Determinants of tourists' length of stay in cultural destination: one-night vs longer stays

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Abstract

Purpose – This paper aims to empirically analyze tourists' length of stay in Istanbul, an important cultural destination. The objective of the study is twofold: (1) uncovering the qualitative difference between one-night visitors and longer stay visitors and (2) for those visitors staying longer at the tourism destination, investigating the key determinants of length of stay.

Design/methodology/approach – This research was carried out using a self-administered questionnaire distributed to international tourists who were about to leave the destination. To perform the analysis, we applied a two-step approach: first, we opted for classical binary logit to investigate the tourists' group membership (one-night vs longer stays); second, we applied a zero-truncated Poisson model for uncovering the drivers of length of stay for longer stay visitors.

Findings – The results confirmed the structural difference between the two visitor subgroups. Moreover, we found a positive impact of cultural attributes on tourists' length of stay.

Practical implications – The findings provide useful information for destination managers and planners, highlighting the importance of designing different tourism policies in light of tourists' heterogeneity. Moreover, the results confirmed the importance of the preservation and promotion of cultural attributes, given that these are a key factor in determining the success of a destination.

Originality/value – The importance and originality of this study are that it explores the impact of cultural/heritage attributes of the destination on tourists' length of stay. Moreover, it sheds light on the qualitative difference between short- and long-stay visitors.

Keywords Length of stay, Cultural destination, Cultural attributes, Istanbul, Two-step model

Paper type Research paper

Introduction

According to UNWTO's Yearbooks of Tourism Statistics (2020b), the majority of developed destinations are facing a decrease in the average duration of overnight stays. This tendency was confirmed by many tourism scholars (Alegre and Pou, 2006; Barros *et al.*, 2008; Gokovali *et al.*, 2007; Gössling *et al.*, 2018; Salmasi *et al.*, 2012). In Germany, for instance, the length of stay (hereafter LOS) experienced a reduction of at least 6.5%, while Austria registered a decrease of 30% (Gössling *et al.*, 2018; UNWTO, 2018, 2020a, b). According to a report on destinations' LOS issued by Mastercard (2019), Istanbul, our case study, ranked last.

Istanbul is the most populous destination in Turkey, and it is known for its great abundance of cultural and historical attractions. Despite being an important economic, cultural and historical center, Istanbul has not achieved its share of the global tourism market in terms of occupancy rates, average duration of overnight stays and tourism revenues (Gezici and Kerimoglu, 2010). According to the Ministry of Culture and Tourism (2019), between 2000 and 2018, the total number of arrivals of foreign tourists in Istanbul increased. However, compared to other destinations sharing a similar cultural and historical background, Istanbul is currently

underperforming. In addition, terrorist attacks had a negative repercussion on both total tourist arrivals and their average LOS.

Considerable research has focused on understanding LOS determinants in many tourism destinations and for different tourism segments, for instance, senior tourism (Alén *et al.*, 2014), tourists participating at golf destinations (Barros *et al.*, 2010), students' summer vacations (Thrane, 2016), cruise tourism (Chen Nijkamp, 2018), sun-and-sand destinations (Alegre and Pou, 2006) and low-cost tourism (Martinez-Garcia and Raya, 2008). Despite the fact that cultural tourism destinations play a significant part in economies across the world and attract tourists from different countries, there is limited empirical evidence and knowledge about LOS and its determinants (Brida *et al.*, 2013). This gap has motivated our research. According to the existing research, the main drivers of tourism LOS could be grouped into three classifications: socio-demographic variables, travel characteristics and attributes related to the destination itself (Rodriguez *et al.*, 2018).

Considering the differences noted in the above-mentioned literature among visitor types and geographical areas, it is crucial to shed more light on the travel behavior of tourists visiting cultural destinations. In fact, tourists' LOS determinants in this type of destinations could vary from factors described in more established destinations (Pulido-Fernandez *et al.*, 2017). Thus, it is necessary to determine the factors influencing tourists' LOS and to take them into account for effective destination planning and management of tourism policies (Rodríguez *et al.*, 2018).

Most of the existing research has focused on long-stay visitors, while little research has considered short-stay visitors. The comparison of short- and long-stay tourists deserves far more attention (Boto-García *et al.*, 2019; Rodríguez *et al.*, 2018). The expenditures made by these visitors make a remarkable contribution to the economy of almost every tourism destination (Wynen, 2013). But, despite their significant economic contribution, studies conducted on cultural tourism determinants and on ways of encouraging tourists to remain longer in destinations have hitherto received scant attention from scholars.

Furthermore, the role of trip duration on the socio-economic sustainability of cultural destinations is non-trivial. Cultural destinations, with Venice, the city of art *par excellence*, as the emblematic case, could suffer from short stays. The so-called "hit-and-run tourism" has a remarkable negative effect on destination environment and cultural attributes while leaving a weak economic footprint in the destination (Mortazavi and Cialani, 2016). In this regard, it is important to assess the composition of the tourism population, to design suitable tourism policies.

In light of the above-mentioned research gaps, the aim of the current work is twofold: (1) investigating the determinants of LOS in Istanbul, a well-known cultural tourism destination, and (2) exploring the difference between short- and long-stay tourism. To accomplish these goals, we implement an econometric analysis structured in two steps. First, we study the characteristics that increase or decrease the probability of a visitor staying only one night in Istanbul. Second, we analyze the determinants of LOS for those visitors staying at least two nights in the destination. The rationale behind this approach is that we consider the two groups (one-night vs longer-stay tourists) to be qualitatively different. Applying a unique model for all our data, we might overlook such a difference because basic models imply that all observations come from the same data generating process. This research also provides to the existing scant literature on the impact of cultural/heritage attributes of the destination on tourists' LOS and sheds light on the factors differentiating short-stay from long-stay visitors. Our results could be of interest to destination planners, guiding the design of suitable tourism strategies and planning in light of tourists' heterogeneity.

Conceptual background
Length of stay in tourism
Trip duration is a key part of tourists' decision-making process (Salmasi *et al.*, 2012). At the destination level, LOS represents a crucial driver of tourist expenditure, especially for

tourism-dependent destinations (De Menezes Moniz, 2011). LOS in tourism is defined as the number of overnights stayed at a destination (Pearce Elliott, 1983; Uysal *et al.*, 1988). Adongo *et al.* (2017) conceptualized LOS as "the duration of an individual's leisure consumption and any other services or activities whose demand is prompted by visiting the destination" (p. 66). In this sense, it can be concluded that the concept of LOS refers to the total nights spent by tourists who accommodated at least one night-time in a single destination and who used a commercial type of accommodation.

According to Eurostat (2019), LOS has been classified into two categories: short and long stays. Short stays include one- to three-night visits, whereas long stays include trips lasting four nights or more. Both types of stays produce direct, indirect and induced economic effects in the destination. However, concerning the relationship between trip duration and tourists' expenditure, opinions (and results) differ. Some scholars argue that when tourists stay longer, this duration positively impacts their overall expenditure (Alegre and Pou, 2006; Downward and Lumsdon, 2000; Machado, 2010; Peypoch *et al.*, 2012), which, in turn, generates income and jobs for residents (Archer and Shea, 1975). Other scholars have highlighted that shorter stays could be associated with higher daily expenditures (Thrane and Farstad, 2011, 2012).

The determinants of length of stay in destination
LOS is regarded as a pivotal issue for destination managers and planners. Thus, destination guiders should consider tourists' LOS and its determinants (Zarei and Mahmoodi Pachal, 2019). Various tourism academics have endeavored to explore and examine the factors that impact LOS, to help destination planners and contribute to such relevant stream of literature (Alegre and Pou, 2006; Alegre *et al.*, 2011; Alén *et al.*, 2014; Gokovali *et al.*, 2007). In these studies, it was concluded that results are often destination-specific and, to ensure external validity, should be tested on various tourist segments. A flourishing body of literature has sought to understand LOS determinants and has classified such determinants into different categories (Alén *et al.*, 2014; Rodríguez *et al.*, 2018; Scholtz *et al.*, 2015). For the purpose of the current study, we suggest three categories: socio-economic variables, travel characteristics and destination attributes. Table 1 includes a systematic review of the most recent and relevant papers in this field of research.

Among the socio-economic variables, age has been widely used to explain tourists' LOS at a given destination (Alén *et al.*, 2014; De Menezes and Moniz, 2011; Martinez-Garcia and Raya, 2008; Fleischer and Pizam, 2002; Ting *et al.*, 2017). Research shows that "the greater the age, the longer the stay at the destination" (Alén *et al.*, 2014, p. 27). Travel limitations experienced by senior tourists due to their age would lead them to visit a certain destination and to stay there longer. This segment market provides benefits to tourism destinations, especially during low season (Salmasi *et al.*, 2012), helping to curb the negative effects of seasonality. Visitors' gender is another determinant largely used in this stream of research (Alén *et al.*, 2014; De Menezes and Moniz, 2011; Machado, 2010; Ting *et al.*, 2017; Wang *et al.*, 2008). However, the results are controversial.

The annual income of tourists also is a determinant of LOS (Alegre and Pou, 2006; Fleischer and Pizam, 2002; García-Sánchez *et al.*, 2013; Gokovali *et al.*, 2007; Kruger and Saayman, 2014; Peypoch *et al.*, 2012; Ting *et al.*, 2017; Wang *et al.*, 2012). Previous studies suggest a positive relationship between income and trip duration. Other socio-economic variables are included in existing studies, such as occupation (Alegre *et al.*, 2011; De Menezes and Moniz, 2011; Martinez-Garcia and Raya, 2008), nationality (Alegre *et al.*, 2011; Gokovali *et al.*, 2007; Martinez-Garcia and Raya, 2008), marital status (Menezes *et al.*, 2008; Soler *et al.*, 2018) and education level (García-Sánchez *et al.*, 2013; Machado, 2010; Ting *et al.*, 2017).

The second group of LOS determinants includes travel characteristics. Within these determinants, we mention the type of trip (e.g. business or leisure), the accommodation type and the mode of transport (Alén *et al.*, 2014; Soler *et al.*, 2018; Santos *et al.*, 2015). According to

The author (s)	Year	Destination/tourist segment	Methodology	Empirical results: significant determinants on LOS
Alegre and Pou	2006	Balearic Islands	Logit model	Age, labor status, nationality, accommodation, type of board, visit frequency, climate, size of party, daily price of vacation and overall holiday expenditure
Alegre, Mateo and Pou	2011	Balearic Islands	Truncated Poisson model	Country of origin, type of accommodation, the price per day, nationality and repeat visitation rate
Thrane and Farstad	2012	Norway/International Summer Visitors	OLS and survival model	International visitors' age, spending patterns and other trip-related characteristics
Wang, Little and DelHomme-Little	2012	Dalian	Survival model	Visit frequency, travel distance, level of tourist income, education level and age
Alén, Nicolau, Losada and Domínguez	2014	Spain	Negative binomial model	Age, economic status, amount of time, purpose of the trip, climate, type of accommodation, mode of travel, travel type and activities
Brida, Meleddu and Pulina	2013	South Tyrol Museum of Archaeology in Bolzano/Cultural tourists	Truncated negative binomial model	Nationality, age, employment, income and trip costs
Ferrer-Rosell, Martínez-Garcia and Coenders	2014	Spain/inbound tourists	Ordered logit model	Age, total cost of trip and accommodation type
Mortazavi and Cialani	2016	Venice	Zero-truncated negative binomial and OLS	Age, returning directly to the country of residence and the summer season
Ting, Lin, Huang and Yang	2017	Tainan	Survival model	Travel motivation, human relationship, quality and modernization, variety of sightseeing spots, residence area and age
Wang, Fong, Law and Fang	2018	Macau/Gaming tourists	Survival model	Destination-based trip characteristics of repetition, information source, transportation mode, and destination status
Jacobsen, Gössling, Dybedal and Skogheim	2018	Norway	Binary regression analysis	Own vehicle of tourists, visit purpose
Rodriguez, Martinez-Roget and Gonzalez-Murias	2018	Santiago de Compostela/Tourists and same-day visitors	Heckman models	Age, occupation, income, motivation, season, distance, repeat rate, organization of the trip and destination attributes
Bavik, Correia and Kozak	2020	Macau	Poisson regression model	Availability of time, package tour, reservation time, companion, repeat rate, spending, recommendation and destination attributes

Table 1.
Review of the studies
on visitors' LOS

Soler *et al.* (2018), tourism accommodation is key when choosing to stay at a particular destination. Tourists who stay with their relatives, friends or in a shared home or flat stay longer at the destination (Alén *et al.*, 2014; Santos *et al.*, 2015), whereas those who stay in hotels have shorter stays. This result was also found in Martinez-Garcia and Raya (2008) and Salmasi *et al.* (2012). The type of travel (e.g. individual as opposed to organized package tours) also impacts LOS (Patterson, 2006). In the organized package tour, LOS is determined beforehand, and this duration cannot be flexible (Sheldon and Mak, 1987), while an individual tour is prepared by the tourists themselves, and thus, LOS, type of accommodation and expenditure of the trip could be changed during the trip (Hyde and Lawson, 2003). It can, therefore, be concluded that tourists participating in an organized package might stay for a shorter time than those on individual tours (Alén *et al.*, 2014; Bai *et al.*, 2001). The type of travel party also determines LOS; tourists traveling with their family or friends tend to stay for a shorter time compared to people traveling alone (Alegre and Pou, 2006).

Among the travel characteristics, we can also include the frequency of visits. Alegre *et al.* (2011) concluded that the frequency of previous visits to the destination determines tourists' duration. Chiou and Hsieh (2020) also highlighted that the sequence of visitation is a significant driver of tourists' LOS. First-timers are more likely to stay for a shorter period, whereas repeaters stay longer at the destination. Similarly, Bavik *et al.* (2020), De Menezes and Moniz (2011) and Gokovali *et al.* (2007) found that repeat visitation rates increase the likelihood of longer stays.

The third group of determinants includes destination characteristics. In the first place, the distinctive attributes of tourism destinations affect whether or not tourists will decide to visit the destination (Atsiz, 2020). Secondly, the facilities at a given destination (wine, casinos, nature) affect LOS (Barros and Machado, 2010). The role played by attributes and features is confirmed by Alegre and Pou (2006), Barros *et al.* (2010) and Nicolau and Más (2005). Destinations' attributes impact the overall destination satisfaction during tourists' stays (Gokovali *et al.*, 2007; Alén *et al.*, 2014; Peypoch *et al.*, 2012; Yang *et al.*, 2011). In a study by Alén *et al.* (2014), 11 destination attributes were considered. These attributes include cleaning and hygiene, security, climate, total expenditure of visit, events and attractions, transportation amenities, commercial regions, medical coverage, historical places, natural surroundings and remoteness. Furthermore, in a recent study by Bavik *et al.* (2020), the authors found that destination attributes have a significant effect on trip duration.

Tourists belonging to the "cultural segment" might be especially sensitive to cultural and heritage attributes, which boosts tourists' satisfaction within the destination (Huh and Uysal, 2004). Therefore, these attributes contribute to building up the attractiveness of a tourism destination and, as a result, play a pivotal role in its long-term success (Kim *et al.*, 2007).

The importance of cultural tourism
Cultural tourism destinations are considered some of the world's most important and fastest-growing places that attract international tourists seeking to experience cultural elements on-site (Cetin and Bilgihan, 2016). Values (tangible and intangible assets of any culture) used in cultural tourism play a major role in promoting the destination and improving its attractiveness and competitiveness with other destinations (UNWTO, 2018). Cultural values in the destination are also a fundamental component of economic recovery; local stakeholders should work toward the promotion of destinations' cultural capital for attracting potential tourists who will stay longer and spend more money in the destination (Alzua *et al.*, 1998). The cultural background of any destination affects the destination choice (Seddighi *et al.*, 2001) and trip duration (Atsiz, 2020). In spite of the significance of cultural tourism, there is a scarcity of literature that has been devoted to the study of LOS in such destinations.

Cultural destination and the effect of cultural attributes on the length of stay
Cultural attributes and tourism have always been inseparably interrelated; cultural diversity is a key driver motivating tourists' movements (Richards, 2018). Furthermore, cultural attributes affect the repeat visitation of cultural tourists (Kastenholz *et al.*, 2013). Therefore, developing cultural destinations, such as Istanbul, is a key task of policymakers and requires a well-designed tourism policy (Haigh, 2020).

A cultural destination, as a travel experience area, is defined as a place with cultural attractions such as history, architecture, heritage values, cultural events, foods and art that attract travelers. To achieve a sustainable positioning, cultural destinations might leverage their unique attributes and characteristics. In this sense, the destination heritage is an asset that defines the positioning of a given territory and attracts actors and resources (De Carlo and Dublini, 2010).

In cultural destinations, tourists experience a wide range of tangible and intangible cultural attractions/products. Such endowment is related to a set of "distinctive material, intellectual, spiritual, and emotional features of a society, which encompass arts and architecture, historical and cultural heritage, culinary heritage, literature, music, creative industries, and the living cultures with their lifestyles, value systems, beliefs, and traditions" (UNWTO, 2020a, b). These attractions play a key role in the success of the destination, in the stay duration of tourists at the destination (Atsiz, 2020), and, in turn, in the expansion of the destination economy (Akova and Atsiz, 2019).

Although cultural attributes are pivotal elements for tourism demand, they are mainly unexplored in LOS literature. Gokovali *et al.* (2007) found that the attractiveness of the cultural environment positively affects the LOS. Peypoch *et al.* (2012) examined the LOS of tourists in Madagascar, and only one determinant about a cultural attribute (gastronomy) was tested, displaying a negative effect on LOS. By contrast, Boto-García *et al.* (2019) found that gastronomy increases trip duration. Ferrer-Rosell *et al.* (2014) found that tourists coming for cultural visits and participating in cultural events tend to spend more days in the destination.

Data and method
Research setting
With great potential in terms of cultural tourism, Turkey's largest city (Turkish Statistical Institute, 2020), Istanbul, has been chosen as a research area. UNESCO has registered Istanbul on the World Heritage Sites List since 1985 (UNESCO, 2019). Thanks to its rich tangible and intangible beauties, Istanbul has been the location of many different cultures and civilizations, housing various ethnic groups, religions and languages (Istanbul Provincial Directorate of Culture and Tourism, 2020). Moreover, in 2010, it was selected as the European Capital of Culture; this helped the promotion of the city as an important cultural tourism destination (Çançat, 2010). Nevertheless, the average stay of tourists in the city is still quite short.

Research instrument
Based on a literature review regarding LOS determinants, a survey instrument was developed for this study. A self-administered questionnaire was conducted at Ataturk Airport between March 10 and 16, 2019, to tourists who had spent at least one night in Istanbul. The questionnaire consisted of questions covering a range of socio-economic characteristics, travel characteristics and attributes related to destination. Furthermore, given the purpose of the study, the cultural/heritage attributes scale from Huh and Uysal (2004) was used.

Sampling
We opted for a convenience sampling method, which is a specific type of non-probability sampling technique, to collect the field data at the destination. We collected 414 useable

questionnaires, which ensure 95% confidence and at least 5% precision. According to Cochran's formula (used for large populations), the minimum sample required for such standards is 384. This is assuming that the probability that the visitor is a short-stay visitor is 50%. Decreasing this percentage makes the sample size requirement even less strict.

Dependent variables
In this section, we introduce the set of dependent variables that will be used in our econometric model. Table 2 includes the descriptive statistics of the vector of random variable X_i, used to estimate the econometric model.

In keeping with what is discussed in the "conceptual framework" section, we divide the set of variables into three subgroups. The first subgroup contains the socio-demographic (socio-economic) characteristics of the visitor, the second group includes the characteristics of the trip and the last group concerns those variables related to the tourists' perception of the cultural attributes of the tourism destination.

The first group includes *single,* a dummy variable assuming the value one when the visitor is not married (otherwise the value is zero). *Senior* is a dummy variable containing information about the age of the visitors; it assumes the value one when the age is greater than or equal to 65 (zero otherwise). *University_degree* is a dummy variable assuming the value of one if the visitor has a university degree (zero otherwise).

The second group includes a set of dummy variables for the accommodation type (*hotel high; hotel medium; hotel low; apartment*) with *hotel high* as the reference category. *Hotel high* includes five-star hotels, four-star hotels and boutique hotels; *hotel medium* includes three-star hotels and guest houses; *hotel low* includes two-star hotels, one-star hotels and hostels; and *apartment* includes Airbnb properties and visiting friends and relatives (VFR) accommodation. The dummy *first visit* is equal to one if the visitor declared this trip to be his/her first visit to Istanbul (zero otherwise), while the variable *previous length* is a continuous variable expressing the LOS of the last previous visit (to Istanbul). *Beforeincutural* is equal to one when the visitors claimed to have visited other cultural tourism destinations (zero otherwise). Finally, we created a set of dummy variables for the purpose of the trip (*leisure; vfr; business; wellness shopping*), with leisure as the excluded category. *Leisure* includes trips for sightseeing, generic travel, entertainment, sportive activities and cultural activities.

The last group includes those variables related to the visitors' perception of Istanbul's attributes as a tourism destination. *Intangible attributes* has been created, aggregating the answers to questions about traditional scenery (42), arts (43), atmosphere (46), hospitality (31)

Variable	Mean	SD	Min	Max
Accommodation	1.948	1.948	1	4
High_education	0.685		0	1
Single	0.576		0	1
Senior	0.0121		0	1
Male	0.572		0	1
Previous_length	1.745	1.745	0	5
First_visit	0.488		0	1
Beforeincultural	0.732		0	1
Intangible_attributes	20.15	20.15	9	25
Historical_attributes	19.83	19.83	6	25
Events_gastronomy	14.17	14.17	5	20
Cultural_attributes	11.12	11.12	3	15
Purpose	1.818	1.818	1	4

Table 2.
Descriptive statistics of independent variables

and authenticity (32). *Events gastronomy* has been created, aggregating the answers to questions about gastronomy (28), theme parks (35), festivals/events (36) and food (37). *Historical attributes* is the aggregation of places of historical/artistic interest (26), religious places (33), architecture (41), historic buildings (52) and monuments (53). *Cultural attributes* contains the answers to questions about tangible culture such as museums (49), galleries (50) and cultural villages (51).

Methodology

Studies investigating LOS determinants have applied a variety of methods. For instance, they have implemented a probit or Tobit model (Ferrer-Rosell *et al.*, 2014; Fleischer and Pizam, 2002; Jacobsen *et al.*, 2018), survival analysis (Gokovali *et al.*, 2007; Machado, 2010; Ting *et al.*, 2017), count models (Alegre *et al.*, 2011), ordinary least squares (García-Sánchez *et al.*, 2013) and Heckman models (Boto-Garcia *et al.*, 2019; Rodriguez *et al.*, 2018).

The LOS in a tourism destination could be described as a Poisson process or a negative binomial one, this latter being used in the presence of overdispersion. As was previously mentioned, besides traditional count models, several studies applied "time-to-event" analysis (often referred to as "survival analysis") when dealing with the study of the determinants of tourism LOS. However, we dismissed the use of this type of analysis, in light of its potential limits. An important critique of the adoption of survival analysis concerns the so-called hazard rate, i.e. the probability that the observation (in our case, the tourist) experiences the event at time t (in our case, he/she decides to leave the destination) conditional upon the fact that he or she has not experienced it until time t (he/she has stayed in the destination until time t). This way of interpreting the LOS might not be realistic, as argued by Thrane (2015), as tourists tend to decide in advance the length of their trip, which, also requires booking accommodation and transport. In this regard, Thrane (2016) studied the difference in LOS of students on summer vacation regarding whether they decided on their return date before the trip ("pre-fixed returners") or along the way ("open returners"). Their results suggest that the decision about how long to stay in a tourism destination tends to be made in advance. Against this background, we decided to opt for count modeling.

As noted in the "conceptual framework" section, an important concern that has so far obtained scarce attention in academic studies is the role of short-stay visitors. In this regard, one caveat is in order. According to the UNWTO definition, same-day trippers are visitors who do not spend the night in a tourism accommodation. Unlike in Boto-Garcia *et al.* (2019), in our study, all the participants stayed at least one night in Istanbul, and therefore cannot be classified as pure "same-day trippers." We make a distinction between two subgroups of tourists: (1) short-stay tourists, who stayed only one night in Istanbul; and (2) long-stay tourists, who spent at least two nights in the destination. Despite the fact that short-term visitors are not fully comparable to same day-trippers, we still consider people staying only one night in the destination to be qualitatively different from those staying longer. This assumption supports and justifies the relevance of our work. Figure 1 displays the distribution of our dependent variable (LOS) where about 15% of tourists stayed only one night.

Given the purpose of the study, adopting a pure count model, we might overlook such a qualitative difference. In fact, pure count models assume that both groups come from the same data generating process. By contrast, as previously mentioned, we consider that LOS = 1 is observed due to some specific structure in the data. Building upon Boto-Garcia *et al.* (2019), we implemented a two-step approach. First, we investigate the determinants of one-night visitors using a logit model; second, we study the drivers of LOS, when LOS > 1. For the second step, we applied a truncated Poisson model because we do not face a severe overdispersion (mean = 4.50; variance = 6.51) and because LOS cannot be equal to zero because all tourists took the trip.
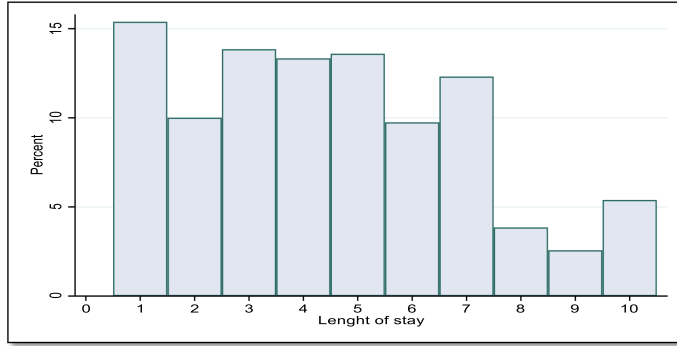
Considering Y_i {1, 2, 3 ... N} to be the discrete dependent variable (the LOS of tourists in Istanbul), X_i a set of explanatory variables and βs a set of unknown parameters for the two stages ($s = 1, 2$), our model considers two cases: (1) $Y_i = 1$, one-night visitors (or short-stay visitors); and (2) $Y_i > 1$, tourists (or long-stay visitors). $P1(Y_i = 1; \beta1 | X_i)$ is the probability that the visitor is a one-night visitor, while $1 - P1(Y_i = 1; \beta1 | X_i)$ is the probability that tourists stay longer ($Y_i > 1$). $P2 (Y_i; \beta2 | Y_i > 1, X_i)$ is the distribution for $Y_i > 1$, truncated at one. The log-likelihood for N i.d.d. observations is the sum of two log-likelihoods, one for same-day visitors ($L(\beta1)$), and one for longer stays ($L(\beta2)$).

Stage 1:

$$L(\beta1) = \sum_{n=1}^{N} (\ Y_i = 1)[\log(\ P1(\ Y_i; = 1;\ \beta1 | \ X_i)] + (\ Y_i; > 1)(\ Y_i; > 1;\ \beta1 | \ X_i)]$$

Stage 2:

$$L(\beta2) = \sum_{n=1}^{N} (\ Y_i > 1)([\log P2(Y_i;\ \beta2 | \ Y_i > 1, X_i)])$$

We assume that the first stage follows a logistic regression, while the second stage follows a zero-truncated Poisson distribution. The set of variables is used in both stages of the model, but they have different coefficients βs.

Results

Table 3 includes the results of the estimated two-stage model. The first column of Table 3 includes the estimates of a binary model, where we investigate the characteristics that increase or decrease the likelihood that the tourist is a one-night visitor. As the magnitude of the coefficients cannot be directly interpreted, we have computed the average marginal effect for a unit increase in the continuous regressors (or for dummy = 1 in case of discrete regressors).

The second column of Table 3 includes the estimates of the count model, the zero-truncated Poisson model, which studies the effect of the regressors on the intensity of the dependent variable (for those visitors staying at least two nights). As the coefficient should be interpreted as a percentage increase (or decrease) of LOS, we computed the average marginal effect, which allowed us to interpret the results in terms of days (the unit of measure of our dependent variable).

According to our results, visitors with a university degree are about 11% less likely to be one-day visitors. Our results suggest that people staying one night in Istanbul are more likely

	(1) LOS = 1	(2) LOS > 1
2.Hotel_medium	0.633 [1.42]	−0.153** [−2.10]
3.Hotel_low	0.156 [0.22]	−0.290** [−2.17]
4.Apartment	0.239 [0.45]	−0.0922 [−1.19]
University_degree	0.999*** [−2.61]	−0.00581 [−0.09]
Single	0.347 [0.82]	−0.0415 [−0.70]
Senior	1.458 [1.14]	−0.0245 [−0.11]
First_visit	1.811*** [−2.90]	0.527*** [4.73]
Previous_lenght	0.815*** [−3.56]	0.208*** [7.34]
Beforeincultural	−0.388 [−0.97]	−0.138** [−2.14]
Intangible_attributes	0.0864 [1.08]	−0.0316*** [−2.76]
Events_gastronomy	0.0626 [0.84]	−0.00953 [−0.80]
Historical_attributes	−0.0860 [−1.29]	0.0250** [2.37]
Cultural_attributes	−0.0671 [−0.75]	0.0373*** [2.69]
2.VFR_	−1.520 [−1.31]	0.130 [1.25]
3.BUSINESS_	0.989** [2.30]	−0.230*** [−2.65]
4.Wellness_shopping	0 [.]	0.296*** [3.33]
_cons	0.232 [0.16]	0.937*** [4.09]

Note(s): *, **, *** are the significance levels at 90, 95 and 99 %, respectively. They define the strength of evidence in probabilistic terms
t-statistics in brackets

Table 3.
Two stage
econometric model

to be repeat visitors: tourists who declared the trip to be their first visit are about 20% less likely to stay only one night in the destination. In addition, the LOS of past trips, for those who are repeaters, is negatively related to one-night group membership; every extra night decreases the probability by about 9%. Finally, compared to those visiting Istanbul mainly for leisure purposes (baseline), tourists visiting friends and relatives are less likely to be one-night visitors (about 10%), while business travelers are more likely (about 14%) to be part of the one-night group. Although only a few of the variables have a statistically significant effect on the probability of being "one-day visitors," the model performs quite well by correctly classifying 85.25% of observations.

Concerning the continuous part of the model (column 2 of Table 3), LOS is strongly related to several determinants, including the type of accommodation used, the destination attributes and travel characteristics. In our study, when compared to tourists staying at high-class accommodations (baseline), tourists staying in medium- and low-class accommodations register shorter stays (respectively −0.67 days and −1.20 days). This is equivalent to saying that hotel quality (proxied by the star rating) is positively related to LOS. The present finding is not in line with some of the previous studies looking at the type of accommodation and LOS (Alen *et al.*, 2014; Martínez-García and Raya, 2008; Salmasi *et al.*, 2012; Soler *et al.*, 2018). However, Alegre and Pou (2006) indicated that higher-quality hotels are associated with longer stays in a single destination than are lower-quality hotels.

Concerning repeating behaviors, we examined the repeat visitation rate for first-timers and repeaters (two or more visits). According to our results, long-stay tourists visiting Istanbul for the first time stay on average 2.3 days longer. In addition, repeat visitors' past LOS is positively related to their current LOS (+0.90 days). This result seems to be consistent with other research that found previous visits to increase LOS (Alegre *et al.*, 2011; Barros and Machado, 2010; Bavik *et al.*, 2020; De Menezes and Moniz, 2011; Gokovali *et al.*, 2007; Menezes *et al.*, 2008).

Our results suggest that tourists who are used to cultural trips tend to stay for a relatively shorter length of time (−0.33 days) compared to tourists who are "first-time" cultural tourists. It can be inferred from this finding that more experienced tourists tend to stay for a shorter

time than first-time visitors of a cultural destination. One reason for this result could be the tendency of "cultural tourists" to take multiple trips during a year (short break holidays).

Our study shows that, compared to purely leisure tourists (baseline), business tourists are linked to lower LOS (−0.9 days; this is coherent with the results found in stage 1), while visitors whose main purpose is wellness or shopping tend to stay longer in the destination (+1.5). This is in line with the results of Menezes *et al.* (2008), who uncovered that business visits have a negative link with LOS. Furthermore, visiting friends or relatives has a positive impact on LOS (Soler *et al.*, 2018). However, our findings show no statistically significant effect.

Finally, concerning tourists' perceptions, in our research, we considered the importance and evaluation of the tourism destination's facilities and attractions. Tourists attaching more importance to the destination's intangible attributes (+1 in the Likert scale) exhibit a lower LOS (−0.13). By contrast, the cultural and historical attributes of the destination appear to have a positive effect on tourists' LOS (+0.16 and + 0.11, respectively).

Discussion and conclusion
Conclusion
The study attempted to reveal empirical evidence in support of the socio-economic variables, travel characteristics and cultural destination attributes as drivers of tourists' LOS. The case study of our analysis is Istanbul, a popular cultural destination. Moreover, our econometric specification helped to uncover the difference between one-night and longer-stay tourists. To achieve this aim, a two-stage approach was applied to our data. Our results suggest that the two visitor groups are qualitatively different and hence might exhibit different booking and consumption behaviors. Despite the relevance of tourists' LOS in the destination, to the best of our knowledge, this is one of the few studies to have thoroughly studied the qualitative difference between short- and long-stay tourists. As also highlighted by Boto-García *et al.* (2019), the analysis of the drivers of tourists' LOS is paramount for the design of efficient marketing policies to improve the profitability of the tourism activity.

Theoretical implications
Theoretically, our study has proved the significance of socioeconomics and travel characteristics in clarifying LOS. Moreover, our study provides to the existing literature by adding another dimension, as we considered the role played by tourists' perception of cultural attributes. To the best of our knowledge, these results are unique because no other studies have investigated the effect of tangible, intangible, historical and cultural attributes on tourists' LOS. Our results confirm that the promotion of cultural heritage is one way to provide that tourists stay longer.

According to this research, apart from the group of business tourists, who tend to be repeaters and to stay only one night in a destination, repeating behaviors have a positive impact on LOS. Therefore, the frequency of visits can determine future LOS. According to our results, repeaters could be divided into two groups: (1) business-repeaters and (2) tourist repeaters.

From a theoretical standpoint, and sustained by our empirical evidence, business repeaters resemble what McKercher defines as "incidental cultural tourists" (McKercher, 2002), i.e. those visitors who are not interested in the cultural assets of destinations. Other tourists, according to their LOS, could be compared to "purposeful" and "sightseeing" tourists, depending on the time they devote to either intimately experiencing a city or simply sightseeing it. Attracting tourists with a real desire to discover a destination's cultural beauties could ensure a stronger competitive advantage for the destination. In this regard, as

suggested by Brida *et al.* (2013), cultural tourism can be considered as a growing tool that can support more investment and employment in the destination.

Another important discussion is due. Short-stay visitors (especially day visitors), as well as overnight visitors, impose environmental and social pressure on the tourism destination. Moreover, the first group might leave a weak economic footprint in the local economy. Although the relationship between the LOS and tourism expenditure is controversial (and most likely not linear), it seems reasonable to state that short-stay visitors spend less (in absolute terms) because they stay shorter. In this regard, in destinations characterized by a majority of short-stay visitors, especially if concentrated during weekends and bank holidays, policymakers should propose different policies aiming at managing the flow of day visitors. Also, in line with Alegre and Pou (2006), the fact that tourists select for longer stays is not only important in generating economic benefits but also in curbing the negative effects of tourism. Tourist congestion is a main challenge in cultural districts, e.g. in relation to museum congestion, and therefore, the management of visitors in heritage sites is crucial, especially for small to medium-sized destinations (Glasso *et al.*, 1994).

To conclude, from a theoretical point of view, for those destinations exhibiting a relatively high proportion of short-stay (or even same-day) visitors, it is fundamental to understand the characteristics of each type of visitor. This would help to design strategies targeted at increasing the relative weight of those tourists who ensure the highest economic return and at minimizing the environmental and social impact.

Practical implications
Our results also have important practical implications because, in light of the positive relationship between cultural attributes and LOS, destination management should invest more in preserving, enhancing and promoting both tangible and intangible cultural heritage. Our analysis has highlighted the need for a long-term improvement policy around cultural attractions, which is paramount for attracting tourism flows and ensuring longer stays. Cultural heritage not only represents a crucial community resource but could also represent a key factor for the competitive advantage of a tourism destination. As reported by Europa Nostra, "more than 50% of tourist activity in Europe is driven by cultural heritage" (Europa Nostra, 2006, p. 15). For other types of tourism (e.g. business tourism or sun-and-sand tourism), competition between destinations could be stronger; if well-managed, cultural destinations could have stronger market power, characterized by unique traits and cultural assets.

The importance of previous visits to the destination, and especially the positive link between the length of the previous visit and the length of the current one, highlights the importance of keeping visitors connected to the destination. Tourism practitioners should consider these findings when promoting a destination, because the marketing strategies for the different segments should be differentiated in light of tourists' heterogeneity. Furthermore, destination planners should apply effective marketing strategies to increase visitors' loyalty to a destination (Lin and Morais, 2010), especially for those who have already visited the destination for non-business reasons. One way to boost repeating is by offering diverse and novel activities, which can help to sustain visitors' interest as well as to extend their stay.

To conclude, we believe that the policies' goal should not be merely to extend the overall LOS, as one-day visitors (especially the business segment) might not be sensitive to investments in tourist attractions, but to increase the trip duration for leisure tourists and to strengthen attachment to the destination, which is necessary to foster repeating behaviors. Our results, which accredit the strategies aimed at boosting cultural endowment, could be economically worthwhile for this purpose.

Limitations and future research
The findings of this research have important implications for future research. Although Scholtz *et al.* (2015) emphasized that determinants of LOS can differ across destinations and hence are not easily generalizable (Soler *et al.*, 2018), we argue that our research could work as a benchmark for future studies, especially when dealing with other cultural destinations.

Despite its important implications, our study is not free of limitations. First, some determinants that are traditionally used in the literature were not considered for this study. The reason behind this choice is purely analytical, as some of the variables displayed a low variance and hence were not good predictors of tourism LOS. Future extension of this analysis should consider some other key socio-demographic characteristics and travel characteristics (e.g. party size, daily spending, etc.) (Bavik *et al.*, 2020). We believe that the distribution channel, type of transportation and electronic word of mouth (Boto-Garcia *et al.*, 2019) could also significantly impact tourists' LOS. Second, there is a clear limit to the scope of the study. Even though it has been demonstrated that there is a positive association between LOS and tourism expenditure, this relationship is far from being a linear one (Thrane and Farstad, 2011). Thus, despite the relevance of LOS, the main goal of destination policymakers should not be merely to increase trip duration but to maximize tourism expenditure, which has important direct, indirect and induced effects on the destination. Further research should focus on the optimal amount of nights, considering the importance of the social and natural sustainability of the destination to guarantee a high satisfaction level. The high perceived value of the destination and the enjoyment of the experience are drivers of repeating behaviors. Third, although cultural destinations do not generally face severe seasonality patterns, our study is built on data collected during a short timeframe. Future studies should overcome this limit.

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