

## THE EVALUATION OF MUNICIPAL TOURIST TAX AWARENESS: THE CASE OF THE CITY OF PORTO

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### Abstract

**Purpose** – Evaluation of the municipal tourist tax awareness by tourists visiting the city of Porto, in order to test their knowledge and assessment about it and estimate the consequences on the city's level of competitiveness, as a tourism destination.

**Design** – This paper integrates the main literature review by using microdata, considering 2.139 answers, which were collected through direct interviews to tourists.

**Methodology** – We use a logit and a generalized linear models.

**Findings** – A little more than half of the tourists have already been aware of the tourist tax, depending on their sociodemographic characteristics, and almost 70,7% classifies the tax as “acceptable”. Two key variables stand out: level of education and nationality of the tourist. The tax is competitive and to guarantee the destination attractiveness it is highlighted that, if the revenue is invested to benefit tourism, providing improved quality services, the demand from the tourists whose profile was already identified, will not possibly be affected.

**Originality of the research** – This study fulfils two gaps: i) the evaluation of the tourists' awareness regarding the tax application and its assessment, according to their sociodemographic characteristics; and ii) the analysis of the destination's level of competitiveness.

**Keywords** Municipal Tourist Tax, Destination Competitiveness, Logit, GLM, Tourism, Porto

### INTRODUCTION

The fast and increasing globalization has benefited several sectors of economic activity in the last few years, with tourism being one of those which has registered a greater evolution. In 2019, according to the World Travel and Tourism Council (WTTC), the travel and tourism sector, had a contribution of about US\$8.9 trillion to the world's GDP, which represents 10.3% of global GDP, employed around 330 million people (1 in 10 jobs worldwide), generated US\$1.7 trillion in visitor exports (6.8% of total exports, 28.3% of global services exports) and a capital investment of US\$948 billion (4.3% of total investment). Only in the European Union (EU) this sector represented 9.1% of the GDP, about US\$2 trillion (by 2030, the EU is expected to reach around 557 million tourists, a growth of 147% compared to 2010). Just like the rest of the world, this growth in Portugal is also significant to the point that the sector is considered one of the main drivers of support for the national economy recovery. The country has been discovered as a preferred destination for tourists from all over the world, winning consecutive awards as the best destination in the world (World Travel Awards), among some other national and regional accolades, which have also helped the development and

modernization of companies and infrastructures more connected with this sector. The travel and tourism Balance of Payments has grown over the past few years, registering in 2018 a positive result of around 11.900 billion EUR (Banco de Portugal 2019). Among other relevant data, this contribution reflects the increase in arrivals of non-resident tourists to Portugal, with a changing annual rate of 7,5% in 2018. The main markets of origin are Spain, the United Kingdom, France, Germany and Brazil (INE 2019).

At the regional level, the North of Portugal does not escape this trend, with the sector also showing great dynamism. The city of Porto is acknowledged as the “*Cidade Invicta*” (unvanquished city), and its history, architecture, culture, gastronomy, wine (in particular Port wine), beaches, the Douro river, trade, encounters and discoveries are highlighted internationally as the main tourist attractions (European Best Destinations 2020; IPDT 2017). Based on these attributes, the North was the region that grew the most in the number of hotel units (+10,5% in 2018, compared to 2017), overnight stays (+7,3%) and in total hotel revenue (+14,0%), reflecting the market growth, both in terms of supply and demand (INE 2019). Tourists seek the city of Porto and the North of Portugal (IPDT 2017) mainly for leisure and business tourism (40,9% and 24% of the visitors, respectively).

The economic impact of tourism has caused some Portuguese municipalities to introduce tourist taxes, which can be charged on tourism businesses or directly to tourists (Gooroochurn and Sinclair 2005). These tourist taxes, widely used by developed and developing countries, include visa fees, entry/exit charges, taxes on hotels and restaurants, passenger services and ecotourism (Gooroochurn and Sinclair 2005). Its application is based on the local autarchic law and works as a counterpart of the tourist utilization provided by the activity and investment related to the tourist activity (Costa 2015). The tax is intended to face overhead costs added to the normal costs applied to residents, namely: public space (requalification of public space, with a strong tourist drive); culture (artistic and cultural dynamism, including the dynamization of museum spaces); urban services (overload with urban services such as security and surveillance, cleaning or maintenance of green spaces in tourist areas) and dynamism of the city (sporting events, city entertainment and tourist promotion).

Although tourism taxes are often different, depending on the municipality, there are common points in all the destinations that charge these fees, such as the fact that an extra fee is applied to tourists who pay overnight stays in establishments and accommodations located in the municipality, which can be fixed or variable, such as the exemption from payment for children and people with a disability, or the tax collection only when the accommodation capacity is equal to or greater than 60%.

In Portugal, tourist fees are regulated by Law no. 73/2013, of September 3<sup>rd</sup>, which establishes the financial regime for local authorities and intercity entities. The tourist tax is fixed (2 EUR per night), both in Porto (started on March 1, 2018) and Lisbon, and applied to all tourists up to a maximum of seven nights per person. According to the Tax Revenue Statistics (INE 2020), Portuguese municipalities applying these fees, collected 56.6 million EUR in 2019 (92% more in 2018); e.g. the municipality of Lisbon charged 36.5 million EUR in tourist fees, while Porto collected 15 million (from March to December 2018, charged just 8.7 million EUR). Children up to 13 years old and tourists

who stay overnight in the city to get medical treatment and their companions are exempt from payment. In the Portuguese case, there is no distinction between national and foreign tourists but, sometimes, the latter are taxed at a higher rate.

Regarding the city of Porto, the introduction of a tourist tax is intended to create and provide valuable tourism support services, without decreasing the destination competitiveness. This measure aims to minimize the difficulties presented by the significant growth of tourism, to ensure that the city remains a reference of sustainability, to avoid degradation and excessive occupation and, cumulatively, to capture and retain existing and new residents. The city needs to improve signage and animation, strengthen the security of people and goods, reinforce the maintenance of public spaces, urban cleaning and hygiene (Porto City Hall 2020).

Therefore, this paper intends to evaluate the tourists' awareness of the tax application and its assessment, according to their sociodemographic characteristics, filling a topic still poorly explored. To evaluate whether its value is competitive or not, two different moments of analysis were considered: after the implementation of the tourist tax (in October of 2018) and a year later. Furthermore, we also analyse the level of competitiveness considering the evaluation and knowledge about the tourist tax applied. This type of analysis has never been done before, and to achieve these goals the research questions are the following:

- Q<sub>1</sub>: Do the sociodemographic characteristics influence the level of knowledge about the municipal tourist tax applied?
- Q<sub>2</sub>: Do the sociodemographic characteristics have impact on the evaluation of the municipal tourist tax?
- Q<sub>3</sub>: Can the level of knowledge about the municipal tourist tax evaluation dictate its level of competitiveness?

This is a relevant topic for policy makers because they experience a trade-off insofar as the rate has an important revenue component for the municipality but, on the other hand, increases the costs associated with staying overnight in the city (Cetin 2014). The amount applied should not imply the loss of competitiveness, emphasizing the importance of knowing the opinion of tourists about the tax.

The paper begins with the literature review, highlighting the main objectives of the study. After that, the questionnaire used to collect data and the methodology of analysis are fully described. Then the results are presented and discussed, to finally reach the major conclusions and suggest future research.

## **1. LITERATURE REVIEW**

The growth of tourism has led to an increase in the level of competitiveness in the sector which benefited from several economic positive effects such as the increase in income, circulation of foreign currency and employment, social changes and cultural life (Usta 2014). The tourism competitiveness analysis is a topic often studied in the literature (e.g. Crouch and Ritchie 1999; Dwyer and Kim 2003; World Economic Forum 2007; Croes

2011; Zhang et al. 2011; Huang and Peng 2012; Bratić et al. 2012; Webster and Ivanov 2014; Sánchez and Lopéz 2015; Perna, Custódio and Oliveira 2018) due to its economic importance in national and regional economies, increasing competition between destinations, and the fact that the benefits from tourism in the short term, can be clearly evaluated while in the long term they are not so obvious (Croes 2011). However, most of the determinants and factors influencing destination competitiveness, e.g. price competitiveness, firm-specific factors, cultural and subjective factors (Dwyer and Kim 2003) and prices of goods and services that supply to tourists needs (Dwyer et al. 2000 a, b), also cause negative externalities usually called tourism costs, related to the environment effects, in terms of pollution and destruction of natural resources, social changes, cultural conflicts and economic impacts, in the form of extra roads, airports, municipal services, water and energy consumption, public health and so on (Dogan 2017: 269; Kirca and Topal 2017: 96; Okumus and Cetin 2018), often making it impossible to implement sustainable tourism solutions (Fernández and Rivero 2009). Some costs are determined by socioeconomic and global factors, while others are imposed by the government (e.g. taxes) or managed within limits (Dwyer and Kim 2003).

In order to face some of these problems, new legal frameworks have been implemented to regulate and limit the negative impacts, with taxation taking a leading role (Cetin et al. 2017; Goktas and Polat 2019). Tourism taxation started in the 1980s (Mak 2006) motivated by the need to expand and diversify revenues, finance public services and correct externalities (Jensen and Wanhill 2002; Gago et al. 2009). The benefits of taxation (direct taxes like municipal taxes, tourist taxes, visa fees, among others, or indirect taxes through sales taxes - Value Added Tax (VAT)) is not consensual; although they are a good source of revenue to ensure the supply of public goods that further encourage the tourism sector, such as roads, airports, railways, among others (Jensen and Wanhill 2002; Aguiló et al. 2005: 359; Cárdenas-García et al. 2015), they put the supply of tourism products under pressure with increasingly crushed margins for tour operators, travel agents and accommodation owners, with repercussions on the competitiveness and quality of tourism destinations (European Commission 2017).

In terms of competitiveness, several authors studied the impact of tax changes, namely VAT, on the main market players, mostly linked to the hospitality industry (e.g. Deloitte and Touche 1998; Jensen and Wanhill 2002; Gago et al. 2006, 2009; Durbarry 2008; Manente and Zanette 2010; Bratić et al. 2012), who concluded that tourist taxes can reduce an elastic demand (Gago et al. 2006; 2009; Durbarry 2008; Manente and Zanette 2010; Bratić et al., 2012) while inelastic demand is likely to stay pretty much the same. This happens when the destination doesn't have direct competitors or because of particular intrinsic reasons such as location, climate, cultural heritage, among other factors, which can decrease demand sensitivity to price variability (inelastic demand), minimizing the consequences of the price increase on the market supply side. Consequently, in these destinations the application of tourist taxes leads to an abetted collection of revenues, but it also corrects negative externalities of market power. However, even in these destinations, the application of tourist taxes can have different impacts caused by regional differences such as the choice of accommodation and the daily expenses of tourists, the importance attached to hotel accommodation and the weight of tourism in the destination, the composition of both the industrial and trade sectors and the labour productivity of that destination (Jensen and Wanhill 2002). In the

specific case of user charges or fees applied for the use of public resources (e.g. distribution of electricity, gas, water, sewage, plumbing, water collection and purification, airports and harbours' services, public libraries, parks, recreational centres, roads and bridges maintenance, fire protection and a whole range of other services) there is a lack of competition because most often these are ensured by the State or companies in the public sphere, so it is easy to acquire a monopoly (or oligopoly) position and, in this case, the demand is inelastic (Bird 1992; Bratić et al. 2012). Tourist taxes on overnight stays, usually charged in the form of an *ad valorem* value (proportional to the price) per night, are able to meet all the essential objectives of tourism taxation, they are very flexible and may differ depending on the type and location of the accommodation and the time of year (Logar 2010; Bratić et al. 2012). On the other hand, they are easy to apply and are able to reach more tourists. These advantages made tourist taxes widely used by countries as they were recognized by the World Tourism Organization (WTO) in 1998. In the United States of America, they are predominant (Bardolet and Sheldon 2008; Bonham and Gangnes 1996), and are being widely used in the EU (already in 18 countries); the first European countries to use them were Austria, Belgium, Czech Republic, France, Greece and the Netherlands (Gago et al. 2009). Goktas and Polat (2019) argue that EU countries, and local authorities, are free to set the criteria for applying the tourist tax and only to comply with international agreements defined in the legislation of the Council Directive 2006/112/EC, which also includes amendments (282/2011) in the application of VAT (Official Journal of European Union 2011).

In Portugal, the tourist tax was introduced in Lisbon on the January 1, 2016 and it is currently being implemented in several cities. The tourist tax amount differs between the municipalities, ranging from 0,50 EUR to 2 EUR. If, on the one hand, it has allowed considerable revenue to be collected in some cities (e.g. Lisbon, Porto, Sintra, Vila Real de Santo António), on the other hand, not all the cases are successful. The municipality of Aveiro introduced the tax in 2012 (the tourists paid between 0,35 EUR and 1 EUR per room and night), but after two years it ended up revoking it. The amount collected with the measure was much lower than expected. In the specific case of Porto, the growth of the tourism sector has been significant in the last years. According to a recent study by PWC (2018), Porto is the European city expected to have the highest revenue growth (over 10%) per available room (RevPAR) and, given the city's vitality (multicultural events) which attracts different tourist profiles, the average prices are expected to increase. As a result of this recent tourism performance, a tourist tax of 2 EUR per night and per person (over the age of 13) started to be implemented on the March 1, 2018, up to a maximum value of 14 EUR (7 nights of stay/person), charged by hotel establishments or local accommodations. Revenue from the tourist tax is used to increase the security of people and goods, reinforce maintenance of public spaces, urban cleaning and hygiene, signage and animation (Porto City Hall, 2020).

In relation to EU countries, tourist fees vary between 0,10 EUR (in Bulgaria) and 7,50 EUR (in Belgium) per person each night, with an average interval between 0,40 EUR and 2,50 EUR (European Commission 2017). Differences in the value of the tourist tax are mainly related to the type of accommodation (hostels and camps have a lower rate unlike five-star hotels, for example). The lowest tourist fees are charged in Eastern Europe and the highest in Western and Southeast Europe, where the price of overnight stays is higher. In certain cities (as in the case of Germany) these rates also allow access

to public services such as transport, public monuments, among others (see table A in the Appendix). According to Cetin et al. (2017), tourists are more willing to pay a tourist tax when the intention is to improve their experiences on the spot.

One of the biggest challenges for countries that apply tourist taxes is to define their value and assess whether that value is competitive, that is, if it does not inhibit tourism and tourists. This is a complex issue because the majority of tourist taxes on overnight stays, influences different types of tourists (business tourists vs. leisure tourists, long-term tourists vs short-term tourists, younger tourists vs older tourists). The tourist tax may be considered to be low when applied per person or per night, but it can be a considerable cost when tourists travel in groups (for example, with the family), making the destination less competitive (European Commission 2017). Therefore, the assessment of competitiveness of the tourist tax is directly related to the sociodemographic characteristics of tourists, a fact that this paper intends to highlight and characterize.

## 2. METHODOLOGY

Two samples were collected, through questionnaires applied in the main tourist attractions of Porto in two consecutive years. The first sample with 1.253 valid answers was collected during the month of October 2018, while the second sample with 886 valid answers was collected, one year later, during the month of October 2019, making a total of 2139 answers. In both years, the same data collection procedure was guaranteed through a questionnaire applied to tourists (national and international) in the main tourist attractions (e.g. Dom Luis Bridge, the Ribeira, Clérigos Church and Tower, the Lello Bookshop, Douro River and beaches).

The parts of the questionnaire related to the tourists' sociodemographic characteristics and the questions about the municipal tourist tax, were considered especially in terms of awareness and evaluation (Tables 1 and 2 describe the variables and the questions). The common socio-economic and demographic variables focused in the models that evaluate tourism demand (Seddighi and Theocharous 2002; Eugenio-Martin 2003), were used to model the determinants of awareness and opinion about the municipal tax we have considered.

A new method is suggested in order to assess the level of competitiveness of the tourist tax, applying two econometric models: a logit model for the dependent binary variable regarding the knowledge of the municipal tax applied to the city of Porto, and a generalized linear model (GLM) to analyse the tourists' opinions in their assessments of this tax. In the logit model it was used, as a dependent variable, the awareness of the municipal tax (dummy variable that assumes the value 1 for the respondents who stated "yes" about their knowledge, and 0 otherwise) and the sociodemographic characteristics of respondents as independent variables (age, gender, marital status, level of education, working conditions and tourist's nationality). The logit model is more suitable in a context of dichotomous data, in which the response takes one of only two possible values representing success or failure, or more generally the presence or absence of an attribute of interest. Wooldridge (2013) states that this model is more suitable than the least square models. As for the GLM, it is applied when the distribution of data does not follow the

assumptions of linear models, explicitly the assumptions of normally distributed residuals and no relationship between the variance and the mean (Nelder and Wedderburn 1972). We evaluate the tourists' perception about the municipal tax as the dependent variable (assumes the values 1 for option "low", 2 for "acceptable" and 3 for "high") considering the tourist sociodemographic characteristics (age, gender, marital status, level of education, working conditions and tourist's nationality).

### 3. RESULTS

As mentioned previously, samples were collected with a temporal distance of one year with some differences, both in the tourist profile and in the level of knowledge and assessment of municipal fees. In scope of the tourists' sociodemographic characteristics, we observed a gender balance in the global sample (50,1% females and 49,9% males). In 2018, males had a greater percentage, with 51,6%, while in 2019, on the contrary, females presented a larger share of representativeness, with 52,6%. The average age slightly increased between 2018 and 2019, with a mean age in the global sample of 41 years old. Concerning marital status, singles predominated in 2018 while in the following year married were the majority. In the global sample, almost 90% are either single (44,3%) or married (45,3%). As for the level of education it has increased considerably, as tourists with at least a bachelor's degree and other degrees went from 60,9% to 70,8%. Concerning the professional situation, the increase of 2,2 percentage points (p.p.) of employees is noteworthy, while the remaining statuses suffered slight changes that did not reach half a percentage point. In both samples, 65% were active people in the labour market (50,4% employed and 14,6% self-employed) while, regarding nationalities, it was noted a high decrease of Portuguese tourists, of 16,5 p.p. between 2018 and 2019, enhancing an increase of other nationalities, with the exception of tourists from Italy and Switzerland. Foreign tourists were mainly from Brazil, Spain, France, the United Kingdom and Germany. This result meets those that were published by national statistics (INE 2019), although with different weightings.

Table 1: Description of the variables and samples

Variable	Description	2018 (n=1253)	2019 (n=886)	Total
<i>Sociodemographic characteristics of the tourists</i>				
Gender	Dummy, 1 – female and 0 – male.			
Female		48,4%	52,6%	50,1%
Male		51,6%	47,4%	49,9%
Age*	Continuous variable.	40,5	41,8	41,0
Marital	Marital status. 1 – single, 2 – married, 3 – divorced and 4 – widow.			
Single		45,4%	42,8%	44,3%
Married		43,3%	48,3%	45,3%
Divorced		8,1%	6,8%	7,5%
Widow		3,3%	2,1%	2,8%
Level of education	Degree of education (completed). 1 – Basic, 2 – secondary, 3 – Degree, 4 – Master or PhD.			

Variable	Description	2018 (n=1253)	2019 (n=886)	Total
Basic		7,3%	4,3%	6,1%
Secondary		31,8%	24,9%	28,9%
Degree		40,9%	45,3%	42,7%
Master or PhD		20,0%	25,5%	22,3%
Work	Work position. 1 – employed (on behalf of others), 2 – self-employed, 3 – unemployed, 4 – retired, 5 – domestic, 6 – student.			
Employed		49,5%	51,7%	50,4%
Self-employed		14,5%	14,8%	14,6%
Unemployed		7,3%	6,9%	7,1%
Retired		13,6%	13,9%	13,7%
Domestic		1,4%	1,2%	1,4%
Student		13,7%	11,5%	12,8%
Nationality	Nationality of the tourist. 0 – Portugal, 1 – Germany, 2 – Brazil, 3 – Spain, 4 – USA, 5 – France, 6 – Italy, 7 – Poland, 8 – UK, 9 – Switzerland and 9 – Other.			
Portugal		25,2%	8,7%	18,4%
Germany		7,4%	9,0%	8,1%
Brazil		12,5%	13,7%	13,0%
Spain		10,5%	12,6%	11,4%
USA		5,7%	8,5%	6,9%
France		8,4%	11,2%	9,5%
Italy		2,3%	2,1%	2,2%
Poland		1,5%	2,7%	2,0%
United Kingdom		8,0%	10,0%	8,8%
Switzerland		1,8%	1,7%	1,7%
Other		16,6%	19,8%	17,9%

Note: \* In the age variable, the mean is presented since it deals with a continuous variable.

In the assessment of the knowledge about the tourist municipal tax, we observed that 51,2% of the tourists, in 2018, indicated that they were aware of its existence. This result can be justified by the fact that municipal taxes in the city of Porto were introduced on March 1, 2018 and the sample was collected shortly after its application. However, in 2019, the level of knowledge only increased 4,9 p.p.; after more than a year and seven months the level of knowledge was still far from a considerable majority of tourists visiting the city. As the tourist demand in the city of Porto has grown, a conclusion that can be drawn is that it has not inhibited the demand for this tourism destination.

In scope of the assessment of the tourist municipal tax, the information about its value was provided to the respondents, who indicated that they did not know, and all the respondents were questioned whether they considered it “low”, “acceptable” or “high”. In the two years under review, a high percentage considered it “acceptable”. This result reinforces the previous conclusion regarding the non-visible impact on demand. It was also observed that the percentage of tourists who valued “low” decreased by 2 p.p. and, in turn, it has increased in the same proportion for those who indicated “acceptable”.



Table 2: Knowledge and Assessment of the tourist municipal tax

Variable	Description	2018 (n=1253)	2019 (n=886)	Total
<i>Knowledge of the tourist municipal tax</i>				
Awareness	Do you know about the tourist municipal tax in Porto?* Options: 1 – Yes and 0 – No.			
Yes		51,2%	56,1%	53,2%
No		48,8%	43,9%	46,8%
<i>Evaluation of the tourist municipal tax</i>				
Assessment	Indicate your assessment of the tourist municipal tax. Options: 1 – Low, 2 – Acceptable and 3 – High.			
Low		18,3%	16,3%	17,4%
Acceptable		69,9%	71,9%	70,7%
High		11,8%	11,9%	11,8%

Note: \*If the answer was “no”, the interviews informed that the amount of tourist municipal was 2 EUR per night and per person.

#### Econometric Model 1 – Dependent Variable: the awareness of the tourist municipal tax

Through the results of table 3, we can see that the level of knowledge of municipal taxes increased by 4,7%, in 2019, when compared to the previous year. Being married increases the level of knowledge by 5,9%, when compared to the singles, with the same thing happening for tourists with a higher educational level; having an academic degree increases the level of knowledge by 13,4% and a Master or PhD by 10,8%, when compared to the tourists with a basic level of education. It was already expected that a tourist with a high level of education would also have a higher level of knowledge about the tourist tax. Not only because most tourists with this profile are more willing to travel, but also because they tend to seek more information about the destination. This result confirms Q1 and leads to the conclusion that the level of knowledge of the tourist tax depends on the tourist’s sociodemographic characteristics.

Self-employment has a level of significance in relation to the level of knowledge of municipal taxes, with a positive effect of 5,8% comparing to those who work for others (employed). Regarding the tourists’ nationalities, only two (Brazilian and American) showed significance and both had a negative effect when compared to Portuguese nationality. It is noticed that with these results, the level of knowledge is not related with the use in the countries of origin, considering that in the United States of America the tourist tax is prevailing (Bardolet and Sheldon 2008; Bonham and Gangnes 1996) and in Brazil it started to be introduced in several locations in 2015.

**Table 3: Logit coefficients and average marginal effects to explain the knowledge of the tourist municipal tax**

	<b>Coefficient</b>	<b>Average marginal effects</b>
<b>Year</b>		
2018	-	-
2019	0,194** (0,091)	0,047**
<b>Age</b>		
<b>Gender</b>		
Male	-	-
Female		
<b>Marital status</b>		
Single	-	
Married	0,241** (0,122)	0,059**
Divorced		
Widow		
<b>Level of education</b>		
Basic	-	
Secondary	0,357* (0,209)	0,087*
Degree	0,550*** (0,209)	0,134***
Master or PhD	0,442** (0,219)	0,108**
<b>Work</b>		
Employed	-	
Self-employed	0,238* (0,135)	0,058*
Unemployed		
Retired		
Domestic		
Student		
<b>Nationality</b>		
Portugal	-	
Germany		
Brazil	-0,328** (0,165)	-0,080**
Spain		
United States of America	-0,566*** (0,206)	-0,138***
France		
Italy		
Poland		
United Kingdom		
Switzerland		
Other		
Constant	0,393*** (0,185)	

Note: Standard errors in parentheses. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Number of observations 2139. LR  $\chi^2(12) 28,77$ , Prob >  $\chi^2 = 0.0000$ . For a better reading, only the statistically significant results are presented.

Econometric Model 2 – Dependent Variable: Evaluation of the tourist municipal tax

Table 4 describes the results of the GLM, which highlights the increasing evaluation for “acceptable” and “high” between the two years, therefore responding to Q2. We’ve got an interesting result for the tourists’ profile in this context; tourists with higher education levels tend to decrease the evaluation and consider that the municipal tax is low, when compared with the tourists with basic levels of education. More specifically a tourist with a bachelor's degree (or master's or PhD), in relation to those who have a lower level of education, decreases the evaluation by 0,134 (0,168) (“acceptable” and “high”), which may represent greater willingness to pay a higher tax. Furthermore, the tourists' nationalities variable presents a relevant result, with Germany (-0,107), United States of America (-0,205), France (-0,081), Switzerland (-0,206) and other foreign (-0,078) tourists tend to classify the municipal tax as being “low”.

Table 4: GLM coefficients to analyse the evaluation of the tourist municipal tax

Variable	Coefficient
Year	
2018	-
2019	0,04* (0,024)
Age	
Gender	
Male	-
Female	
Marital status	
Single	-
Married	
Divorced	
Widow	
Level of education	
Basic	-
Secondary	
Degree	-0,134** (0,055)
Master or PhD	-0,168*** (0,058)
Work	
Employed	-
Self-employed	
Unemployed	
Retired	
Domestic	
Student	
Nationality	
Portugal	-
Germany	-0,107*** (0,050)
Brazil	
Spain	

Variable	Coefficient
United States of America	-0,205*** (0,054)
France	-0,081* (0,048)
Italy	
Poland	
United Kingdom	-0,193*** (0,049)
Switzerland	-0,206** (0,092)
Other	-0,078* (0,04)
Constant	2,137*** (0,131)

Note: Standard errors in parentheses. \*  $p < 0,1$  \*\*  $p < 0,05$ ; \*\*\*  $p < 0,01$ . Number of observations 2.139. For a better reading, only the statistically significant results are presented.

Crossing the information on the level of knowledge, where only a little more than half of the tourists were aware of the existence of the tax, with the information expressing that only 11,8% considered the tax “high”, it leads us to conclude that a competitive tax is being applied. This conclusion allows us to answer Q3. The city of Porto is managing to attract tourists for whom the tourist tax has no negative impact on demand. The key to success are tourists with a high purchasing power and higher level of education, mainly from Germany, USA, France, and Switzerland. This result is also in line with what was already found in the literature review in which the tourist tax does not present a negative impact on demand (Bonham et al. 1992; Mak and Nishimura 1979). For this profile of tourists, the demand may be inelastic and the results are the opposite of those found in the literature where elastic tourist demand is verified (Deloitte and Touche 1998; Jensen and Wanhill 2002; Gago et al. 2006, 2009; Durbarry 2008; Manente and Zanette 2010; Bratić et al. 2012). What this result conveys is the identification of the tourist’s profile insofar the assessment of the tourist tax competitiveness is directly related to their socio-demographic characteristics. Since 17,4% of the respondents considered the tourist tax “low”, possibly there may be an adequate context to increase the tax. Cetin et al. (2017) disclosed, in a study applied to Istanbul, that tourists approved paying additional taxes for the improvement of services, and taxes would not alter their travel choices negatively. Other example applied in Italy showed that the respondents were available to pay for the preservation of different types of beaches (Rodella et al. 2019). As for the city of Porto, if the tax is invested for the tourism purpose, providing services with improved quality levels, the tourist demand with the previously identified profile will probably not be affected. If the revenue from tourist taxes continues to be used to improve the services that the city provides to the population, it will continue to attract tourists and allow a high economic impact for the city and for the national budget. The level of competitiveness must be guaranteed, taking into account that the tax collection should be consistent with the level of services the city offers.

## CONCLUSIONS

In Portugal, the tourist tax is charged at establishments where tourists stay overnight following the trend experienced in several developed and developing countries. There are already several municipalities charging or with the intention to start charging it soon, with some common rules, such as the exemption from payment for children and people with disabilities equal to or greater than 60%, the limit on a certain number of charged nights, or a differentiated tax depending on the location of the stay. The maximum payment is 2 EUR per night and the minimum 50 cents in certain cities.

The city of Porto introduced the tourist tax in March 1, 2018. The tax is charged to guests over the age of thirteen and is 2 EUR per person/night in all types of tourism accommodation establishments, up to a maximum of seven consecutive nights per person/stay. The objective is not to lose competitiveness in the destination but create value in the tourist services provided. In this scope, we evaluate the degree of knowledge of the tourist tax and the perception of tourists regarding its value. To this end, we present a new methodology in order to assess these two major analyses.

Data was collected through questionnaires applied in the main tourist attractions of Porto, at two different moments (1.253 answers in October 2018 and 886 in October 2019), and processed statistically using two econometric models: a logit model for the dependent binary variable relative to the knowledge about the touristic tax applied and, after that, a GLM to evaluate the tourists' opinions on the municipal tax value. It is not common in the literature review to study the level of knowledge about municipal tourist taxes along with the tourists' assessment about its level of competitiveness. The value of the tourist tax must provide value for money, this being one of the key challenges any tourism destination faces. Furthermore, it is the first time this type of study is done for the city of Porto.

The study results reveal that 53,2% were aware of the tourist tax. The knowledge about the tourist tax showed a high level of significance according to the civil status (married), level of education (degree, master or PhD), labour market activity (self-employed) and place of residence (national).

Regarding the evaluation of the tax amount, the level of education and nationality showed a significant effect. Tourists with higher education (Degree and PhD) decrease the evaluation and present a tendency to consider the municipal tax low, when compared with the tourists with basic levels of education. It was also observed that tourists from countries like Germany, United States of America, France, Switzerland and other foreign countries tend to classify the municipal tax as "low". The profile of this kind of tourists, comparing with the main origin markets of tourists, leads to the conclusion that several representative countries are included. For tourists from these countries, it proves to be a competitive tax and may not impact negatively on the demand of the sector. Within these countries, there is a wide margin to increase the tourist tax, without experiencing a decrease on the tourist flow, not forgetting that tourists from these countries also have a high level of purchasing power. This type of information is essential for the policy maker, although it should be noted that this type of measure is not consensual, and some

argue that it is necessary to move to a progressive rate. However, the study shows that almost 70,7% rate the tax as “acceptable” while 17,4% think its value is “low”.

This article has some limitations that should be highlighted. The price (the tourist tax) alone does not explain the destination competitiveness and it should be monitored and compared with rival tourism destinations. It would be interesting to evaluate the tourists’ opinions in different occasions in order to assess whether the level of exposure evolves over time (as is to be expected). In addition, it would be interesting to add a qualitative analysis of their opinions as they assess rates at different levels. With these data, we could further reform the possibility of changing the impact. These limitations may be overcome in a future investigation.

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## Appendix

Table A – Municipal Tourist Tax Rates in the EU Member States

Countries	Minimum Rate	Maximum Rate	Fixed Rate	Variable Rate (on accommodation price)
Austria	0,15 €	2,18 €		
Belgium				
Bruges			2,12 €	
Antwerp			2,39 €	
Ghent			2,58 €	
Bulgaria	0,50 €	1,53 €		
Croatia	0,25 €	1,00 €		
Czech Republic			0,58 €	
France	0,50 €	4,00 €		
Germany				5%
Hamburg	0,50 €	4,00 €		
Greece	0,50 €	4,00 €		
Hungary				4%



Countries	Minimum Rate	Maximum Rate	Fixed Rate	Variable Rate (on accommodation price)
Italy				
Rome	3,00 €	7,00 €		
Florence	1,00 €	5,00 €		
Venice	3,00 €	10,00 €		
Milan	2,00 €	5,00 €		
Lithuania			1,00 €	
Malta	0,50 €	5,00 €		
Netherlands				5,50%
Poland			0,50 €	
Portugal			2,00 €	
Romania				1%
Slovakia	0,50 €	1,65 €		
Slovenia	0,60 €	2,50 €		
Spain				
Barcelona	0,75 €	2,50 €		
Bathing Islands			3,00 €	
Switzerland			2,20 €	
Ukraine				1%
Cyprus, Denmark, Estonia, Finland, Ireland, Latvia, Luxembourg, Sweden and the United Kingdom.	Not Applicable			

Source: European Tourism Association (2020).

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