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ABSTRACT

This article aims to identify the determinants that influence business tourism income and that may be controlled by economic agents and policy makers of destination countries. For the development of the empirical study, a dynamic panel model by the Generalized Method of Moments (GMM) was estimated using the Gretl 2016a software, and a sample of 122 countries for the period 2002–2013 (12 years) was used. The study reveals that, for the development of policies to stimulate the growth in the short and long-term of business tourism income, countries should develop measures that encourage capital investment in tourism and foreign direct investment.

Introduction

The World Travel and Tourism Council reveals that revenues from business tourism worldwide totaled US $ 1106.9 billion in 2015 and accounted for approximately 31% of leisure tourism revenues in the same year[1]. In accordance with this organization, the business tourism segment is experiencing substantial growth, having shown an increase of approximately 18% in its revenues in the international context, over the last ten years. The scientific community has also emphasized the multiplicity of economic, social and cultural benefits provided by this tourism segment. Thus, several studies reveal the importance of tourism to improve the image of the destination, to foster the leisure market, to mitigate the problem of seasonality associated with leisure tourism, and to intensify international trade and cultural ties between countries (Crouch & Louviere, 2004; Haven-Tang, Jones, & Webb, 2007; Bernini, 2009; Nicula & Elena, 2014, Rogerson, 2015, Fernandes & Carvalho, 2017). Moreover, it should be noted that business tourists tend to spend more money than leisure tourists, since companies involved in business meetings usually pay the attendees' expenses (Wootton & Stevens, 1995; Haven-Tang et al., 2007; Bernini, 2009,

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[1] Available at http://www.wttc.org/datagateway/.

Rogerson, 2015; Jones & Li, 2015; Fernandes & Carvalho, 2017). This reality should lead to a deeper awareness of the relevance of this tourist segment to the countries' economy, as well as to reflection by economic agents and policy makers on the business strategy that has been developed in their countries.

This article aims to contribute to the understanding of the (macro) determinants that influence business tourism revenues in countries and that may be susceptible of being controlled by their economic agents and policy makers. In order to fulfil the proposed objective, a dynamic panel model was estimated by the Generalized Method of Moments (GMM), for a sample of 122 countries worldwide, for the period from 2002 to 2013 (12 years).

Literature review

From the late 1980s to the present day, the determining factors associated with individual participation in a collective meeting by its delegates or participants, as well as factors valued by companies and associations related to the choice of location for the purpose of holding a collective business meeting, have deserved particular attention on the part of researchers in this field of science. This reality leads us to note that the scientific community has focused its attention on two particular groups of stakeholders. Firstly, on the reasons that influence an individual decision making (delegates) at a collective business meeting, and secondly, on the reasons that strictly justify the firms and associations in the choice of the country or city for the purpose of holding a meeting.

Determinants of individual participation in a meeting

Numerous studies have been developed on the understanding of the individual decision-making process in a collective business meeting, such as the work developed by Oppermann and Chon (1997), highlighting a model that results from an extensive literature review, explaining the individual decision-making process based on four categories of factors, namely personal/business factors, association/conference factors, location factors and factors linked to opportunities for intervention in other conventions or alternative occupations. Lee and Park (2002) also conducted a survey and, based on the factorial analysis of 34 attributes associated with the convention service, identified three important factors, namely the convention service system, the staff service and convention equipment, and the hotel service. In turn, Severt, Wang, Chen, and Breiter (2007) also identified five dimensions, namely the quality of the meeting program, networking and fun, educational benefits, conference convenience, and products and promotions. In addition to the study developed by Oppermann and Chon (1997), Zhang, Leung, and Qu (2007) are in agreement with the proposed model; however, the authors introduce two modifications that give rise to a broader conceptual model. The first modification is related to the localization factors that, according to the authors, can be subdivided into two subcategories – "attractiveness" and "accessibility" of the destination of the

convention. The second modification is also associated with the creation of two subcategories, within the factors linked to intervention opportunities, such as monetary costs and the costs of time or opportunity. Still further in line with the contributions of Oppermann and Chon (1997), other works have been developed (Mair & Thompson, 2009) and small new contributions have been added to the personal motivations of the participants in the meetings (Shin, 2009, Yoo & Zhao, 2010). From a different perspective and more recently, it is worth pointing out a study that highlights the importance of sustainability practices developed by convention centers. Interestingly, meeting delegates are willing to pay more if convention Centre staff has education (training) for sustainability within the convention Centre (Sox, Benjamin, Carpenter, & Strick, 2013).

Concerning the group of researchers who have focused their attention on the understanding of the reasons for choosing the venue for a meeting on the initiative of a company or association, it is worth highlighting the existence of authors who seek to understand these determinants from a purely behavioral perspective (micro), studying the specific attributes valued in the choice of venue for a meeting. In turn, other researchers follow a strictly aggregate approach (macro), seeking to identify categories of dimensions or macroeconomic variables that influence business tourism.

Determinants of choice of meeting venue

In a behavioral (micro) perspective, among the several studies developed (Chen, 2006; Haven-Tang et al., 2007; DiPietro, Breitner, Rompf, & Godlewska, 2008; Dragičević, Jovičević, Belšić, Stankov, & Bošković, 2012, Park, Wu, Shen, Morrison, & Kong, 2014), two works by three prestigious researchers are highlighted – Oppermann (1996) and Crouch and Louviere (2004).

Oppermann (1996) concluded that the most relevant attributes for the choice of meeting venues by associations are: meeting rooms, quality of hotel service, availability of rooms in the hotel, and security and cleanliness/attractiveness of the location. In turn, the less important attributes are the nightlife, the weather and the opportunities for sightseeing.

Crouch and Louviere (2004) also carried out a study, trying to find the influencing factors of the process of selection and choice of location for the purpose of conducting associative conventions and, based on the binary logistic regression method, the authors concluded that the determinants of choice are as follows: i) the proximity of the venue to the participants; ii) the percentage of participants in the convention capable of being accommodated at the convention venue; iii) the conference accommodation rates; iv) the cost of the convention venue; v) the perceived quality of food; vi) the opportunity for entertainment (shopping, sightseeing, recreation and guided tours); vii) the uniqueness of the physical aspects of the site; viii) the singularity of the social/cultural aspects of the place; ix) the quality of the exhibition space; x) the quality of the plenary room; xi) the quality of the support rooms

(sessions); and xii) the availability of diversity of audio-visual systems and equipment. It is worth noting that Crouch and Louviere (2004) carried out a study that presents new determinant factors and their characteristics are specified with greater precision, in relation to the study developed by Oppermman (1996). Since then, the subsequent studies have had little contribution in this research field (in terms of the new micro determinants).

Following an aggregate (macro) perspective, different research techniques have been employed. Starting from a purely conceptual approach, the categories of dimensions developed by Crouch and Ritchie (1998) and Bradley, Hall, and Harrison (2002) are highlighted. Using purely econometric empirical developments, we emphasize the work carried out by Var, Cesario, and Mauser (1985) and Kulendran and Witt (2003). Also, in the same analysis approach and involving exploratory studies, the work presented by Hankinson (2005) stands out.

Crouch and Ritchie (1998), oriented by a purely conceptual approach, identified the factors that influence the choice of convention venue for associations and found eight categories of dimensions: i) accessibility; ii) on-site support; iii) extra-conference opportunities; iv) accommodation equipment; v) meeting facilities; vi) information; vii) the local environment, such as the climate, the quality of the infrastructure and the hospitality of the community; and viii) other criteria, in particular linked to the risks associated with the possibility of wars, natural disasters, boycotts and other adverse events. Researchers Bradley et al. (2002) also conceptually identified eight categories of factors (without an order of relative importance): i) cultural factors (associated with popular culture, the new image of the city and the nightlife); ii) social factors (associated with violence, thefts and crimes); iii) environmental factors (associated with the aesthetic attractiveness of the sites); iv) political factors (associated with sectarian or divisive groups); v) factors of economic development/regeneration (associated with the perception of the success of recent urban regeneration projects); vi) factors specifically related to individual sites (associated with the quality of individual meeting venues); vii) factors specifically related to facilities available at the place of the meeting (namely, shops, leisure and other equipment in city centers); and viii) accessibility factors. It is interesting to see as Bradley et al. (2002) ascribe particular importance to certain groups of factors, strictly contextual, namely factors of economic development, and social and political factors. Curiously, the researchers Crouch and Ritchie (1998) almost seconded the relevance of these contextual factors.

From an econometric perspective, Var et al. (1985) tried to understand the determinants of participation in conventions in a domestic context and concluded that there are three variables that influence the level of interest: i) accessibility; ii) emissivity (income characteristics and the population of the country of origin influences the going to the convention) and iii) attractiveness. A few years later, Kulendran and Witt (2003), in a study linked to the comparison of the most modern forecast models of the demand in international business tourism, presented, as explanatory variables, the following: i) income of the origin country; ii) holiday price in the

destination country; iii) increase in the economic activity of the origin country (stimulates the demand for imports, resulting in an increasing in tourist activity abroad); iv) increase in the economic activity of the destination country (stimulates demand for exports from the origin country, leads to an increase in international tourism, for the purpose of selling products to the destination country); v) degree of openness and commercial freedom (based on protectionist devices, generates international trade opportunities and increases the volume of business tourism); and vi) the volume of business tourism can be influenced by the volume of holiday tourism (tourists become aware of business opportunities while visiting a certain country on their holidays).

Lastly, with the objective of clarifying the "key" attributes of the brand image valued by event managers, Hankinson (2005) developed an exploratory study using factorial analysis (Principal Component Analysis). Based on the research developed, the author identified two dimensions associated with the brand image of the business destination – Functional and "Ambience", consisting of eight clusters of attributes: i) physical environment (historical associations, architecture and attractiveness of the built environment); ii) economic activity (leisure tourism, industry, economic regeneration and trade); iii) equipment/facilities for business tourism (quality of convention centers, quality of hotels and the choice of equipment); iv) accessibility; v) social equipment (shops, restaurants, clubs and pubs); vi) reputation strength (notoriety of the destination and destination marketing strategies); vii) characteristics of people (character of residents and visitors); and viii) size of the destination.

According to the studies that follow an aggregate (macro) approach, either in a conceptual perspective (Crouch & Ritchie, 1998; Bradley et al., 2002) or in an empirical perspective (Var et al., 1985; Kulendran & Witt, 2003; Hankinson, 2005), it is possible to identify factors that are linked to the origin country of the tourist and factors that are linked to the destination country of the tourist. Table 1 summarizes the factors referred to and that are critical for the choice of location by associations and corporations.

Considering Figure 1, it is possible to verify that there is a multiplicity of factors that contribute to the choice of location, either for companies or for associations that are linked to the destination country. However, it is inductive that some of the factors associated with the destination country are influenced by the performance of the destinations' institutional actors, that is, there are some factors that may be controlled by the action of economic agents and political decision-makers, at the same time that there is a variety of factors that, for reasons that are natural, historical or alien to their own destiny, are beyond the capacity of being influenced by the various actors (i.e., climate, natural disasters, natural landscape, popular culture, geographic location, distance from attendants, historic buildings and monuments, among others). In fact, it is possible to identify a first typology of uncontrollable factors, such as the size of the destination, the cultural elements associated with hospitality (the nature associated with the popular culture of the residents),

Table 1. Determinants associated with the choice of location.

| Authors (year)	Title	Journal	Determinants
Var et al. (1985) Oppermann (1996)	Convention Tourism Modelling Convention Destination Images: Analysis of Association Meeting Planners' Perceptions	Tourism Management Tourism Management	Emissiveness, attractiveness and accessibility Service, cost, image, location and facilities.
Crouch and Ritchie (1998)	Convention Site Selection Research: A Review, Conceptual Model and Propositional Framework.	Journal of Convention and Exhibition Management	Accessibility, local support, extra-conference opportunities, accommodation facilities, meeting facilities, information, site environment and other criteria.
Bradley et al. (2002)	Selling Cities: Promoting New Images for Meetings Tourism.	Cities	Cultural factors, social factors, environmental factors, political factors, regeneration/economic development factors, factors specifically related to the individual venues, factors specifically related to the facilities (hotels, shops, etc.) in the venue's location and accessibility factors.
Kulendran and Witt (2003)	Forecasting the Demand for International Business Tourism	Journal of Travel Research	Origin gross domestic product (GDP), destination GDP, trade openness, destination price and holiday tourism
Crouch and Louviere (2004)	Convention Site Selection: Determinants of Destination Choice in The Australian Domestic Conventions Sector	Technical Report: CRC for Sustainable Tourism Pty Ltd	Convention venue and facilities, travel distance, cost and site accessibility, accommodation location and costs, and site environment and local assistance.
Hankinson (2005)	Destination Brand Images: A Business Tourism Perspective	Journal of Services Marketing	Physical environment, economic activity, business tourism facilities, accessibility, social facilities strength of reputation, people characteristics and perceived size of a destination.
Chen (2006)	Applying the Analytical Hierarchy Process (AHP) Approach to Convention Site Selection.	Journal of Travel Research	Meeting and accommodation facilities, costs, site environment, local support and extra conference opportunities.
Haven-Tang et al. (2007)	Critical Success Factors for Business Tourism Destination.	Journal of Travel & Tourism Marketing	Leadership, networking, branding, skills, ambassadors, infrastructure and bidding.
DiPietro et al. (2008)	An Exploratory Study of Differences among Meeting and Exhibition Planners in their Destination Selection Criteria.	Journal of Convention & Event Tourism	Accessibility by air, accessibility by road, choice of restaurant, variety of nightlife, first class hotel rooms, brand name hotels, exhibit space, desirable destination image, reputation for hosting successful events, safety and security, overall cost and perceived value for money.
Dragičević et al. (2012)	Business Tourism Destination Competitiveness: A Case of Vojvodina Province (Serbia)	Economic Research – Ekonomska Istraživanja	Dimensions: core resources and attractors, supporting factors and resources, and qualifying determinants
Park et al. (2014)	The Great Halls of China? Meeting Planners' Perceptions of Beijing as an International Convention Destination	Journal of Convention & Event Tourism	Destination characteristics, convention facilities and partnership opportunities, experience and services, government and policies, and price levels.

Source: Own elaboration
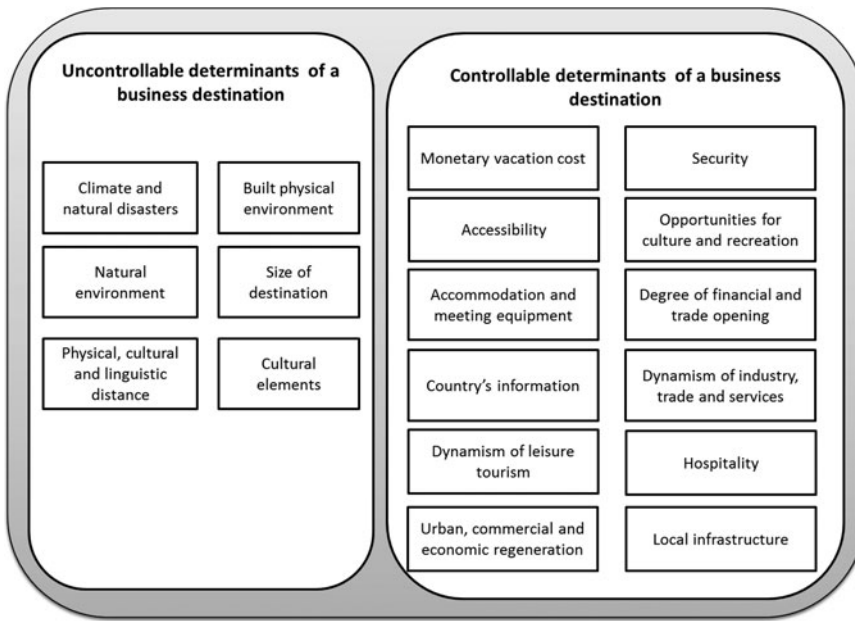
Figure 1. The controllable and uncontrollable determinants of a business destination. Source: Own elaboration.

some aspects associated with accessibility (namely physical, cultural and linguistic distance), the natural environment, the climate, the natural disasters and the built physical environment (namely, architecture, buildings and historical monuments).

In relation to the second group of (controllable) factors, it is possible to evidence the following: (i) the monetary vacation cost in the destination country (the monetary expense of transportation and access, the cost of suitable accommodation and the cost of the meeting space); (ii) the equipment for business meetings (the availability and ability of the site to provide suitable sized facilities and service quality); (iii) security (the place provides a safe political environment, a secure social environment and a weak possibility of strikes, boycotts and other possible adverse events); (iv) the dynamism of leisure tourism, industry, trade and services; (v) the infrastructure (the suitability and standard of the local infrastructure); (vi) the ability of urban, commercial and economic regeneration; (vii) hospitality (associated with qualification and preparation for tourism on the part of residents[2]); (viii) the accessibility of the site (in particular, the connections to the business destination and the infrastructure for transport); (ix) the room equipment (the number of available rooms and the perception of the service standards); (x) the opportunities for culture and recreation (museums, monuments, parks, local tours, historical sites, theatres, bars, restaurants, nightclubs, sports and activities that the tourist

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[2] The degree of hospitality of the community in general can be understood, according to King (1995), as the interpersonal relationship and service delivery skills held by residents, namely courtesy, cordiality and tact in relationships, which can be seen as skills acquired by the population. For Cukier (2002), the existence of a higher or lower level of competences of the population in the field of tourism is associated with the level of investment of countries in formal education (general and specific, in the areas of tourism and entrepreneurship).

may engage in, either as spectator or as participant); (xi) the degree of financial and trade opening of the country of tourist destination in relation to the outside world (influencing the trading relationship between countries, namely negotiations, business deals and sales, among others); (xii) and country's information (linked to the destination's marketing activities).

Thus, the purpose of this study is to understand the determinants of business tourism that are susceptible to be controlled by economic agents and policy makers, in order to be able to prescribe strategic guidelines for this segment. Thus, the reflection carried out leads to the development of the following research questions:

1) What are the determinants that influence business tourism revenues in countries and that may be susceptible to be controlled by their economic agents and policy makers?

2) What economic policies and marketing strategies can be developed by economic agents and policy makers to improve countries' revenues in the business tourism segment?

Methodology

In order to build the sample, data were collected from all countries in the world available in the databases of the World Travel and Tourism Council, Data World Bank and Worldwide Governance Indicators (Integrated into the World Bank), for the period from 2002 to 2013 (12 years). In order to homogenize the sample, countries with missing values were excluded in the reference years, and a final sample composed of data from 122 countries worldwide was made possible. For the purposes of data analysis, firstly, a panel data analysis was used (fixed effects model). After serial autocorrelation has been identified, a dynamic panel model was estimated by the Generalized Method of Moments (GMM). To proceed with the modelling and estimation of the data model to analyses, the Gretl 2016a software was used, after the construction of the data table in Microsoft Office 2010 Excel software.

Variables and sources of data

The independent variables that aim to operationalize the identified controllable factors and their data collection sources are presented below:

– For the vacation cost in the country of destination, the *cost of living* variable[3] is proposed (cf. Eilat & Einav, 2004), which will be handled from the proxy ratio – conversion factor of purchasing power parities to the market exchange rates. This ratio is the result obtained by dividing the conversion factor of purchasing power parities by the market exchange rate. The time series associated with the *proxy* variable can be obtained from the *Data World Bank* database[4];

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[3] Several authors consider that there is a high approximation between the basket purchase acquired by international tourists and the basket purchase acquired by families (Crouch, 1992; Kulendran & Witt, 2003).

[4] Available at http://data.worldbank.org/indicator

- The *government effectiveness* variable will operationalize the factor related to the opportunities for entertainment and culture resulting from public investment, hospitality associated with the qualification of the residents and the quality of public services and general infrastructure (cf. Kaufmann, Kraay, & Mastruzzi, 2010), while promoting aspects of economic activity dynamism and the visitor's accessibility[5]. The time series that allows to evaluate this variable can be directly obtained from the source *Aggregate Indicator: Government Effectiveness*, belonging to the *Worldwide Governance Indicators* of the *World Bank*[6];

- The *capital investment* variable will operationalize the opportunities for entertainment and culture resulting from private investment, investment in accommodation and meeting facilities, and connections of private companies to the destination/location of the meeting (related to the accessibility dimension)[7]. This variable is measured from the *Capital Investment* series, available from the *World Travel & Tourism Council database*. However, it should be noted that the data obtained will be subject to the incorporation of the Gross Domestic Product (GDP) deflator (cf. Mochón, 1993)[8] of the corresponding countries in order to obtain a time series with real data (from the base year 2002), from the *Economic Policy and External Debt* series provided by the *Data World Bank*;

- For safety policy and social security, the *political stability* and *rule of law*[9] variables, respectively, are proposed (cf. Kaufmann et al., 2010). These variables can be measured from the sources *Aggregate Indicator: Political Stability and Absence of Violence* and *Aggregate Indicator: Rule of Law*, integrated into the *World Bank's Worldwide Governance Indicators* database;

- The *regulatory quality* variable[10] will operationalize the ability of economic, commercial and urban regeneration of the countries promoted by public authorities (cf. Kaufmann et al., 2010) and it is possible to obtain information on this variable from the source *Aggregate Indicator: Regulatory Quality*, obtained through the *World Bank's Worldwide Governance Indicators*;

- The *leisure tourism spending* variable explains the dynamism of leisure tourism and can be measured on the basis of the spending on leisure tourism adjusted (cf. Mochón, 1993) by the GDP deflator (base year 2002), through the *Leisure Tourism Spending* series available in the *World Travel & Tourism Council* database[11] and the *Economic Policy and External Debt* series provided by the *Data World Bank*, respectively;

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[5] Accessibility associated with transport infrastructures and public transport services.

[6] Available at http://info.worldbank.org/governance/wgi/index.asp

[7] According to WTTC (2015), the capital investment account allows to measure the investment made by all sectors of the economic activity in the tourism industry, namely investment in accommodation, transport equipment and cultural, sports and entertainment equipment.

[8] As reported by Mochón (1993), the GDP deflator is the closest to the concept of general price index.

[9] In the operationalization of the Safety category, aspects related to natural hazards should be excluded, for example, earthquakes, tsunamis or hurricanes.

[10] For Kaufmann, Kraay, and Mastruzzi (2010), the regulatory quality is a variable that captures the (quality) perception of government policies and regulations that promote private sector development and, in turn, determine economic, commercial, and urban regeneration.

[11] Available at http://www.wttc.org/datagateway/

- The *gross domestic product* (GDP) variable aims to operationalize the dynamism of public and private sectors (in particular, the industry, trade and services) of the economic activity and generate added value for the tourist. This variable will be measured on the basis of the real GDP indicator (cf. Smith, 1988; Oh, 2005; Kim, Chen, & Jang, 2006), built from the GDP at constant prices (base year 2002) of the *Economic Policy and External Debt* series provided by the *Data World Bank*;

- The degree of economy openness in relation to the outside world[12] will be operationalized with the *trade openness* variable (degree of trade openness in relation to the outside world) and the *foreign direct investment* variable (degree of financial liberalization). The first variable can be measured on the basis of imports plus exports from the country of destination in relation to the GDP of the country of destination (Kulendran & Witt, 2003; Lloyd & MacLaren, 2002; Aizenman & Noy, 2006). To obtain the time series associated with this variable, we will use the source *Economic Policy and External Debt* provided by the *Data World Bank*. The second variable will be tested as the inflow of net investment by foreign investors in relation to GDP (percentage of GDP), in line with the work developed by Aizenman and Noy (2006) and Azman-Saini, Baharumshah, and Law (2010). As in the previous variable, the associated series can be obtained from the *Economic Policy and External Debt* provided by the *Data World Bank*.

Limitations on the availability of data relating to marketing activities of the business destinations make an exception in the use of all the indicators associated with the information factor of the destination country. Curiously, very few studies on international tourism demand have incorporated marketing variables as determinants of demand, efficiently, and the existence of great problems associated with the inclusion of marketing variables is recognized, considering the difficulties in obtaining relevant data, as well as in obtaining poor empirical results (Witt & Martin, 1987; Muñoz, 2006). On the other hand, as evidenced by Middleton, Fyall, Morgan, and Ranchhod (2009), there is a lack of precision in the available information, in relation to the marketing strategies developed by a destination, given that the actions taken are not limited to the activity of the tourism administrations of a country and, in most developed countries, the international marketing expenditures by tourism administrations rarely exceed 10% of total marketing expenditure. Indeed, this situation illustrates that international statistical offices are not aware of the volume of investment in destination marketing strategies, in particular, of business destinations, and that the marketing strategies carried out by tourism administrations are very thin. Thus, not all variables can be accounted for in an explanatory model, as stated by Durbarry and Sinclair (2003) and Croes and Vanegas (2005).

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[12] As claimed by Keith (2007), in international trade, there are commercial transactions (exports and imports of products and services) and financial transactions (namely income obtained in foreign countries and foreign investment). According to the author, in foreign direct investment, the investor seeks to take an active role in managing the business and maintaining long-term relationships and, therefore, participates in international meetings.

Regarding the dependent variable, we propose the *Business Tourism Spending* (BTS) variable that can be obtained from the *World Travel and Tourism Council* (WTTC) through the database available online that, according to WTTC (2015), consists of business travel expenses incurred within a country by residents and international visitors. However, it should be noted that the data obtained for this variable are subject to the incorporation of the GDP deflator (cf. Mochón, 1993) of the corresponding countries (from the base year 2002).

For a better understanding, Table 2 presents the units of measurement and data sources related to the dependent and explanatory variables.

Specification of the model and the econometric method

For the reference period from 2002 to 2013 (12 years), a model is proposed that aims to explain the determinants that can be controlled by economic agents and policy makers in the countries, using data from 122 countries (i = 1, …, 122), resulting in a set of 1,464 balanced panel data observations.

According to Baltagi (2008), there are several advantages of using this type of data. For this researcher, the panel data allow controlling individual heterogeneity, identifying and measuring non-detectable effects on time series or sectional data, building more complex models and, finally, they give more information, lower collinearity between the variables, more degrees of freedom and more efficient estimators.

Therefore, the function of the determinants of business tourism has the following form:

$$BTS_{i,t} = f\left(LTS_{i,t}, CI_{i,t}, GDP_{i,t}, FDI_{i,t}, RQ_{i,t}, RL_{i,t}, GE_{i,t}, PS_{i,t}, IEGS_{i,t}, PPP_{i,t}\right), \quad (1)$$

where the dependent variable $BTS_{i,t}$ (*Business Tourism Spending*) is the expenses in business tourism. The independent variable $CI_{i,t}$ (*Capital Investment*) is private investment in fixed capital in tourism; $LTS_{i,t}$ (*Leisure Tourism Spending*) is spending on leisure tourism; $GDP_{i,t}$ (*Gross Domestic Product*) represents the dynamism of economic activity; $FDI_{i,t}$ (*Foreign Direct Investment*) is foreign direct investment; $RQ_{i,t}$ (*Regulatory Quality*) assesses the regulatory quality of the state; $RL_{i,t}$ (*Rule of Law*) assesses criminality for theft, violence and kidnapping; $GE_{i,t}$ (*Government Effectiveness*) is a variable that evaluates the effectiveness of government; $PS_{i,t}$ (*Political Stability*) is an indicator of political stability and absence of violence; $IEGS_{i,t}$ (*Trade Openness*) is the degree of commercial openness of the country; and the variable $PPP_{i,t}$ (*Living Costs*) evaluates the cost of living in the country.

The Equation (1) presented only indicates that there is a relation between the variables under consideration. However, it is essential to specify the functional form of the model. In this study, as in most of the empirical literature on tourism modelling, the model to be estimated adopts the double-logarithmic form (2) and will be:

$$\ln BTS_{i,t} = \alpha + \beta_1 \ln LTS_{i,t} + \beta_2 \ln CI_{i,t} + \beta_3 \ln GDP_{i,t} + \beta_4 \ln FDI_{i,t} + \beta_5 \ln RQ_{i,t}$$
$$+ \beta_6 \ln RL_{i,t} + \beta_7 \ln GE_{i,t} + \beta_8 \ln PS_{i,t} + \beta_9 \ln IEGS_{i,t} + \beta_{10} \ln PPP_{i,t}$$
$$+ \mu_{i,t} \quad (2)$$

Table 2. Units of measurement associated with the variables.

Variables	Units of measurement	Data sources
Business Tourism Spending	$\frac{US\$ \ bn \ (BTTS)}{GDP \ Deflator}$, where $GDP \ Def. = \frac{GDP \ current \ US\$}{GDP \ constant \ 2002 \ US\$}$	World Travel & Tourism Council (& Data World Bank)
Living Costs	$\frac{Purchasing \ Power \ Parity}{Market \ Exchange \ Rate}$	Data World Bank
Capital Investment	$\frac{US\$ \ bn \ (Cap. \ Inv.)}{GDP \ Deflator}$, where $GDP \ Def. = \frac{GDP \ current \ US\$}{GDP \ constant \ 2002 \ US\$}$	World Travel & Tourism Council (& Data World Bank)
Political Stability	The indicator is measured in units ranging from about –2.5 to 2.5, with higher values corresponding to better outcomes	Worldwide Governance Indicators provided by the World Bank
Rule of Law	The indicator is measured in units ranging from about –2.5 to 2.5, with higher values corresponding to better outcomes	Worldwide Governance Indicators provided by the World Bank
GDP	GDP 2002 constant US$	Data World Bank
Regulatory Quality	The indicator is measured in units ranging from about –2.5 to 2.5, with higher values corresponding to better outcomes	Worldwide Governance Indicators provided by the World Bank
Government Effectiveness	The indicator is measured in units ranging from about –2.5 to 2.5, with higher values corresponding to better outcomes	Worldwide Governance Indicators provided by the World Bank
Leisure Tourism Spending	$\frac{US\$ \ bn \ (LTTS)}{GDP \ Deflator}$, where $GDP \ Def. = \frac{GDP \ current \ US\$}{GDP \ constant \ 2002 \ US\$}$	World Travel & Tourism Council (& Data World Bank)
Foreign Direct Investment	$FDI = \%GDP$	Data World Bank
Trade Openness	$\frac{Imports+Exports}{GDP}$	Data World Bank

Source: Own elaboration

The Breusch-Pagan Lagrange Multiplier test contradicts the null hypothesis that the least squares model is pooled; in other words, there is no panel effect, validating the alternative hypothesis of random effects. In turn, the Hausman test contradicts the null hypothesis that the random effects model is consistent, validating the alternative hypothesis of the existence of the fixed effects model. Indeed, the model to be estimated will take one of two forms: fixed effects model (Eq. 3) or random effects model (Eq. 4).

$$
\begin{aligned}
\ln BTS_{i,t} = {} & \alpha + \beta_1 \ln LTS_{i,t} + \beta_2 \ln CI_{i,t} + \beta_3 \ln GDP_{i,t} + \beta_4 \ln FDI_{i,t} + \beta_5 \ln RQ_{i,t} \\
& + \beta_6 \ln RL_{i,t} + \beta_7 \ln GE_{i,t} + \beta_8 \ln PS_{i,t} + \beta_9 \ln IEGS_{i,t} + \beta_{10} \ln PPP_{i,t} \\
& + \mu_i + \upsilon_{i,t}
\end{aligned}
\tag{3}
$$

In Eq. (3), $u_{i,t} = \mu_i + \upsilon_{i,t}$ is the fixed effects decomposition of the error term, in which μ_i is the country-specific effects. The error component $\upsilon_{i,t}$ is assumed to be serially uncorrelated with zero mean and independently distributed across countries, but heteroskedasticity across countries is allowed. On the other hand, the error component $\upsilon_{i,t}$ is serially uncorrelated with the condition $\ln BTS_{i,t}$, for $t = 1, \ldots, T$, and with the individual effects μ_i.

$$
\begin{aligned}
\ln BTS_{i,t} = {} & \alpha + \beta_1 \ln LTS_{i,t} + \beta_2 \ln CI_{i,t} + \beta_3 \ln GDP_{i,t} + \beta_4 \ln FDI_{i,t} + \beta_5 \ln RQ_{i,t} \\
& + \beta_6 \ln RL_{i,t} + \beta_7 \ln GE_{i,t} + \beta_8 \ln PS_{i,t} + \beta_9 \ln IEGS_{i,t} + \beta_{10} \ln PPP_{i,t} \\
& + \varpi_{i,t}
\end{aligned}
\tag{4}
$$

where $\varpi_{it} = a_i + \varepsilon_{it}$, is the composed error term. The individual specific error term a_i and the cross-sectional error term $\varepsilon_{i,t}$ are independently and identically distributed $IID(0, \sigma_\upsilon^2)$. Moreover, the independent variables presented ($LTS_{it}, CI_{it}, GDP_{it}, FDI_{it}, RQ_{it}, RL_{it}, GE_{it}, PS_{it}, IEGS_{it}, PPP_{it}$) are serially uncorrelated with a_i and ε_{it}, for all i and t.

Given the presence of serial autocorrelation, the regression coefficient estimates are inefficient and the standard errors are skewed. Therefore, the answer to solving this problem will be eliminating the individual effects of a simple autoregressive model, transforming all the regressors by the first difference and using the Generalized Method of Moments (GMM-DIFF). Thus, the estimation procedure to consider will be a dynamic panel model using the orthogonality conditions that exist between the lagged values of the dependent variable and the disturbances, whose structure was proposed by Arellanno and Bond (1991). This procedure will generate consistent and efficient estimators.

The dynamic model to be estimated will be:

$$
\begin{aligned}
\Delta \ln BTS_{i,t} = {} & \beta_1 \Delta \ln BTS_{i,t-1} + \beta_2 \Delta \ln LTS_{i,t} + \beta_3 \Delta \ln CI_{i,t} + \beta_4 \Delta \ln GDP_{i,t} \\
& + \beta_5 \Delta \ln FDI_{i,t} + \beta_6 \Delta \ln RQ_{i,t} + \beta_7 \Delta \ln RL_{i,t} + \beta_8 \Delta \ln GE_{i,t} \\
& + \beta_9 \Delta \ln PS_{i,t} + \beta_{10} \Delta \ln IEGS_{i,t} + \beta_{11} \Delta \ln PPP_{i,t} + \Delta \upsilon_{i,t}
\end{aligned}
\tag{5}
$$

where $i = 1, \ldots, N; t = 1, \ldots, T;\ \Delta \ln BTS_{i,t} = \ln BTS_{i,t} - \ln BTS_{i,t-1}$, and in the same way for the remaining variables. As the model assumes the double-logarithmic form, the parameters should be considered as elasticities. On the other hand, as the model is dynamic, the elasticities should be considered as short-run elasticities. To obtain long-run elasticities, it is necessary to make some changes, since in the long-run the following expression must be true: $\ln BTS_{i,t} = \ln BTS_{i,t-1}$. Thus, long-run elasticities can be obtained by dividing each of the coefficients by $(1 - \beta_1)$.

The estimate using the Arellano-Bond GMM-DIFF estimator is consistent if the lagged values of the endogenous and exogenous variables are valid instruments in the regression. This methodology assumes that there is no second order autocorrelation in the errors and the non-existence of correlation between the instruments and the error term, through the Sargan test of over-identifying restrictions. Failure to reject the null hypothesis in both tests allows us to support the model (Arellano & Bond, 1991).

The estimated dynamic model may still be subject to a 'two-step' estimation (Windmeijer, 2005). Thereby, using the parameters estimated in Equation (5), it is possible to calculate an estimate of the covariance of $v_{i,t}$ and re-estimate the parameters based on this estimate. This procedure has the dual effect of dealing with heteroskedasticity and serial correlation, besides producing estimators that are asymptotically efficient (Arellano & Bond, 1991; Blundell & Bond, 1998). However, the 'two-step' GMM estimation of finite samples tends to have skewed results. Hence, Windmeijer (2005) proposes the implementation of a correction for finite samples, allowing to consider the standard errors for the 'two-step' estimation as relatively accurate.

Empirical results

This section presents the estimation of Equation (2) by the pooled least squares method. The Breusch-Pagan Lagrange Multiplier statistical test (LM = 6342,46, $p < .001$) contradicts the null hypothesis that the least squares model is pooled and the Hausman test (H = 321,055, $p < .001$) contradicts the null hypothesis that the random effects model is consistent, validating the alternative hypothesis of the existence of the fixed effects model. Therefore, the model to be estimated should take the form of Equation (4) – Fixed effects model (Table 3).

The results show that the global significance of regression ($F = 2193,44$, $p < .001$) and the individual significance of the variables *Capital Investment* ($t = 19,4516$, $p < .001$), *Leisure Tourism Spending* ($t = 4,9754$, p-level $p < .001$) and *Foreign Direct Investment* ($t = 1,7614$, $p < .01$). It is also noted that the independent variables of the model explain about 99% of the variation of the *Business Tourism Spending* variable ($R^2 = 0,994932$). However, the Durbin-Watson test reveals the presence serial correlation of the error term (DW = 0,67445), which means that the estimates of the regression coefficients are inefficient and the standard errors are skewed. Thus, the estimation to consider will be a dynamic panel model – Generalized Method of

Table 3. Estimation results for the fixed effects (2002–2013).

Variable	Coefficient	Standard error	T Statistic	P-Value
CI	0,287	0,014	19,451	<0,00001***
LTS	0,095	0,019	4,975	<0,00001***
GE	− 0,084	0,076	− 1,105	0,269
PS	0,007	0,038	0,193	0,846
RQ	− 0,017	0,074	− 0,231	0,816
RL	0,138	0,086	1,606	0,108
FDI	0,006	0,003	1,761	0,078*
GDP	0,011	0,008	1,318	0,187
PPP	− 0,199	0,149	− 1,335	0,181
IEGS	0,009	0,009	1,084	0,278

R²: 0,995386
Adjusted R²: 0,994932
F-statistic: 2193,44 (p < 0,00001)
Durbin-Watson stat: 0,67445
No. observations: 1464

Moments (GMM-DIFF), proposed by Arelanno and Bond (1991), in order to generate consistent and efficient estimators.

Table 4 shows the estimate of the Arellano-Bond Equation (5) in 'two steps'. The results indicate that the null hypothesis of the absence of second-order autocorrelation in the errors should not be rejected (z = −1,78748, p = 0,0739), as well as verifying the inexistence of correlation between the instruments and the error term (Y^2 = 65,7282, p = 0,1316). In this way, the validity of the instruments used in the regression is confirmed. On the other hand, the Wald test results allow us to verify the joint significance of the explanatory variables (Y^2 = 114,266, p = 0,0000), the individual significance of the lagged dependent variable *Business Tourism Spending* (t = 2,8980, p < .01) and the individual significance of the independent variables *Capital Investment* (t = 2,8341, p < .01) and *Foreign Direct Investment* (t = 1,8221, p < .1).

In the interpretation of the results depicted in Table 4, it should be considered that the estimated coefficients are short-run elasticities. In fact, the estimated coefficient for the *Capital Investment* variable shows a positive sign, as expected, and a

Table 4. Estimation results for the dynamic model (2002–2013).

Variable	Coefficient	Standard error	T Statistic	P-Value
d_BTS(−1)	0,248	0,085	2,898	0,003***
d_CI	0,182	0,064	2,834	0,004***
d_LTS	0,071	0,051	1,408	0,159
d_GE	− 0,074	0,058	− 1,275	0,202
d_PS	0,044	0,030	1,464	0,143
d_RQ	0,006	0,049	0,132	0,894
d_RL	0,002	0,060	0,046	0,962
d_FDI	0,006	0,003	1,822	0,068*
d_GDP	0,001	0,012	0,149	0,881
d_PPP	0,004	0,235	0,018	0,985
d_IEGS	0,020	0,014	1,446	0,148

Autocorrelation – AR (2): z = −1,78748 (p = 0,0739)
Sargan (d.f.): Y^2 = 65,7282 (p = 0,1316)
Wald test: Y^2 = 114,266 (p = 0,0000)
No. Observations: 1220

value of elasticity (0.18), which reveals the importance of private investment in fixed tourist capital for short-term growth of the countries' business tourism revenues. The results corroborate previous empirical studies on the importance of investment in equipment for accommodation, equipment for catering and similar, entertainment and culture, and accessibility (Crouch & Ritchie, 1998; Bradley et al., 2002; Hankinson, 2005).

On the other hand, the *Foreign Direct Investment* variable also shows a positive sign in the value of its elasticity (0.006), suggesting, albeit less relevant, the need for foreign direct investment for the short-term growth of business tourism revenues. Thus, this estimated coefficient confirms the assertion of some researchers (Keith, 2007; Kulendran & Witt, 2003).

The results also reveal that the lagged dependent variable has a significant effect on the spending of business tourists. This means that 24.8% of total revenues obtained by countries (in business tourism) can be explained by the inertia of consumers, namely by the persistence of consumption habits of business tourists, and by the "word-of-mouth" effect not controlled by economic agents and policy makers of destinations, as previously mentioned by Crouch and Ritchie (1998), Hankinson (2005) and DiPietro et al. (2008).

In order to obtain the long-run elasticities of the individually significant independent variables, it will be necessary to divide the coefficient of the respective variable by $(1 - \beta_1)$. Indeed, in the long run, an increase of 1% in private investment in fixed tourist capital induces an increase of about 0,24% in revenues from the business segment. Moreover, an increase of 1% in foreign direct investment also induces an increase of approximately 0.008% of the revenues obtained in this tourism segment.

Discussion and implications

This study was motivated by the growing relevance of business tourism to the countries' economies, in a context in which the scientific community has focused its attention, above all, in understanding the determinants associated with the individual participation of delegates in business meetings and linked to the choice of location (country, city) by companies and associations, in a behavioral (or micro) perspective. Hence, less importance is ascribed to an aggregate (or macro) approach, particularly relevant for the various economic agents, destination planners and policy makers. Thus, this article aims to contribute to a complementary perspective, bringing together the micro and macro determinants that influence business tourism revenues of the countries and may be controlled by their economic agents and policy makers.

In order to increase the number of degrees of freedom, decrease the collinearity between the variables and overcome the problem of the presence of serial autocorrelation, a dynamic panel data model was estimated by the Generalized Method of Moments (GMM-DIFF), proposed by Arellano and Bond (1991), for a sample of 122 countries with data for the time period from 2002 to 2013 (12 years), allowing to obtain coefficients with more efficient estimates.

The results reveal, right away, the importance of the lagged dependent variable (0,24), suggesting that countries' business tourism revenues depend significantly on the effect of consumption habits (or loyalty) and on the references granted by tourists. Hence, the significance of this variable denounces the relevance of positive experiences obtained by tourists. Furthermore, its implication for the actors of the business destinations should be associated with the quality of service provided, particularly in meeting, accommodation, transport and leisure equipment.

The results also suggest that revenues from business tourism operationalized by the *Business Tourism Spending* variable can be boosted, in the short and long term, by private investment in fixed tourist capital and by foreign direct investment. In this way, this information is particularly important for two specific groups of actors in the destinations.

Firstly, it is decisive for economic agents, namely for companies in the tourism industry, in the sense that they should focus their investments on equipment that creates value along the tourism chain, particularly in the transport sector (for example, buses, taxis and rent-a-car), equipment for accommodation, meetings and catering (for example, hotels and restaurants) and equipment for entertainment and culture (for example, bars, nightclubs, shops, sports facilities, amusement and theme parks, theatres and museums).

Secondly, this information is of enormous relevance for policy makers (governments and local authorities), in order to increase the growth in the short and long run of business tourism revenues of the countries, which should develop policies that encourage private investment in fixed capital in the tourism industry, such as the creation of programs to support investment and licensing in the tourism industry. On the other hand, it is worth noting the importance of foreign direct investment and the necessity to create the attraction conditions for foreign investment by policy makers, such as tax and labor incentives for businesses, and the creation of programs to support the investment of foreign companies.

Lastly, it is not enough to invest in fixed tourist assets, since "word-of-mouth" plays a key role in revenues obtained by countries in business tourism. It is, then, important that the different economic agents, who create value along the tourism chain and policy makers, consider the quality of service provided in destination as a strategic factor for the success of the industry. For this, a clear understanding that loyalty and the positive references granted depend greatly on the quality of service provided and the satisfaction of business tourists is crucial. Within this framework, policy makers can develop important measures that may contribute to this, namely supporting and financing the development of professional training in the area of hotel and tourism; and establishing marketing research mechanisms (e.g. conducting surveys in hotels or congress centers) that allow a better understanding of tourists' needs and evaluate their destination satisfaction. This information should be disseminated among the various stakeholders of the tourism industry by the different media (e.g. magazines in the sector, direct mails, emails, websites and pages on the social networks of associations and regulators). Thus, economic agents

can be more prepared and have further "knowledge", so as to create value and adapt their offer to customers (tourists).

Limitations and future research

In recent years, academic scholars have focused on the micro and consumer approach in the study of business tourism, almost ignoring an aggregate or macro approach. This way, the literature review on macro determinants is strongly conditioned by existing studies.

The research carried out may be improved, namely by gathering data from other countries, given that a large number of countries, in particular associated with less developed economies, ended up having a smaller representation in this study. Hence, it is worth noting the relevance of further research using the methodology of this study, by expanding the sample size (including a higher number of countries represented in a longer period of time), which could contribute significantly to the results' improvement and to obtain new conclusions in this field of knowledge. On the other hand, the constitution of a larger sample could resolve or overcome problems caused by multicollinearity (Gujarati, 1995), identified in the annual analysis. Therefore, it would be possible to perform a sectional analysis for each obtained annual series and, thus, not only understand the evolution of short and long-term of business tourism spending, but also identify the factors determining, annually, larger or smaller values of this dependent variable.

Furthermore, the Business Tourism Spending variable does not differentiate the importance of individual business travels from collective meetings (events) associated with the Meetings, Incentives, Conferences, and Events (MICE) industry. Thus, the same (panel data) analysis for the group of the countries that receive more events, according to the International Congress and Convention Association (ICCA) data, for example, might bring another perspective, in order to provide a comparison between the view of business tourism (in the broad sense) and a specific view of the international association meetings. Moreover, it would be interesting to understand whether the results follow the same trend.

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