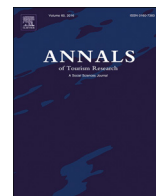


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Extending tourism competitiveness to human development

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ABSTRACT

This study presents the Tourism Competitiveness Theory Hypothesis, anchored on a dynamic framework, and unifying the competitiveness theory with human development. The hypothesis rests on the recursive nature between tourism competitiveness and human development. The relationship was tested through a mixed-effect regression model in ten South American countries. The results suggest mutual reinforcement links mediated by the human development dimensions, especially health. The study also designed a typology model identifying four groups of countries that revealed distinct, non-linear behavioral patterns. Theoretical and managerial implications centered on the relevance of resource use, public allocation choices toward human development sectors, and the required sequencing to promote the mutual reinforcement nature embedded in the Tourism Competitiveness Theory Hypothesis.

Introduction

This study examines the dynamic links between tourism competitiveness and human development. Tourism competitiveness has been mainly considered from an instrumental perspective - moored by production scarcity factors (Dwyer, Forsyth, & Rao, 2000; Li, Song, Cao, & Wu, 2013; Seetaram, Forsyth, & Dwyer, 2016). Instead, this study argues that tourism competitiveness is conceptually linked to human development in mutually beneficial manners. The study defines human development as the growth of human choice (Sen, 1987, 1999) in pursuit of valued goals.

Connections between tourism competitiveness and human development are arguable. On one hand, tourism competitiveness provides the resources to support and sustain improvement in human development. Higher income countries reveal a healthier, more productive and live-longer populace compared to lower income countries suggesting that income and possessions matter in shaping human development. However, determinant factors exist that marry human development to tourism competitiveness. That is, human development growth includes and fortifies one's health, education, and skill to contribute to tourism competitiveness, but little is known about these influences, their nature, and potential regarding tourism competitiveness.

Based on the identified gap in the literature, this paper assesses two questions. (1) What constitutes the conceptual connection between tourism competitiveness and human development? To answer, trade theory assumptions, consumer demand theory, and Sen's capability approach undergird the concept. (2) Does this connection explain differences in tourism competitiveness over time? This question is examined according to the Ranis, Stewart, and Ramirez (2000) method and applies a multilevel mixed-effect linear regression technique. Further, a tourism competitiveness typology is constructed based on a multi-period analysis model of tourism competitiveness, opposing tourism literature's one-period tourism competitiveness assessment.

This paper lays the foundation for further development of the theoretical connection between tourism competitiveness and human development, reveals the methodology, interprets the impact and insights in its findings, and concludes with Tourism

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Competitiveness Theory Hypothesis's theoretical and policy implications.

Literature review

Tourism competitiveness

Several studies defined tourism competitiveness, such as Hassan (2000), Ritchie and Crouch (2003), Hong (2009), Croes (2011), Azzopardi (2011), and Abreu-Novais, Ruhanen, and Arcodia (2016). The tourism literature characterizes tourism competitiveness as problematic (Mazanec, Wöber, & Zins, 2007; Croes, 2011; Azzopardi, 2011; Zehrer, Smeral, & Hallman, 2016; Abreu-Novais, Ruhanen, and Arcodia, 2018). For example, Gooroochurn and Sugiyarto (2005, p. 26) claim that “identifying the elements of competitiveness is contentious because of the conceptual problem embodied in its definition.” Further, the tourism literature reveals the existence of multiple definitions of tourism competitiveness (Abreu-Novais et al., 2016; Azzopardi, 2011; Croes & Kubickova, 2013; Hall, 2007; Hong, 2009; Mazanec et al., 2007).

Following Abreu-Novais et al. (2016), this study identifies two major orientations characterizing tourism competitiveness. The first one focuses on internal attributes and abilities, aiming at enhancing residents' well-being, a line of thinking followed by Crouch and Ritchie (2003), Enright and Newton (2004), Azzopardi (2011) and Croes and Kubickova (2013). This stream seems embedded in the comparative advantage framework and trade theory (Zhang & Jensen, 2007). The second orientation links tourism to market position revealed in larger numbers of tourist arrivals or overnights compared to those of competing destinations, and derives its core assumptions (e.g., promoting rivalry) from management theories (Bristow, 2005; D'Hautesserre, 2000; Dwyer & Kim, 2003; Gooroochurn & Sugiyarto, 2005; Hassan, 2000; Hong, 2009).

These definitions seem mutually exclusive because they may trigger different managerial tourism practices and results. For example, the external orientation, embedded in management theories, may imply pursuing monopolistic objectives (Buhalis, 2000; Melian-Gonzalez & Garcia-Falcon, 2003), which may hamper the goal of well-being as contemplated by the internal orientation. The policy implication of the external orientation may center on considering a destination's unit cost level (e.g., unit labor cost) to assess a destination's ability to sell its offerings and services. The policy focus would be to keep prices in check with low wages and to practice real effective exchange rate as a measurement of competitiveness. The study of Balaguer and Cantavella-Jorda (2002) is an example of this approach. Alternatively, the internal orientation centers on productivity to enhance well-being and to pay higher wages (Croes, 2011).

The epistemological challenges pertain to factors exposed as tourism competitiveness sources. Because the tourism competitiveness construct cannot be measured directly, commentators designed models suggesting tourism competitiveness as a relative, multidimensional concept determined by economic, political, ecological, and cultural variables. Typically, studies reveal numerous factors, including works of Crouch and Ritchie (2005), Dwyer, Mellor, Livaic, Edwards, and Kim (2004), Gooroochurn and Sugiyarto (2005), Enright and Newton (2005), Hong (2009) and Mazanec et al. (2007). Crouch and Ritchie (2005) identified 36 attributes with over 250 factors. The World Economic Forum (2015) Travel and Tourism Competitiveness Index reveals 14 pillars with 72 variables. The measurement problems embodied in the tourism management concept stem from the vast number of factors and attributes considered as inputs of competitiveness. The vast number of attributes seems to respond to the need of comprehensiveness.

Nevertheless, the mere summation of factors does not provide meaningful insights into our understanding of tourism competitiveness. A comprehensive list of factors or attributes fails to recognize that not all factors are equally relevant or meaningful to reveal competitiveness. For example, is a destination more competitive because it has an enriched cultural heritage compared to another that lacks that resource? Knight and Cottrell (2016) suggest in the case of Cuzco, Peru, with its rich culture, that cultural heritage will not automatically result in or initiate an enhanced well-being of indigenous communities. The need for a greater understanding of tourism competitiveness prompted others to investigate the tourism factors of production: Mazanec and Ring (2011), Benito, Solana, and Lopez (2014), and Zehrer et al. (2016). Thus, studies of tourism competitiveness began prioritizing or weighing critical factors, stressing the need for research precision (Abreu-Novais et al., 2016; Crouch & Ritchie, 2005; Enright & Newton, 2004, 2005; Gooroochurn & Sugiyarto, 2005; Hong, 2009; Mazanec et al., 2007; Zehrer et al., 2016).

Characterizing tourism competitiveness as a subject domain includes explaining how these factors are connected. For example, Mazanec et al. (2007, p. 88) advocated the need to tie inputs to performance, because performance will link competitiveness with “cause-effect relationships.” Tourism competitiveness, then, can lead to well-being. There is growing literature supporting this contention (Andereck, Valentine, Knopf, & Vogt, 2005; Gholipour, Tajaddini, & Nguyen, 2016; Ridderstaat, Croes, & Nijkamp, 2016; Smith & Diekmann, 2017; Woo, Kim, & Uysal, 2015). Alternatively, well-being can also become a source of competitiveness (Pyke, Hartwell, Blake, & Hemingway, 2016; Woo et al., 2015).

Two main premises anchor the tourism competitiveness construct. First, production factors are inputs in the tourism production process that evolves as outcomes (utility). The latter suggests that the tourism product relies on instrumental activities that include cost and benefit calculations (revenues). These activities adhere to individual and private transactions to achieve material rewards (income). Second, the tourism product is built on the scarce resource framework, implying that depletable resources are combined into the product. Because these resources are limited and costly, they must be economized over time. The corollary effect is that production costs will increase over time (Smeral, 2003); hence, tourism competitiveness studies postulate that the competitiveness focus should be on sustainability (Cucculelli & Goffi, 2016; Mihalić, 2000) rather than performance.

Evidently, there is need to balance vital factors. Premising an automatic link between input and output does not account for the destination's market size, its economic development stage (destination life cycle), and its economic structure (Croes, 2011). A comprehensive list of factors sourcing tourism competitiveness appears to require that destinations address all indicators. While no

single tourism competitiveness factor ensures destination success, failing one or succumbing to failure's cumulative effect could compromise competitive advantage. The danger is that the comprehensiveness principle can evolve to an Anna Karenina bias (Shugan, 2007). This bias would fail to recognize that not all factors are equally relevant or meaningful in framing the destination competitiveness construct. Some factors may add little value to understanding the concept, while others might enhance greater understanding. The need for balance prompted research prioritizing critical factors key to understanding the destination competitiveness construct (Abreu-Novais et al., 2016; Crouch & Ritchie, 2005; Enright & Newton, 2004, 2005; Gooroochurn & Sugiyarto, 2005; Hong, 2009; Lee & King, 2009; Mazanec et al., 2007).

There are limited number of studies that centers on assessing the competitive positions of specific countries in South America such as Brazil and Argentina (Sobral, Peci, & Souza, 2007), Chile (Aqueveque & Bianchi, 2017) Colombia, Venezuela (Gutiérrez, 2015; Zúñiga-Collazos & Castillo Palacio, 2012), and Uruguay (Barbe, Triay, & Haufe, 2016). While these studies apply a large number of factors to diagnose the competitive position of the countries under review, they fail to identify some potentially critical factors (like human development) that could be equally relevant or meaningful to reveal competitiveness.

Human development

Sen (1999) claims that assessing human development should be more directly linked to the freedom to choose from available opportunities, rather than to possessions and income that do not capture the complete array of human experience dimensions. Sen (1993, 1999) asserts that human development is grounded on three pillars: opportunities (capabilities), achievements (functioning), and freedom to choose and seize opportunities. According to Sen (1993, 1999), resources impact functionings and are observed through achievements (Croes, 2012). Sen (1993, 1999) conceives achievements as opportunity and outcome (achieved quality of life).

The United Nations Development Programme (UNDP), influenced by Sen's capability approach, launched its human development paradigm in 1990 emphasizing human development as valuable life options. It created the Human Development Index (HDI) as an alternative to the gross domestic product (GDP) to measure human achievements and reflects Aristotle's notion of the "good life." The HDI is a composite index of literacy rates, life expectancy, and incomes, following Sen's capability approach. The focus, henceforth, has become the ability to convert resources into human development, shifting attention from inputs (income and possession) to outcomes (a good life), eschewing the competitiveness view based on potential. Potential makes no destination more attractive due to factors such as inequality, market imperfections, and institutional weaknesses.

That is why the focus on ability is grounded on performance, which encapsulates a demand perspective associated with memorable experiences. Memorable experiences are revealed through international receipts (export) captured due to destination firms' existence and performance. Therefore, for tourism competitiveness to exist, tourism receipts and human development are meaningful conditions. Moreover, resource distribution (equality) and the opportunities that an individual requires to lead the life he values are relevant and meaningful life outcomes. Given this perspective, the standards defining human development include a range of choices, freedom to choose, and resources to achieve choices (Croes & Kubickova, 2013).

Much can be gained from this approach. Tourism competitiveness provides material resources to support human development by expanding choices and opportunities to realize a healthy, fulfilling life. Biagi, Ladu, and Royuela (2017) indicate that in 63 developed and developing countries, tourism development has a significant, positive effect on human development. A healthier life and educated workforce could lead to higher productivity. Ridderstaat et al. (2016), Woo et al. (2015), and Croes (2012) found that quality of life influences tourism development. Greater freedom and broader capabilities may improve tourism competitiveness, albeit they are dependent on tourism's economic strength, policy choices, and benefit allocation.

Redefining the tourism competitiveness construct

The study takes a destination-centered approach to the definition and theorization of tourism competitiveness by connecting the former with human development. This approach assumes destinations as the unit of analysis, following tourism competitiveness studies (Ayikoru, 2015; Azzopardi, 2011; Croes & Kubickova, 2013; Crouch & Ritchie, 1999; Cvelbar, Dwyer, Koman, & Mihalic, 2016; D'Hauterter, 2000; Dwyer et al., 2000; Enright & Newton, 2004; Webster & Ivanov, 2014).

Two main reasons support the destination-centered approach. First, destinations do not close because they can adjust their prices and welfare levels. Destinations benefit in their well-being and quality of life if other destinations also prosper. Second, the tourism product is income elastic, so destination residents and tourism source countries can benefit simultaneously. This elasticity may benefit a destination from terms of trade gains. Competition is here a positive rather than zero-sum result.

Tourism competitiveness covers two other components: satisfaction and productivity. Satisfaction determines value and is associated with the destination's ability to provide memorable experiences to tourists. This concept is anchored in demand theory that reveals choices, tourist preferences, and empowers tourism demand. Multiple studies, such as Crouch and Ritchie (1999), D'Hauterter (2000), and Dwyer and Kim (2003), reference satisfaction as a destinations' appeal to tourists and tourist experiences. Satisfaction can predict a tourists' willingness to pay (Homburg, Koschate, & Hoyer, 2005) and tourists' spending budget (Disegna & Osti, 2016). It can be assumed that tourism receipts reflect demand and supply-side factors because to attract and satisfy visitors, offerings should be available in the quantity and form that visitors demand. Supply responds to demand - linking both factors through tourism receipts.

Productivity is relevant for human development because it prods effective resource use, creates value in using resources, and measures used resources' performance. This implies that used resources should provide economic, social, and environmental benefits

that exceed their corresponding costs. Assessing productivity in the tourism context is difficult (Joppe & Li, 2016; Smeral, 2007) because tourism encapsulates intangibility, simultaneous production and consumption, perishability, and heterogeneity. Compounding tourism production complexity is required for tourist involvement in the value-creation process.

Blake, Sinclair, and Soria (2006) viewed productivity increases as a consequence of underlying drivers, highlighting the human capital role in tourism productivity. Clerides (2012) and Croes (2011) investigated the theoretical link between competition and productivity, considering productivity as a destination competitiveness source. Dwyer et al. (2000), Li et al. (2013), and Seetaram et al. (2016) proposed centering on price competitiveness, implying that higher prices may negatively affect competitiveness. However, labor costs may result from higher-level jobs of an increasingly innovative and competitive industry. Joppe and Li (2016) stressed human capital as relevant in prompting productivity through satisfaction and memorable experiences. Satisfaction and memorable experiences grew via innovations and increased service quality. Hence, productivity may rely more on talented human capital, innovation, and quality rather than on cost competitiveness measures. Productivity's narrow focus on efficiency and effectiveness with which production inputs are employed may conceal the complex linkages between income, non-income factors, and human development.

These linkages include mediating factors such as inequality, market imperfections, and institutional weaknesses that may affect a destination's competitive level (Ayikoru, 2015). Thus, this study is anchored on performance-assessing outcomes as the required informational basis of tourism competitiveness (Croes & Kubickova, 2013). Tourism competitiveness researchers have usually defined outcomes in market shares, arrivals, and receipts. Receipts have been considered in relation to GDP and associated with well-being. The premise here has been that higher incomes triggered by tourism reflect prosperity, wealth, and employment.

Evidently, higher income not necessarily channels human development. Evidence suggests that destinations fail to deliver benefits to their populations under their maximization of destination revenues. Also, evidence indicates that rising incomes have experienced declining marginal utility. How resources impact human development is unclear due to conflicting life desires and needs. However, if monetary resources are instrumental in supporting health care, education, infrastructure, life amenities, and a meaningful life, then human development is enhanced. Subsequently, human development's multidimensional nature implies that one could live according to personally defined values.

The tourism competitiveness theory hypothesis

This study redefines tourism competitiveness as the reconfiguration of resources, assets, and services toward a product that increases satisfying and memorable tourist experiences. The reconfiguration could build resident-tourist interactions that then foster resident knowledge and skill to compose the positive tourist experience, thus emphasizing tourism's relational aspects (Russo & Richards, 2016). The proposed definition includes four relevant characteristics involving tourism competitiveness. These characteristics allude to long-term performance moored in productivity (Clerides, 2012; Croes, 2011), resource and asset control, which references product quality and derived memorable experiences (Crouch & Ritchie, 2003), relativity, which is the ability to attract tourists over competing destinations (Zehrer et al., 2016, Abreu-Novais, Ruhanen, & Arcodia, 2016), and dynamic processes, which implies that the product constantly evolves by building capabilities (Kubickova, Croes, & Rivera, 2017).

These characteristics are critical to the core assumption of the comparative advantage framework, i.e., the promotion of mutual gains through trade. The tourism product is income elastic (Li et al., 2013), meaning there is potential for residents from destinations and source countries to benefit simultaneously. The effectiveness of our definition rests on its simplicity and precision, because the tourism index stemming from our definition entails minimum data requirements with wide-ranging social economic effects. Our definition identifies two meaningful components to consider: satisfaction of the tourist and residents' well-being. Satisfaction can be measured through tourist spending, and residents' well-being through the HDI. Both measurements are dynamic and comparable among destinations over time.

This definition ties tourism competitiveness with human development through the capability construct. It eschews the relativity measurement based on scales, such as more arrivals, overnights, or the size of the tourism industry as relevant measurement of tourism competitiveness. Rather, relativity is based on a ranking moored in performance, which ties satisfaction (tourists) with well-being (residents). Satisfaction reveals the ability of a destination to continuously deliver memorable experiences (Crouch & Ritchie, 1999). Satisfaction may generate higher tourists' spending (Kozak & Rimmington, 1999; Alegre & Juaneda, 2006), and higher spending may trigger and reflect greater human development (Pyke et al., 2016; Croes et al., 2018). Also, increasing tourist receipts may not accrue to residents' benefits due to market distortions and institutional deficiencies (Ayikoru, 2015). Therefore, this study characterizes competitiveness through its impact on human development.

The connection between tourism competitiveness and human development centers on the expansion of opportunities and choices, which are the central objective of human activity (Sen, 1999). That is, healthier, longer, and fuller lives are considered the ultimate objectives of a destination's activities (UNDP, 2010). Ranis et al. (2000) provide ample empirical evidence that opportunities and choices foster creativity and productivity. Both elements are sources of output growth and trade (Ranis et al., 2000; Sen, 2000). Ranis et al. (2000) claim that there is a virtuous feedback system when these two dimensions interface in a positive manner. Tourism provides opportunities to destination residents by facilitating jobs, providing income to buy food and shelter, and promoting residents' participation in their communities.

As these opportunities expand and spread benefits to broader residents' segments, residents support tourism through higher productivity, innovativeness and creativity. Hirschman (1984) suggests that when self-interest interfaces with trust and coordination (benevolence), the ensuing dynamic feedback process may generate meaningful welfare results to the collectivity. However, when there is a lack of trust in the institutions to protect productive efforts, incentives to engage in creative and productive activities are

eroded. When talented human capital is required and valued, opportunities expand to discover and support life achievements. This is implied in the Pyke et al. (2016) study suggesting that well-being is an important tourism product providing benefits to tourists and residents. Creating memorable experiences can generate income resources, which can affect life achievements/well-being. These achievements (e.g., healthy, educated, creative individuals) increase productivity and a cycle emerges. This claim theoretically connects tourism competitiveness with human development, according to Sen's (1999) capability approach. That connection is encapsulated in Tourism Competitiveness Theory Hypothesis.

The Tourism Competitiveness Theory Hypothesis eschews the non-recursive nature of tourism competitiveness embedded in the Ritchie and Crouch and Dwyer and Kim's models, embracing the recursive nature. The Tourism Competitiveness Theory Hypothesis perspective prompts three considerations. First, it shifts destination typologizing based on circumstances rather than attributes (factors). The shift is revealed in destination performance (output utility) and human development. This approach motivates the definition of a two-dimensional space of four possible competitive destination types: *virtuous*, *vicious*, *HD lopsided*, and *TC lopsided*. In virtuous destinations, good tourism competitiveness enhances human development, promoting tourism competitiveness. In vicious destinations, poor tourism competitiveness restrains HD, depressing tourism competitiveness. Finally, the types of lopsidedness reveal either strong tourism competitiveness combined with a weak HD (lopsided TC) or weak tourism competitiveness with a strong HD (lopsided HD). Second, the study incorporates time into the two-dimensional space to account for destination shifts between time periods. The temporal dimension prods a dynamic approach facilitating destination regression or progression observation. This dimension also allows understanding of change processes, moving from the linear toward the non-linear process.

Third, central to this approach is the 'direction' that defines the recursive relationship and explains the channels defining it. This study contends this connectivity may include three linked outcomes: tourism competitiveness to human development, human development to tourism competitiveness, and mutual connection. Empirical results provide meaningful insights for tourism competitiveness theoretically proposing broad categories and explaining the non-linear processes that occur.

Applying the Tourism Competitiveness Theory Hypothesis model answers three questions: (1) what constitutes tourism competitiveness, human development, and measurement specifics? (2) what connections exist between tourism competitiveness and human development at a point in time and over time? (3) what channels explain fluctuating progression and regression of destination competitiveness?

Methodology

A case study approach

The case study could be used as a research strategy to create theoretical constructs, propositions, and/or theories (Eisenhardt & Graebner, 2007). Generally, these studies do not focus on statistical generalization of the findings (Veal, 2006; Yin, 2014), but aim to contribute new ideas via derived evidence (Smith, 2010). This research was based on 10 South American countries, i.e., Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela that show heterogeneous physiognomies, with variations in surface, population, economy size, income per capita, income inequality, and tourism exports (Table 1).

This region's tourism output is modest and regional competition small - receiving one-third of total international arrivals to Latin America. Tourism represents one-third of the total exports in South America (Santos, 2015). For example, during 2010 and 2018, the international arrivals to South America revealed an average annual growth rate of 5.8%, the highest score in America's (WTO, 2019). International arrivals in 2018 reached 37 million and spent \$30 billion in US dollars, which is less than what tourists spent in 2018 in the Caribbean (US\$32 billion). The spending per arrival in 2018 in South America \$811 of US dollars was also less than the spending per arrival in the Caribbean of US\$1245.00. Brazil, Argentina, and Colombia are the most popular destinations for international

Table 1

Country characteristics (2016, or otherwise indicated).

Source: World Bank, Wikipedia.

	Area	Population	GDP	GDP per capita	Tourists	Gini coefficient	Tourism receipts
	(In million miles ²)	(In millions)	(In USD million)	(In USD)		(Average in %)	(2015: in USD million)
Argentina	1074	43.8	545.5	12,440	5,559,000	49.9	5011
Bolivia	424	10.9	33.8	3105	882,000 (2015)	54.3	804
Brazil	3288	207.7	1796.2	8649	6,306,000 (2015)	57.4	6254
Chile	292	17.9	247.0	13,793	5,641,000	50.6	3229
Colombia	441	48.7	282.5	5805	2,978,000 (2015)	53.2	5251
Ecuador	109	16.4	98.6	6018	1,543,000 (2015)	50.2	1557
Paraguay	157	6.7	27.4	4078	1,214,000 (2015)	53.8	347
Peru	496	31.8	192.2	6049	3,456,000 (2015)	47.5	4151
Uruguay	68	3.4	52.4	15,220	2,773,000 (2015)	42.9	1880
Venezuela	354	31.6	482.3 (2014)	15,692 (2014)	789,000 (2015)	44.2	654
Mean	670	42	376	9085	3,114,100	50.4	2914
Standard deviation	963	60	531	4774	2,088,855	4.6	2153
Coefficient of variation	143.6%	143.8%	141.3%	52.5%	67.1%	9.0%	73.9%

arrivals and spending (WTO, 2019).

Although the South American tourist industry displays strong growth, its competitiveness level compared to developed countries, such as Spain and France remains low (Ivanov & Webster, 2013). Still, their tourism competitiveness is higher than developing countries, such as Algeria, Ethiopia and Cameroon placing their competitiveness levels somewhere in between (Assaf & Dwyer, 2013; Gooroochurn & Sugiyarto, 2005). A tourism market concentration analysis shows that the Herfindahl-Hirschman Index (HHI) of the selected countries hovered low on the moderate concentration region. The range between the highest and lowest HHI was 239.0 index points, while the coefficient of variation was 4.75%, the latter indicating a low variation level (authors' calculation).

However, the region's tourist potential is enormous. For example, the region possesses 76 world heritage sites (UNESCO, 2018), the Amazon rainforest occupies nine countries revealing vast biodiversity: Brazil ranks among the most biodiverse countries in the world (Santos, 2015). The South American region also experienced impressive sustained economic growth in the 2000s, combined with substantial reductions in income inequality and poverty (Vakis, Rigolini, & Lucchetti, 2015). Albeit, this progress occurred at different levels and speeds between and within the countries. One in four people in South America remains poor (Vakis et al., 2015).

Formulating the constructs

This study centers on the tourism competitiveness and human development connection. Aligned with Croes (2011), it considers the Tourism Competitiveness Index as a composite of three inputs (1) tourism market performance; (2) tourism's performance over time; and (3) the tourism industry's size relative to the economy. Contrary to Croes and Kubickova (2013), this study considers quality of life as a separate construct that may influence or be influenced by tourism competitiveness. Tourism receipts proxy tourism performance - corrected by visitor numbers to each studied country to adjust for scale. The performance of tourism is proxied by the percentage growth rates of tourism receipts. The ratio between tourism's total value added and the GDP approximates tourism size relative to the overall economy.

To calculate the Tourism Competitiveness Index, the three variables were normalized as follows:

$$X_{it}^{Norm} = \frac{X_{it} - X_{it}^{Min}}{X_{it}^{Max} - X_{it}^{Min}} \quad (1)$$

where

Norm = Normalized value;

Min = Minimum value;

Max = Maximal value.

The outcomes will vary between zero and one, meaning that one of the values will be equal to zero (i.e., where $X_{it} = X_{it}^{Min}$) and one will be equal to one ($X_{it} = X_{it}^{Max}$). Because of these two outcomes, the authors followed Ridderstaat and Nijkamp (2016) by adding one to the outcome:

$$X_{it}^{Norm,adjusted} = X_{it}^{Norm} + 1 \quad (2)$$

The Tourism Competitiveness Index was then calculated, using largely the same method applied by the UNDP (2010):

$$TCI_i = \sqrt[3]{X1_i^{Norm,adjusted} \cdot X2_i^{Norm,adjusted} \cdot X3_i^{Norm,adjusted}} - 1 \leftrightarrow TCI_i = \left([X1_i^{Norm,adjusted}]^{\frac{1}{3}} \cdot [X2_i^{Norm,adjusted}]^{\frac{1}{3}} \cdot [X3_i^{Norm,adjusted}]^{\frac{1}{3}} \right) - 1 \quad (3)$$

where

X1, X2, X3 = the three variables used to calculate the TCI.

The subtraction of one (1) at the end of the formula corrects for the adjustment made to the normalized values, parallel to Ridderstaat and Nijkamp (2016). The Tourism Competitiveness Index can provide a quick comparison regarding tourism performance across destinations. It also provides patterns that underlie the performance across destinations. For example, receipts, value added, and quality of life may drive best performers. Higher receipts seem to correlate with a stronger economy and a higher quality of life. Finally, the Tourism Competitiveness Index can provoke a conversation regarding policy choices and priorities, asking how two destinations with the same receipts level may have different human development levels.

The second construct, the HDI, is often used as a proxy for human development. The HDI is a composite index measure of geometric average achievements in a country based on three important dimensions of human progress, i.e., (1) a long, healthy life; (2) access to knowledge; and (3) a decent standard of living (UNDP, 2011/2016).

Applied variables

Each of the sample's ten South American countries contains 17 years of data, covering the period 1998–2014, thus maintaining balance. Table 2 describes the applied variables, including their source. ARRIVALS follows Song and Li (2008) and Song, Witt, & Li, 2009 as the most popular variable to proxy tourism demand, to counter for effects possibly affecting the analysis, the study added two

Table 2
Applied variables.

Variable	Description	Source
ARRIVALS	Total number of international visitors (actual numbers)	World Bank
DUMCRISIS_2008_2010	Dummy for the global financial and economic crisis (2008–2010)	Authors
DUMSEP11	Dummy for the terrorist attacks on September 11 and the aftermath (2001–2002)	Authors
GDP	Gross domestic product (nominal, in US\$)	World Bank/International Monetary Fund
GDPCAP	Per capita gross domestic product (nominal, in US\$)	World Bank/International Monetary Fund
GINI	Gini coefficient (in %)	United Nations
HDI	Human Development Index	World Bank
LEI	Human Development Index (life expectancy component)	World Bank and authors' calculations
II	Human Development Index (income component)	World Bank and authors' calculations
EI	Human Development Index (education component)	World Bank and authors' calculations
INFL	Inflation (in %)	World Bank/International Monetary Fund
TCI	Tourism Competitiveness Index	Authors' calculations
TVA	Tourism value added (% of nominal GDP)	World Bank
UNESCOPOP	Ratio between UNESCO heritage and population of a country	World Bank (calculations by the authors)

dummy variables. DUMCRISIS_2008_2010 contemplates the effects of the global economic and financial crisis of 2008–2010, which resulted in a travel and tourism demand contraction. The second dummy variable, DUMSEP11, considers the effect and aftermath of the September 11 terrorist attacks in New York and Washington D.C. that resulted in limited global travel, particularly from U.S. travelers.

GDP and per capita GDP are used interchangeably to represent the source countries' income, while the GINI variable proxies income distribution. Inequality is harmful to development capability and proxies government quality (Stiglitz, 2012). UNESCO heritage sites proxy destinations' attractiveness and are associated with tourism growth rates (Licciardi & Amirtahmasabi, 2012; Ribaudo & Figini, 2017). HDI is used to emphasize human development, in line with the UNDP. INFL is a variable often used in tourism demand studies (Song et al., 2009). The authors will calculate the Tourism Competitiveness Index variable (see below). UNESCOPOP includes each destination's uniqueness measurement. The main sources of the applied variables were the World Bank Open Data and the World Economic Outlook Database of the International Monetary Fund.

Cross-sectional dependence and panel unit roots

This study used a panel regression for the analysis. Pesaran's (2004) cross-sectional dependence test (CD test) was applied and tests for an error dependence among the panel's cross-sections. The independence is tested to avoid potentially biased results and substantial size distortions when applying commonly used panel unit root tests (Pesaran, 2015). If the data are correlated through the cross-sections, alternative methods of unit root testing, such as the individual cross-sectionally Augmented Dickey-Fuller test (Dickey & Fuller, 1979) and the associated cross-sectionally augmented Im, Pesaran & Shin test (Im, Pesaran, & Shin, 2003), should be used (Pesaran, 2007). Otherwise, conventional panel unit root tests are acceptable.

Estimation of relationships

The study applied mixed-effect regression models to determine the connection between tourism competitiveness and human development. These models facilitate examination of between- and within-country differences, and, thus, consider more than one factor causing random variability. These random variabilities are controlled for in the model by assuming different random intercepts for each destination. An example of between-country differences can be the inequalities among nations (e.g., Brazil is a high inequality country, while Argentina is a low inequality country). Within-country differences can, for instance, consider the distinction between urban and rural inequalities in a country. Also, the regions within each destination may display heterogeneous HDI. For example, the Federal District in Brazil has the highest HDI value of 0.839, while Alagoas has the lowest value of 0.667. Peru also reveals a similar heterogeneous regional HDI pattern (Knight & Cottrell, 2016).

The mixed-effect model serves to address the non-independence issue that may exist when answering the research questions in this study. The violation of the independence assumption may arise because the same subject (a country in the sample) provides multiple responses (explanatory variables), which reveals idiosyncratic variations due to individual differences. Moreover, explanatory variables may include similar responses even if they come from different countries causing interdependencies that violate the independence assumption.

The mixed-effect regression models applied are as follows:

$$LTCl_{it} = \alpha_0 + \sum_{m=1}^n \alpha_m X_{it}^m + \mu_i + \varepsilon_{it} \quad (4)$$

and

$$\text{LHDI}_{it} = \beta_0 + \sum_{m=1}^n \alpha_m Y_{it}^m + \tau_i + \gamma_{it} \quad (5)$$

where

LTCI = logarithm of TCI;

LHDI = logarithm of the HDI;

i = cross section (country);

t = time per cross section (1998–2014);

α_0, β_0 = intercepts;

m = cross section indicator;

X = vector of logarithm of independent variables (ARRIVALS, HDI, GDP, GDPCAP, INFL UNESCOPOP, DUMSEP11, DUMCRISIS_2008_2010);

Y = vector of logarithm of independent variables (ARRIVALS, TCI, GDP, GDPCAP, INFL UNESCOPOP, DUMSEP11, DUMCRISIS_2008_2010);

μ, τ = random effects capturing unobserved characteristics of the respective country;

ε, γ = intercepts.

In the first model, the Tourism Competitiveness Index is considered the endogenous variable, with the HDI as one of the exogenous variables. In the second model, the situation is reversed, with the HDI being the endogenous and the Tourism Competitiveness Index as one of the exogenous variables. The specification of the independent variables follows the discussion in the [Applied variables](#) section. As well-being is considered an antecedent of tourism ([Pyke et al., 2016](#)), human development in Eq. (5) is modeled using the same independent variables as tourism competitiveness in Eq. (4).

Categorizing the relationships

Using the [Ranis et al. \(2000\)](#) approach, which categorizes the relationship based on the level of development of, respectively, the tourism competitiveness and HD, will result in four possible quadrants of the relationship: virtuous destination, vicious destination, HD lopsided destination, and tourism competitiveness lopsided destination. The study estimated these four categories from the annual %-change in both tourism competitiveness and HD of each country. The outcomes are subsequently averaged for two specific periods (1998–2006 and 2007–2014), using the start year of the Global Financial and Economic Crisis (2007) as the separation criterion. The identified periods of analysis are then multiplied by the country-specific population to control for the scale effects, following [Ranis et al. \(2000\)](#). These outcomes are then used as inputs for the scatter categorization of the relationships.

The next section will discuss the five-steps of the analysis.

Empirical findings and discussion

Market concentration and competitiveness analysis

In the first step, the variables were transformed into logarithms, in part to narrow the range of variability of variables, which could make the estimation less sensitive to extreme values ([Wooldridge, 2013](#)). In the second step, market concentration analysis was performed through the HHI to dissect the tourism competition level among South American countries.

In the second step, the study estimated the tourism competitive indices for each country over the period 1998–2014. The results indicate that Colombia, Brazil, and Peru had the highest level of competitiveness, while Paraguay, Ecuador, and Venezuela showed the lowest levels among selected countries. Venezuela's competitiveness level would probably have decreased further if the study had considered the country's current socio-economic and political conditions (see [Chart 1](#)).

Regression analysis

Unit root testing

The third step applied the mixed-effect regression analysis. This analysis performed the cross-sectional dependency test to measure the impact of the selected independent variables on the Tourism Competitiveness Index. Test results show significance in all cases, indicating that the data is correlated through the cross-sections and will likely produce biased outcomes if a conventional panel unit root test is pursued (see [Table 3](#)). Two alternative unit root tests were applied to avoid bias, i.e., the PESCADF test and the CIPS test based on Im, Pesaran & Shin test ([Im et al., 2003](#)).

The alternative unit root tests, PESCADF (or CADF) and CIPS, are presented in [Table 4](#). The PESCADF test shows significance almost solely at the first difference form, while the CPIS test results indicate multiple cases where the variables could be I(0) or I(1), except for the variables LEI and LII. To determine the level of integration the authors simultaneously compared the results of both tests, summarized in the last column of [Table 4](#). The results indicate that the variables could be integrated either at the level or at the first difference form. Therefore, as the analysis coursed, the authors used the level form I(0) of the variables.

[Table 5](#) presents the results of the mixed-effect regression. The first two models follow Eq. (4), where Model 1 uses the per capita

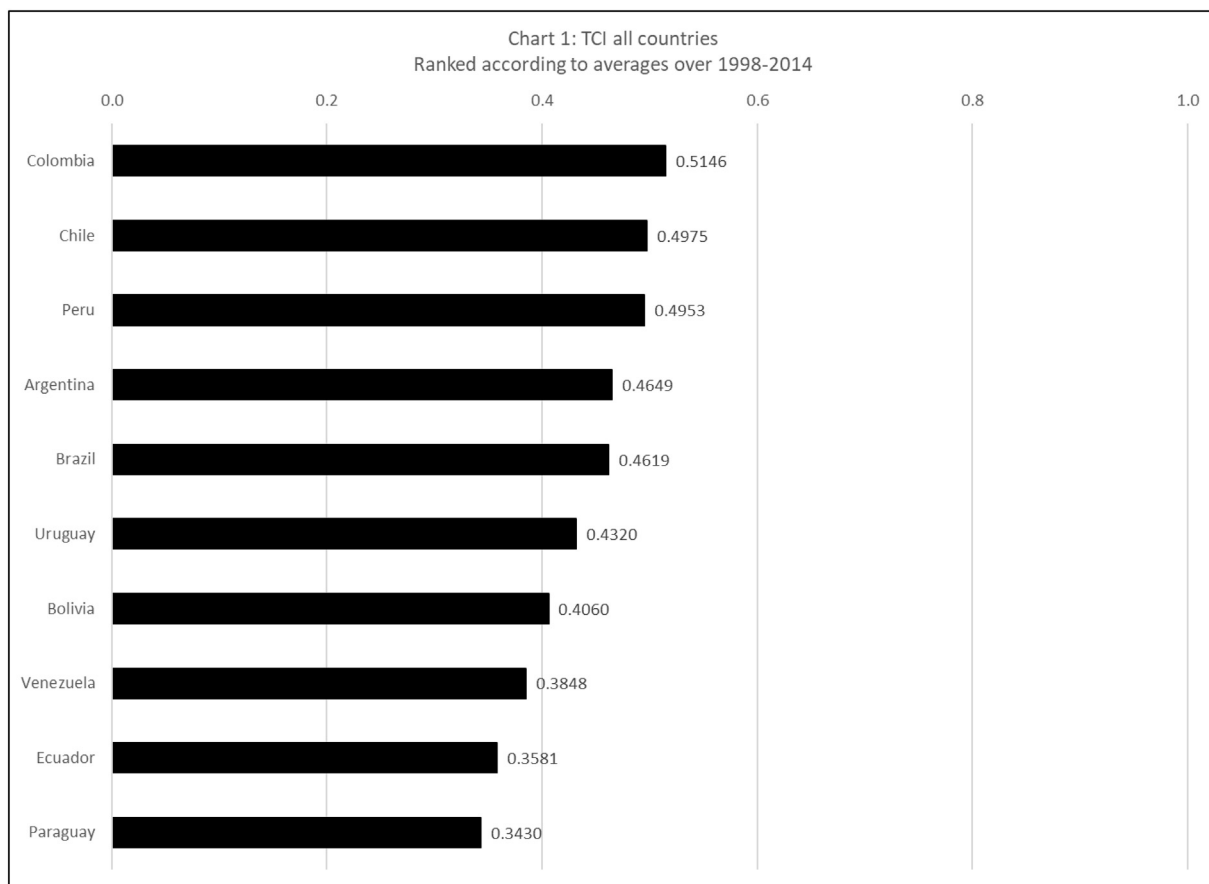


Chart 1. TCI all countries. Ranked according to average over 1998–2014.

Table 3
Test for cross-sectional dependence.

	CD test statistic
LARRIVALS	21.970***
LHDI	16.565***
LEI	27.578***
LII	17.519***
L_EI	17.992***
LGDP	25.524***
LGINI	14.575***
LGDPGAP	24.748***
LINFL	2.420**
LTCI	1.247
LTVA	3.951***
LUNESCOPOP	3.536***

Note: For the CD test: under the null hypothesis of cross-section independence, $CD \sim N(0,1)$. P-values close to zero indicate data are correlated across panel groups.

** Indicate significance at 5%.
*** Indicate significance at 1%.

GDP as an independent regressor, whereas Model 2 applies the GDP instead of the per capita version. In the first model, results indicate that HDI had a positive and statistically significant (at the 5%) influence in explaining the Tourism Competitiveness Index. The results further suggest that price has a negative and statistically significant impact on the Tourism Competitiveness Index - an indication of prudent and smarter macroeconomic policies (ECLAC, 2016). The Tourism Competitiveness Index did not seem affected by the shock effects caused by the 2001 terrorist attacks and the global economic and financial crises. Similarly, neither the GINI

Table 4
Unit root tests.

	PESCADF		CIPS		Integration
	Level	First difference	Level	First difference	
LARRIVALS	-4.543	-4.543***	-2.728***	-4.320***	I(0) or I(1)
LHDI	-1.925	-5.107***	-3.484***	-5.249***	I(0) or I(1)
LEI	-0.146	-3.285***	-3.624***	-1.744	I(0) or I(1)
LII	-3.920***	-4.840***	-1.987	-4.517***	I(0) or I(1)
L_EI	-2.387	-4.598***	-3.505***	-4.797***	I(0) or I(1)
LGDP	-2.517	-4.295***	-3.263***	-4.204***	I(0) or I(1)
LGINI	-2.507	-4.902***	-3.350***	-5.016***	I(0) or I(1)
LGDPGAP	-2.321	-4.628***	-3.209***	-4.234***	I(0) or I(1)
LINFL	-2.897**	-4.765***	-2.669***	-4.811***	I(0) or I(1)
LTCI	-1.845	-4.407***	-2.922***	-4.508***	I(0) or I(1)
LTVI	-2.216	-4.091***	-2.634***	-3.767***	I(0) or I(1)
LUNESCOPOP	-2.384	-4.452***	-2.371**	-4.416***	I(0) or I(1)

Note: For the PESCADF and CIPS tests: both tests include a constant and a trend component.

** Indicate significance at 5%.

*** Indicate significance at 1%.

coefficient nor the ratio between UNESCO heritage and the population of the reviewed countries had any significant impact on the Tourism Competitiveness Index.

In the second model, the results indicate a somewhat similar finding as in Model 1, with the exception that the effect of the Gini coefficient on the Tourism Competitiveness Index was positive and statistically significant (at 10%). The latter implies that the more inequality of income there is, the better this is for the Tourism Competitiveness Index.

To further understand the effect of HDI on the Tourism Competitiveness Index, the study investigated the effect of the individual elements of human development on tourism competitiveness. Models 3 and 4 include these results. The results in Model 3 show that only the health dimension of HDI (LEI) was statistically significant at the 5% level, together with per capita GDP (10%) and inflation (5%). With Model 4, the results indicate that only the education dimension of HDI (L_EI) was found to be statistically significant (at 10%), together with the Gini coefficient (10%) and inflation (5%).

Models 5 and 6 follow Eq. (5), again with the same distinction between per capita GDP (Model 5) and GDP (Model 6). The results indicate that Tourism Competitiveness Index did not explain HDI, either in Model 5 or in Model 6. Both per capita GDP and GDP were negative and statistically significant, implying that improvement in the real economy and real income has a negative impact on HDI. Residents' HDI seems to be affected by shock effects due to the 2001 terrorist attacks and the global economic and financial crises, as well as by the ratio between UNESCO heritage and the population of the countries in this study. The positive and significant sign of recession in 2008 seems counterintuitive. Empirical evidence suggests that South American countries were immunized from the global recession by strong macroeconomic fundamentals revealing low fiscal and current account deficits, a greater degree of exchange rate flexibility, low short-term foreign debt levels, and high international reserve levels (ECLAC, 2016). In addition, South American countries benefited from high terms of trade with China as commodity-exporting countries (Izquierdo & Talvi, 2010). These fundamentals spurred strong economic growth with significant investments in human capital, resulting in over 72 million people have exited from poverty, and nearly 94 joined the ranks of the middle class (ECLAC, 2016).

As the results, Model 5 and 6 indicated that the Tourism Competitiveness Index had no statistically significant impact on HDI, the study again decomposed human development into its three dimensions (i.e., income, health, and education). The decomposition facilitates a better understanding of how tourism affects health (life expectation), and education. Human capacity and opportunities depend on health, education, and skills (Becker, 1962). More capacity enlarges an agent's choice set (Sen, 1999). Table 5 also includes these results (health: Models 7 and 8; income: Models 9 and 10; and education: Models 11 and 12). The Tourism Competitiveness Index seems to be positive and statistically significant for the health dimension of HDI (LEI), but not for income (LII) and education (L_EI), suggesting that tourism is an important channel to improve South American life expectancy. As tourism development requires higher quality and unique products, healthier human capital is crucial for tourism's continued economic, social, and environmental benefits. For example, Chile has the second highest tourist arrivals and has the highest life expectancy and HDI value (0.847), while Bolivia has the lowest tourist arrivals and lowest life expectancy and HDI (0.674). The difference in resources (income) and physical environment (e.g., access to clean water and nutrition) between Chile and Bolivia seems relevant in explaining the difference in their HDI performance.

To assess the adequacy of the mixed effect models, the study included the intraclass correlation coefficients (ICC) to assess the reliability of the estimated models. The majority of the estimated ICC was larger than 0.9, which, according to Koo and Li (2016), indicate excellent reliability. The ICC of Model 1 and Model 4 was larger than, respectively, 0.6 and 0.7, both indicating moderate reliability. Additionally, the study also tested the adequacy of the models using the leverage versus residual squared plot to check for the validity of the model. The results indicate the absence of extensive outliers, suggesting that the estimated models were adequate (the results are available upon request).

The fourth step involved the application of the pairwise Dumitrescu Hurlin Panel Causality test, based on Dumitrescu and Hurlin

Table 5
Panel regression results.

Independent variables	Dependent variable: LTCI		Dependent variable: LTCI		Dependent variable: LHDI		Dependent variable: LEI		Dependent variable: LII		Dependent variable: L_EI	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
INTERCEPT	-2.1740	6.0256	-2.3542	4.9092	-0.8283**	-0.6311*	0.2552	-0.0261	0.8963	0.4325	-2.0180	-1.5487
LARRIVALS	0.0331	-0.0157	0.0201	-0.0128	0.0206	0.0234	0.0198*	0.0161	0.0550**	0.0528	0.0013	0.0124
LHDI	1.1673**	1.1440**										
LEI			1.8724**	-0.0054								
LII			0.9250	0.6804								
L_EI			0.2587	0.4405*								
LTCI					0.0011	0.0007	0.0075*	0.0085*	0.0010	-0.0027	-0.0137	-0.0058
LGDP		0.0191		0.0184		-0.0330***		0.0232***		0.0517***		-0.1716***
LGDP/CAP	-0.0659		-0.2150		-0.0409***		0.0233***		0.0643**		-0.2257***	
LGINI	0.3459	0.4364*	0.4739	0.3424*	0.0289	0.0487	-0.0189	-0.0172	-0.0610	-0.0899	0.1597	0.3215*
LINFL	-0.0162**	-1.7905**	-0.0157**	-1.3197**	0.0320	0.0544	0.0470*	0.0382*	-0.4102**	-0.4288**	0.3696	0.5225**
LUNESCOPOP	-0.0303	0.0124	-0.0122	0.0558	-0.0227**	-0.0272**	0.0038	0.0050	0.0315*	0.0361**	-0.0885**	-0.1187***
DUM_SEPI1	-0.0598	-0.0376	-0.0769	-0.0765	-0.0167***	-0.0150***	0.0047*	0.0047*	-0.0243	-0.0266	-0.0414	-0.0225
DUM_REC_2008	-0.0684	-0.0810	-0.0486	-0.0649	0.0371***	0.0362***	0.0022	0.0021	-0.0079	-0.0062	0.1249***	0.1130***
Intraclass correlation	0.6384	0.9998	0.9184	0.7278	0.9656	0.9667	0.9772	0.9785	0.9595	0.9636	0.9301	0.9548

Note: The regression results are based on robust standard errors considering Huber, (1967) and White, (1980).

Models 1, 3, 5, 7, 9, 11 include LGDPCAP as a proxy for income. The remaining models include LGDP as a proxy for income.

Models 1 and 2 include LHDI as a proxy for human development. Models 3 and 4 include the components of LHDI (LEI, LII, and L_EI) as proxies for human development. The dependent variable for these models is LTCI.

Models 5 and 6 include LHDI as the dependent variable.

Models 7 and 8 include LEI as the dependent variable.

Models 9 and 10 include the LII as the dependent variable.

Models 11 and 12 include L_EI as the dependent variable.

* Indicate significance at 10%.

** Indicate significance at 5%.

*** Indicate significance at 1%.

Table 6
Pairwise Dumitrescu Hurlin Panel Causality tests.

	Lag = 1	Lag = 2	Lag = 3
LTCI → LHDI	4.2835***	4.1242***	1.8721*
LHDI → LTCI	-0.5287	-0.0577	0.0701
LTCI → LLEI	2.0354**	0.0290	0.0436
LLEI → LTCI	0.0114	1.2636	0.9270
LTCI → LII	1.7277*	-0.0747	0.4663
LII → LTCI	3.4338***	1.9707**	2.1481**
LTCI → L _E EI	3.6699***	5.2038***	2.4253**
L _E EI → LTCI	0.5449	0.1310	0.9554

Note.

* Indicate significance at 1%.

** Indicate significance at 5%.

*** Indicate significance at 10%.

(2012), who proposed separate Granger causality tests for each of the cross-sections in panel data, when the latter are heterogeneous from each other. The results confirmed the significance of human development to tourism competitiveness by suggesting a one-directional relationship running from human development to tourism competitiveness. The alternative direction of tourism competitiveness to human development did not reveal causality (see Table 6).

The fifth step investigated the connection between the Tourism Competitiveness Index and HDI using the approach proposed by Ranis et al. (2000), which categorizes the relationship based on the development level of, respectively, the Tourism Competitiveness Index and HDI, resulting in four possible quadrants of the relationship (virtuous, vicious, HD-lopsided, and TC-lopsided, respectively). Virtuous destinations are those where a good HD promotes TC, which again enhances HD. Vicious destinations are characterized by poor performance in HD followed by poor TC results, which again depresses HD. In the HD-lopsided quadrant, there is strong HD development together with weak TC, whereas the TC-lopsided quadrant describes destinations with strong TC, but with weak HD. The chart reveals how destinations changed locations over time suggesting four distinct performance patterns throughout the timeline reviewed. The study considered two periods of average development of both the Tourism Competitiveness Index and the HDI for each country, i.e., 1998–2006 and 2007–2014. The study adjusted the period average of both the Tourism Competitiveness Index and HDI for each country, based on their share in the total population of all selected countries in the study. Next, the study included the calculated values of the Tourism Competitiveness Index and HDI per country in a scatterplot, approximating Ranis et al. (2000).

The scatterplot reveals four destination performance patterns (Chart 2). First, the majority of the countries are located either in the HD lopsided or vicious destination quadrants. This pattern suggests that tourism competitiveness performance has been relatively depressed in the region or that these destinations have not effectively paid much attention to tourism development. A second pattern is that few destinations have remained in one location during the reviewed time span; i.e., only three countries remained in the same quadrant - Ecuador remained in the virtuous quadrant, while Chile, Paraguay, and Uruguay remained in HD lopsided.

The third pattern showed that locations do not remain static. Rather, destinations move from one quadrant to the next, either regressing or progressing throughout time. For example, Venezuela is the only destination that regressed from being a virtuous destination during the first period (1998–2006) to become a vicious destination in the more recent period. This regressing shift suggests that the destination had become weak in human development and tourism competitiveness. Other destinations shifted locations less dramatically. For example, Argentina regressed from a virtuous destination in the first period to an HD-lopsided destination in the second, indicating erosion of its tourism competitiveness position. Bolivia and Colombia also displayed a similar pattern suggesting a tourism competitiveness regression. The last pattern revealed stability at the human development level while progressing in terms of tourism competitiveness. Brazil was the only destination in South America that remained at the same human development level while becoming stronger in tourism competitiveness in the most recent period.

Conclusions

The lesson from the tourism competitiveness literature is that evidence focuses on tourism development growth rather than the capabilities concept. This study presents an alternative framework that unifies the competitiveness theory and capabilities and anchoring the unification in the Tourism Competitiveness Theory Hypothesis. The premise of the Tourism Competitiveness Theory Hypothesis rests on a recursive relationship between tourism competitiveness and capabilities. The results suggest that human development significantly affects tourism competitiveness, while the tourism competitiveness effects on human development are only partial, specifically on the health dimension of the latter.

The findings' theoretical implications are fourfold. First, one should expect the human development side to do better at lower development levels. Second, public resource allocation choices mediate the recursive nature of the relationship between tourism competitiveness and human development. Third, the higher the public expenditures ratio allocated to human development, especially health, the higher the mutual reinforcement links between tourism competitiveness and human development. Fourth, sequencing these two constructs is critical for performance.

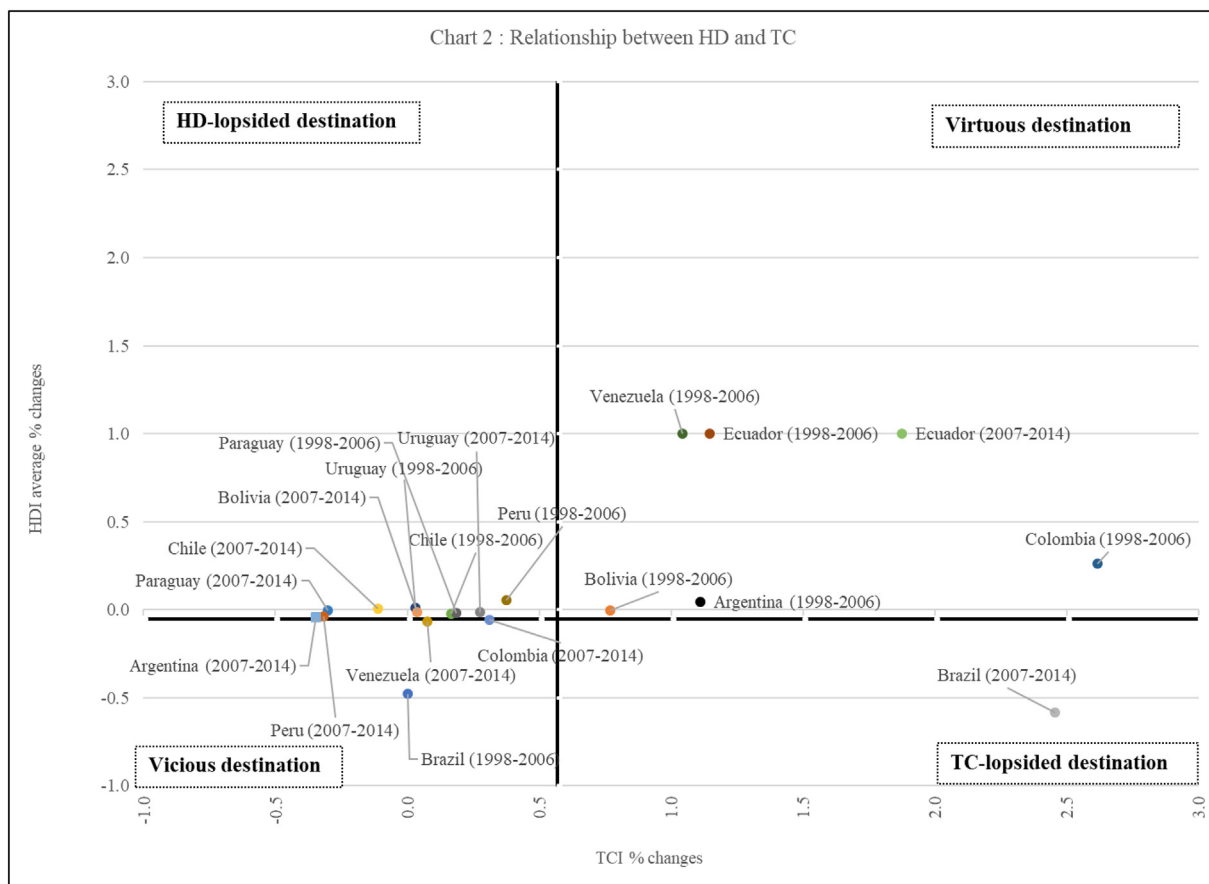


Chart 2. Relationship between HD and TC.

The case of the ten South American countries suggests that these countries should strive to deepen the connectivity between tourism and human development. Tourism growth resulting from arrivals and receipts seems to expand capabilities directly, suggesting that as average receipts increase, the population seems to have higher commands of resources (health and education), which in turn enhances tourism performance. The link is mutually reinforcing, which means that tourism competitiveness and human development evolve interdependently in an iterative manner, each influencing and being influenced by the other. This iterative connectivity is what makes the nature of the relationship between tourism competitiveness and human development dynamic. Also, this connectivity may hinge on threshold effects, which may explain Venezuela's regression. In general, South American countries should focus on three main strategies. First, destinations should promote more arrivals and higher tourism revenues to increase household incomes and government revenues. Second, the strategic focus should not be on the proportion of tourism revenues that goes into government revenues; the focus should be on using those government revenues propelled by tourism revenues. Third, the allocation choice should target human development sectors, especially health. Fourth, to sustain the reinforcement links between tourism and human development, both dimensions should be promoted simultaneously. The sequencing is important to enhance the Tourism Competitiveness Theory Hypothesis.

Finally, in this study, multiple dimensions were used to show numerous facets of dynamics between the Tourism Competitiveness Index and the HDI using panel regression, country classification, and measurement of overall competitiveness in South American countries, but limitations exist. While the use of composite indices (Tourism Competitiveness Index and HDI) is a powerful communication means, some valuable information in HDI and Tourism Competitiveness Index dynamics could have been missed. Moreover, the study only employed macroeconomic indicators to understand the Tourism Competitiveness Index and HDI relationship, controlling for between and within countries. The study did not consider the within-country lifestyle and condition differences, and the full range of factors affecting human development. For example, while the HDI purports to reveal the most important factors affecting tourism competitiveness, people weigh these factors differently. Human agency may be a relevant mediating factor in affecting destination performance. Therefore, combining the objective measures with life experience studies (subjective approach) may provide meaningful insights into the nature and structure of the relationship between tourism competitiveness and human development. That is our future research intent.

References

- Abreu-Novais, M., Ruhanen, L., & Arcodia, C. (2016). Destination competitiveness: What we know, what we know but shouldn't and what we don't know but should. *Current Issues in Tourism*, 19(6), 492–512.
- Alegre, J., & Juaneda, C. (2006). Destination loyalty: Consumers' economic behavior. *Annals of Tourism Research*, 33(3), 684–706.
- Andereck, K. L., Valentine, K. M., Knopf, R. C., & Vogt, C. A. (2005). Residents' perceptions of community tourism impacts. *Annals of Tourism Research*, 32(4), 1056–1076.
- Aqueveque, C., & Bianchi, C. (2017). Tourism destination competitiveness of Chile: A stakeholder perspective. *Tourism Planning & Development*, 14(4), 447–466.
- Assaf, A. G., & Dwyer, L. (2013). Benchmarking international tourism destinations. *Tourism Economics*, 19(6), 1233–1247.
- Ayikoru, M. (2015). Destination competitiveness challenges: A Ugandan perspective. *Tourism Management*, 50, 142–158.
- Azzopardi, E. (2011). The international competitiveness of Malta as a tourist destination. Retrieved from <http://openair.rgu.ac.uk>.
- Balaguer, J., & Cantavella-Jorda, M. (2002). Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics*, 34(7), 877–884.
- Barbe, F., Triay, M., & Haufele, C. (2016). The competitiveness of the Uruguayan rural tourism sector and its potential to attract German tourists. *Competitiveness Review*, 26(2), 166–187.
- Becker, G. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5), 9–49.
- Benito, B., Solana, J., & Lopez, P. (2014). Determinants of Spanish regions' tourism performance: A to-stage, double-bootstrap data envelopment analysis. *Tourism Economics*, 20(5), 987–1012.
- Biagi, B., Ladu, M. G., & Royuela, V. (2017). Human development and tourism specialization. Evidence from a panel of developed and developing countries. *International Journal of Tourism Research*, 19(2), 160–178.
- Blake, A., Sinclair, M. T., & Soria, J. A. C. (2006). Tourism productivity: Evidence from the United Kingdom. *Annals of Tourism Research*, 33(4), 1099–1120.
- Bristow, G. (2005). Everyone's a "winner": Problematising the discourse of regional competitiveness. *Journal of Economic Geography*, 5(3), 285–304.
- Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 21(1), 97–116.
- Clerides, S. (2012). Competition, productivity and competitiveness: Theory, evidence and agenda for Cyprus. *Cyprus Economic Policy Review*, 6(2), 81–88.
- Croes, R. (2011). Measuring and explaining competitiveness in the context of small island destinations. *Journal of Travel Research*, 50(4), 431–442.
- Croes, R. (2012). Assessing tourism development from Sen's capability approach. *Journal of Travel Research*, 51(5), 542–554.
- Croes, R., & Kubickova, M. (2013). From potential to ability to compete: Towards a performance-based tourism competitiveness index. *Journal of Destination Marketing & Management*, 2(3), 146–154.
- Croes, R., Ridderstaat, J., & van Niekerk, M. (2018). Connecting quality of life, tourism specialization, and economic growth in small island destinations: The case of Malta. *Tourism Management*, 65, 212–223.
- Crouch, G. I., & Ritchie, J. B. (1999). Tourism, competitiveness, and societal prosperity. *Journal of Business Research*, 44(3), 137–152.
- Crouch, G. I., & Ritchie, J. B. (2003). *The competitive destination: A sustainable tourism perspective*. Wallingford, UK: CABI Publishing.
- Crouch, G. I., & Ritchie, J. B. (2005). Application of the analytic hierarchy process to tourism choice and decision making. A review and illustration applied to destination competitiveness. *Tourism Analysis*, 10(1), 17–25.
- Cucculelli, M., & Goffi, G. (2016). Does sustainability enhance tourism destination competitiveness? Evidence from Italian destinations of excellence. *Journal of Cleaner Production*, 111, 370–382.
- Cvelbar, L. K., Dwyer, L., Koman, M., & Mihalic, T. (2016). Drivers of destination competitiveness in tourism. A global investigation. *Journal of Travel Research*, 55(8), 1041–1050.
- D'Hauteserre, A. M. (2000). Lessons in management destination competitiveness: The case of Foxwoods casino resort. *Tourism Management*, 21(1), 23–32.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366a), 427–431.
- Disegna, M., & Osti, L. (2016). Tourists' expenditure behavior: The influence of satisfaction and the dependence of spending categories. *Tourism Economics*, 22(1), 5–30.
- Dumitrescu, E. I., & Hurlin, C. (2012). Testing for granger non-causality in heterogeneous panels. *Economic Modelling*, 29(4), 1450–1460.
- Dwyer, L., Forsyth, P., & Rao, P. (2000). The price competitiveness of travel and tourism: A comparison of 19 destinations. *Tourism Management*, 21(1), 9–22.
- Dwyer, L., & Kim, C. (2003). Destination competitiveness: Determinants and indicators. *Current Issues in Tourism*, 6(5), 369–414.
- Dwyer, L., Mellor, R., Livaic, Z., Edwards, D., & Kim, C. (2004). Attributes of destination competitiveness: A factor analysis. *Tourism Analysis*, 9(1–2), 91–101.
- ECLAC (2016). *Social panorama in Latin America*. Santiago, Chile: United Nations.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25–32.
- Enright, M. J., & Newton, J. (2004). Tourism destination competitiveness: A quantitative approach. *Tourism Management*, 25(6), 777–788.
- Enright, M. J., & Newton, J. (2005). Determinants of tourism destination competitiveness in Asia Pacific: Comprehensiveness and universality. *Journal of Travel Research*, 43(4), 339–350.
- Gholipour, H. F., Tajaddini, R., & Nguyen, J. (2016). Happiness and inbound tourism. *Annals of Tourism*, 57, 251–253.
- Gooroochurn, N., & Sugiyarto, G. (2005). Competitiveness indicators in the travel and tourism industry. *Tourism Economics*, 11(1), 25–43.
- Gutiérrez, M. (2015). Lineamientos estratégicos para el desarrollo competitivo del sector turístico en Venezuela. *Revista de Ciencias Sociales*, 21(3).
- Hall, C. (2007). Tourism and regional competitiveness. In D. Airey, & J. Tribe (Eds.), *Developments in tourism research* (pp. 217–230). Oxford, UK: Elsevier.
- Hassan, S. S. (2000). Determinants of market competitiveness in an environmentally sustainable tourism industry. *Journal of Travel Research*, 38(3), 239–245.
- Hirschman, A. O. (1984). Against parsimony: Three easy ways of complicating of some categories of economic discourse. *The American Economic Review*, 74(2), 89–96.
- Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customers' satisfaction and willingness to pay. *Journal of Marketing*, 69(2), 84–96.
- Huber, P. (1967). The behavior of maximum likelihood estimates under nonstandard conditions. In *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability*. 1. In *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability* (pp. 221–233). Berkeley, CA: University of California Press.
- Hong, W. C. (2009). Global competitiveness measurement for the tourism sector. *Current Issues in Tourism*, 12(2), 105–132.
- Im, K., Pesaran, M., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), 53–74.
- Ivanov, S., & Webster, C. (2013). Globalization as a driver of destination competitiveness. *Annals of Tourism Research*, 43, 628–633.
- Izquierdo, A., & Talvi, E. (2010). *The aftermath of the crisis: Policy lessons and challenges ahead for Latin America and the Caribbean*. Washington, DC, United States: IADB.
- Joppe, M., & Li, X. P. (2016). Productivity measurement in tourism: The need for better tools. *Journal of Travel Research*, 55(2), 139–149.
- Knight, D. W., & Cottrell, S. P. (2016). Evaluating tourism-linked empowerment in Cuzco, Peru. *Annals of Tourism Research*, 56, 32–47.
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155–163.
- Kozak, M., & Rimmington, M. (1999). Measuring tourist destination competitiveness: Conceptual considerations and empirical findings. *International Journal of Hospitality Management*, 18(3), 273–283.
- Kubickova, M., Croes, R., & Rivera, M. (2017). Human agency shaping tourism competitiveness and quality of life. *Tourism Management Perspectives*, 22, 120–131.
- Lee, C. F., & King, B. (2009). A determination of destination competitiveness for Taiwan's hot springs tourism sector using the Delphi technique. *Journal of Vacation Marketing*, 15(3), 243–257.
- Li, G., Song, H., Cao, Z., & Wu, D. C. (2013). How competitive is Hong Kong against its competitors? An econometric study. *Tourism Management*, 36, 247–256.
- Licciardi, G., & Amirtahmasabi, R. (Eds.). (2012). *The economics of uniqueness*. Washington, DC: World Bank.
- Mazanec, J. A., & Ring, A. (2011). Tourism destination competitiveness: Second thoughts on the world economic forum reports. *Tourism Economics*, 17(4), 725–751.
- Mazanec, J. A., Wöber, K., & Zins, A. H. (2007). Tourism destination competitiveness: From definition to explanation. *Journal of Travel Research*, 46(1), 86–95.
- Melian-Gonzalez, A., & Garcia-Falcon, J. M. (2003). Competitive potential of tourism in destinations. *Annals of Tourism Research*, 30(3), 720–740.

- Mihalič, T. (2000). Environmental management of a tourism destination: A factor of tourism competitiveness. *Tourism Management*, 21(1), 65–78.
- Novais, M., Ruhanen, L., & Arcodia, C. (2018). Destination competitiveness: A phenomenographic study. *Tourism Management*, 64, 324–334.
- Pesaran, M. (2015). *Time series and panel data econometrics*. Oxford: Oxford University Press.
- Pesaran, M. H. (2004). *General diagnostic tests for cross section dependence in panels*. Cambridge working papers in economics, Vol. 0435. University of Cambridge, Faculty of Economics.
- Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22(2), 265–312.
- Pyke, S., Hartwell, H., Blake, A., & Hemingway, A. (2016). Exploring well-being as a tourist product resource. *Tourism Management*, 55, 94–105.
- Ranis, G., Stewart, F., & Ramirez, A. (2000). Economic growth and human development. *World Development*, 28(2), 197–219.
- Ribaud, G., & Figini, P. (2017). The puzzle of tourism demand at destinations hosting UNESCO world heritage sites: An analysis of tourism flows for Italy. *Journal of Travel Research*, 56(4), 521–542.
- Ridderstaat, J., Croes, R., & Nijkamp, P. (2016). The tourism development–quality of life nexus in a small island destination. *Journal of Travel Research*, 55(1), 79–94.
- Ridderstaat, J., & Nijkamp, P. (2016). Small island destinations and international tourism: Market concentration and distance vulnerabilities. In M. Ishihara, E. Hoshino, & Y. Fujita (Eds.), *Self-determinable development of small islands* (pp. 159–178). Singapore: Springer.
- Ritchie, J., & Crouch, G. (2003). The competitive destination: A sustainable tourism perspective. *Cabi*.
- Russo, A., & Richards, G. (2016). *Reinventing the local in tourism: Producing, consuming and negotiating place*. Bristol: Channel View Publications.
- Santos, G. (2015). Latin American economy and tourism. In A. Panosso, & L. Gonzaga (Eds.), *Tourism in Latin America*. Dordrecht: Springer.
- Seetaram, N., Forsyth, P., & Dwyer, L. (2016). Measuring price elasticities of demand for outbound tourism using competitiveness indices. *Annals of Tourism Research*, 56, 65–79.
- Sen, A. (1987). Freedom of choice: Concept and content. *Proceedings of Alfred Marshall lecture at the annual meetings of the European economic association* (Copenhagen, Denmark).
- Sen, A. (1993). Capability and well-being. In M. Nussbaum, & A. Sen (Eds.), *The quality of life. Wider studies in development economics* (pp. 30–33). Oxford: Clarendon Press.
- Sen, A. (1999). *Development as freedom*. New York: Anchor Books.
- Sen, A. (2000). A decade of human development. *Journal of Human Development*, 1(1), 17–23.
- Shugan, S. (2007). The Anna Karenina bias: Which variables to observe? *Marketing Science*, 26(2), 1–4.
- Smeral, E. (2003). A structural view of tourism growth. *Tourism Economics*, 9(1), 77–93.
- Smeral, E. (2007). The productivity puzzle in tourism. In P. Keller, & T. Bieger (Eds.), *Productivity in tourism: Fundamentals and concepts for achieving growth and competitiveness* (pp. 27–40). Berlin: Erich Schmidt Verlag.
- Smith, M. K., & Diekman, A. (2017). Tourism and wellbeing. *Annals of Tourism Research*, 66, 1–13.
- Smith, S. (2010). *Practical tourism research*. Oxfordshire: CABI.
- Sobral, F., Peci, A., & Souza, G. (2007). An analysis of the dynamics of the tourism industry in Brazil: Challenges and recommendations. *International Journal of Contemporary Hospitality Management*, 19(6), 507–512.
- Song, H., & Li, G. (2008). Tourism demand modelling and forecasting—A review of recent research. *Tourism Management*, 29(2), 203–220.
- Song, H., Witt, S., & Li, G. (2009). *The advanced econometrics of tourism demand*. New York: Routledge.
- Stiglitz, J. (2012). *The price of inequality*. New York: W.W. Norton.
- UNDP (2010). *Human development report 2010. The real wealth of nations: Pathways to human development*. New York: United Nations Development Programme.
- UNDP (2011). *Human development report 2011, sustainability and equity: A better future for all*. Retrieved from http://hdr.undp.org/en/media/HDR_2011_EN_Complete.pdf.
- UNDP (2016). *Human development report 2016*. Retrieved from http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf.
- UNESCO (2018). *World heritage sites*. Retrieved from <https://whc.unesco.org/en/list/>.
- Vakis, R., Rigolini, J., & Lucchetti, L. (2015). *Left behind: Chronic poverty in Latin America and the Caribbean*. International Bank for Reconstruction and Development/The World Bank.
- Veal, A. (2006). *Research methods for leisure and tourism: A practical guide*. London: Prentice-Hall.
- Webster, C., & Ivanov, S. (2014). Transforming competitiveness into economic benefits: Does tourism stimulate economic growth in more competitive destinations? *Tourism Management*, 40, 137–140.
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48(4), 817–838.
- Woo, E., Kim, H., & Uysal, M. (2015). Life satisfaction and support for tourism development. *Annals of Tourism Research*, 50, 84–97.
- Wooldridge, J. (2013). *Introductory econometrics: A modern approach*. Ohio: South-Western Cengage Learning.
- World Economic Forum (2015). *The travel and tourism competitiveness report 2015, growth through shocks*. Geneva: World Economic Forum.
- WTO (2019). *International tourism highlights. 2019 edition*. Retrieved from <https://www.e-unwto.org/doi/pdf/10.18111/9789284421152>.
- Yin, R. (2014). *Case study research: Design and methods*. California: Sage Publications.
- Zehrer, A., Smeral, E., & Hallman, K. (2016). Destination competitiveness—A comparison of subjective and objective indicators for winter sports areas. *Journal of Travel Research*, 56(1), 55–66.
- Zhang, J., & Jensen, C. (2007). Comparative advantage: Explain tourism flows. *Annals of Tourism Research*, 34(1), 223–243.
- Zúñiga-Collazos, A., & Castillo Palacio, M. (2012). *Caracterización de la formación en turismo, como uno de los pilares fundamentales de la competitividad turística en Colombia*. Vol. 13, Anuario Turismo y Sociedad 227–249.

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