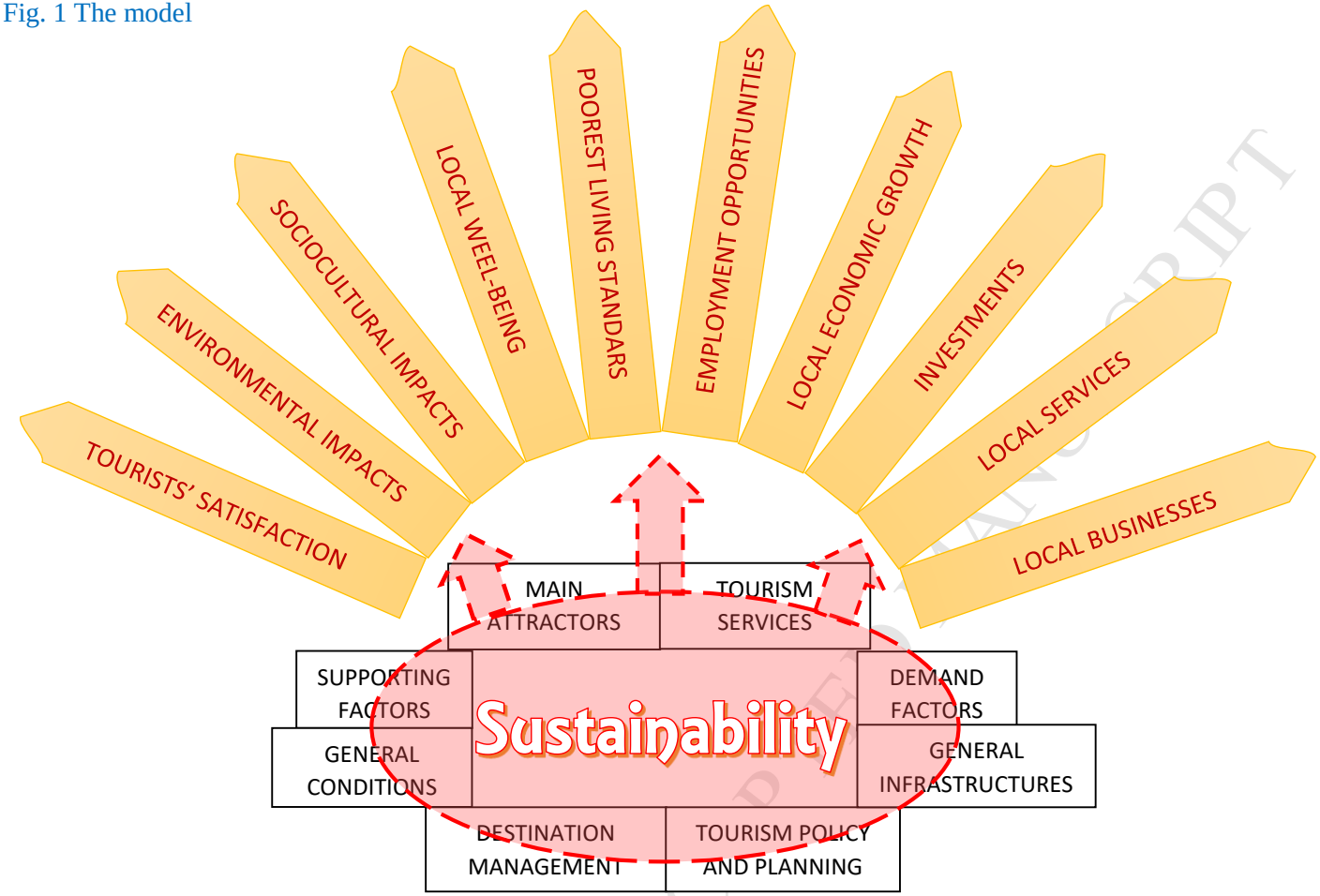
Fig. 1 The model



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