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European Capitals of Smart Tourism –
A New Direction in Tourism Research

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Abstract

Tourism is an important activity both globally and in the European Union (EU). Although the COVID-19 pandemic hit tourism hard, the sector was able to recover in a relatively short period of time. Smart tourism took a strong lead during the pandemic, demonstrating that it is responding to new challenges and adapting quickly to change. In 2018, the EU launched the smart tourism capital competition, encouraging cities to find new solutions to help attract more tourists and improve the quality of life of residents. The city designated as a smart tourism capital can benefit from some advantages from EU specialists, such as more intense promotion through different media channels in order to make the destination better known and thus attract more tourists. The aim of this paper is to investigate possible correlations between the number of tourists visiting cities designated as smart tourism capitals and the popularity gained as a result of acquiring this status. The paper presents quantitative research based on secondary sources. Three hypotheses were formulated and tested using SPSS software. The main results that could have implications for the field revealed that: 1) the attractiveness of a destination is determined by its cultural heritage tourism potential; 2) higher investments in research lead to an increase in the number of patents in the field of new technologies (including smart technologies) and to improving tourism activity in EU cities to attract more tourists, grow the local economy and better the quality of life of residents.

Keywords: Smart tourism capitals, cultural heritage and creativity, digitalisation, sustainability, accessibility.

JEL Classification: R12, Z32, Q52.

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1. Introduction

Tourism is a very important sector for EU countries. Before the COVID-19 pandemic, Europe received 742.42 million international tourists, representing 50.8% of the world total. EU Member States were the main receivers of tourists coming to Europe (72.6% of all tourists coming to Europe) (UNWTO, 2024a). These figures demonstrate the growing interest in European destinations that continue to be of increasing attraction today. A recent study indicates the interest shown by tourists from countries on other continents: Australia, Brazil, Canada, China, Japan, South Korea, USA, which ranked France first as a tourist destination, followed by Italy or Germany, then Spain and other non-EU countries (UK, Switzerland) (European Travel Commission, 2024).

The increased tourist interest in the European area and especially in the EU is largely due to the very valuable cultural heritage as a result of long habitation, a rich history, and a large number of empires that have left a valuable cultural legacy. This cultural heritage is exploited in cultural tourism, which continues to attract tourists, especially since innovative methods are now being used to involve tourists in various creative projects (Arcos-Pumarola et al., 2023; Remoaldo et al., 2020). The ecological, digital and accessibility transitions are some of the solutions that can increase the resilience of European tourism (Muštra et al., 2023) especially as the last few decades have subjected tourism to successive shocks. The fact that tourism is a sector that can adapt and has weathered shocks well, especially the one caused by the COVID-19 pandemic, is also demonstrated by the fact that in the first quarter of 2024, Europe reached 94% of its 2019 level, supported by intraregional demand and US travel. Furthermore, by the end of 2024, a full recovery to 2019 levels is expected (UNWTO, 2024b).

A particular importance for tourism in the 21st century is given to new technologies designed to increase the attractiveness of tourism, to highlight new tourist destinations, which is why the EU has a permanent concern for the development of tourism and especially for the implementation of new intelligent technologies. The year 2018 was named the European Year of Cultural Heritage, when the New European Agenda for Culture (EC, 2018a) was launched, which targets three areas of strategic interest: the social dimension, the economic dimension, and the external dimension. Therefore, the EU supports both culture and tourism, creating synergy between these two areas. In order to develop tourist destinations that are as accessible as possible to all people, both in terms of mobility and communication, in an environment that is as clean as possible, the EU launched in 2018 the first competition to designate cities as smart tourism capitals. European capitals of smart tourism (EC, 2018b), follows on from previous efforts to support both tourism as an economic activity and to provide a range of facilities for tourists and residents. Investments in tourism contribute to improving urban infrastructure, increasing accessibility, preserving cultural and natural heritage, sustainability, and also digitalisation. Investment in green infrastructure (reduced pollution, more efficient means of transport) also contributes to making cities smarter and greener, which impacts both tourists and residents (UNWTO &

UNDP, 2017). The EU's aim is to mobilise through this competition the participation of an increasing number of cities to use new technologies, to be more accessible and environmentally friendly (Fernández-Díaz et al., 2023). This EU initiative can also be linked to the Sustainable Development Goals SDGs, the UN project (UNWTO & UNDP, 2017) on some pillars, such as sustainability and digitalisation for cities entering the competition.

This article presents the EU's initiative to implement new technologies to support and improve tourism activity in EU cities to attract more tourists, grow the local economy, and improve the quality of life of residents. The aim of this research is to see how this EU initiative can help European cities become more attractive to tourists. The article introduces the topic to be analysed and a review of the literature. This is followed by a presentation of the methodology used in the research, which is quantitative, using secondary data to validate or invalidate the research hypotheses, and the next sections present the findings and the conclusions.

2. Problem Statement

The proliferation of innovative technologies is increasingly present in different sectors of activity, including tourism (Romão & Neuts, 2017). It is noted that worldwide there is a growing concern about innovative development in smart tourism destinations (Boes et al., 2016; Coros et al., 2023). Information and communication technology (ICT) plays an increasingly important role in tourism (Gretzel & Koo, 2021) and is a key factor in improving competitiveness (Aramendia-Muneta, 2020). Smart tourism contributes to the improvement of services (Chang et al., 2024), but also of the tourism experience (Azis et al., 2020; Ionescu & Sârbu, 2024; Um & Chung, 2021) by providing new opportunities for tourists to access information and services within the cities they visit more easily (Shi et al., 2021), and personalised tourism recommendations are becoming increasingly important in tourism marketing (Yang et al., 2024), while smart cities encourage development and innovation in tourism (Gursoy et al., 2024).

Ivars-Baidal et al. (2024) examine the extent to which the relationship between tourism governance and smart city initiatives contributes to the emergence of new governance models, such as smart city governance. Furthermore, systems that provide personalised recommendations to residents are very important in the convergence between ICT and smart city urban management (Andrade-Ruiz et al., 2024).

The EU has also created the Smart Tourism Capitals project to highlight the special role of smart tourism. The tourism industry is able to adapt quite quickly to changes in society in a relatively short period of time (Arbidane et al., 2023). Smart cities have the ability to attract potential tourists from anywhere in the world, but also to protect the environment through sustainable development (El Archi et al., 2023) as they focus on promoting innovation (Aramendia-Muneta, 2020; Lee et al., 2020). Cavalheiro et al. (2021) provide a longitudinal analysis of patent applications and the profile of tourism technology developers, highlighting technical progress and innovative activity in tourism.

The concern to showcase Europe's smart tourism capitals started to be present with the launch of this initiative by the European Commission in 2018. However, there is a lack of theoretical approaches and a descriptive approach of the cities designated as winners, by presenting the projects that have been carried out to obtain this title and an orientation towards the smart components of tourism (Coros et al., 2023; Trip et al., 2021). The most numerous articles target the smart tourism component, or smart city (Coros et al., 2023), to boost sustainable tourism, also providing a framework to measure sustainability (Aguirre et al., 2023) and to promote the city through culture (EC, 2018a). An empirical study addressing smart city initiatives in the EU is the one by Correia et al. (2022), which looks for a relationship between the level of development of countries and the focus areas of smart cities within them. The novelty of this research lies in an in-depth approach to this initiative, to present the benefits that both the cities entering the competition and the residents of the winning cities can obtain.

3. Research Questions / Aims of the Research

This article focusses on exploring the way European Union initiative on smart cities helps European cities become more attractive from a tourism point of view, and at the same time how it contributes to the increase in the quality of life for residents. Worth mentioning is the fact that in this field of research there is a gap for the aforementioned focusses. To address this gap, this research aims to make the first steps to unveil, from tourism perspective, if it is profitable for cities to engage in this competition. As a result, three research questions were formulated:

Q1. Does smart tourism capitals attract more tourists?

Q2. What makes a destination attractive?

Q3. Is it worth investing in research and developing for the candidates' cities?

In line with these goals, we have stated the following hypotheses:

H1: Smart tourism capitals attract a higher number of tourists after receiving this title;

H2: The attractiveness of a destination is determined by its cultural tourism potential;

H3: Higher investments in research lead to an increase in the number of patents in new technologies (including smart technologies).

4. Research Methods

This research used a standard methodology commonly used when dealing with secondary data. The method used is quantitative, through the empirical analysis of statistical data obtained from various specialised sources, such as UNWTO (2024a), Statista (2024), from 2019 (prepandemic year) to 2023, or Alberti et al. (2023).

The Statistical Program for the Social Sciences (SPSS) v.26 was used to test the hypothesis.

5. Findings

The Smart Tourism Capitals Competition is an EU initiative with funding from the Single Market Programme (SMP) and is aimed primarily at cities in EU member countries, but also other cities in non-EU countries (Albania, Armenia, Bosnia and Herzegovina, Iceland, Kosovo, Moldova, Montenegro, North Macedonia, Serbia, Turkey, Ukraine, UK, Iceland, Liechstenstein and Norway) with more than 100,000 inhabitants in general (EC, 2024a). The applying city must consider all four categories: accessibility, digitalisation, sustainability, creativity, and cultural heritage. The first winners were designated in 2019, and the 2021 edition was suspended due to the pandemic crisis, continuing with the 2022 edition until now (Table 1).

Table 1. The European capitals of smart tourism between 2019-2024

|	2019	2020	2022	2023	2024
Winner	Helsinki	Malaga	Bordeaux	Pafos	Dublin
	Lyon	Gothenburg	Valencia	Seville	
Finalists	Ljubljana - sustainability	Gothenburg- sustainability			
	Malaga- accessibility	Breda – accessibility			
	Copenhagen- digitalisation	Ljubljana- digitalisation			
	Linz- cultural heritage & creativity	Karlsruhe- cultural heritage & creativity			
Short list		Ravenna	Venice	Aarhus	Bremerhaven
		Bremerhaven	Dublin	Gijon	Cork
		Nice	Florence	Porto	Genoa
		Bratislava	Ljubljana	San Sebastian	Helsingborg
		Turin	Palma	Zagreb	San Sebastian

Source: made by the authors based on data provided by EC (2024).

The number of candidates is relatively constant (Figure 1) and it is noted that many of the candidate cities have previously held the honorary title of UNESCO Capital of Culture or stand out through a series of other cultural events that have earned their recognition. Year after year, these cities have been supported by the visibility they have even if they did not make it to the finals, and the achievements of the cities that made it to the final selection stages are widely presented.

Malaga is one of the cities designated as the Capital of Smart Tourism in 2020, but it also participated in the previous edition, where it won the title in the accessibility category. The results of this competition have been appreciated by

both tourists and locals, by improving the quality of life (Karakas & Atay, 2023). It can be said that Malaga has achieved the goal of starting this project, being recognised especially in the accessibility component, but also in mobility.

Figure 1. Candidates for the European Capitals of Smart Tourism
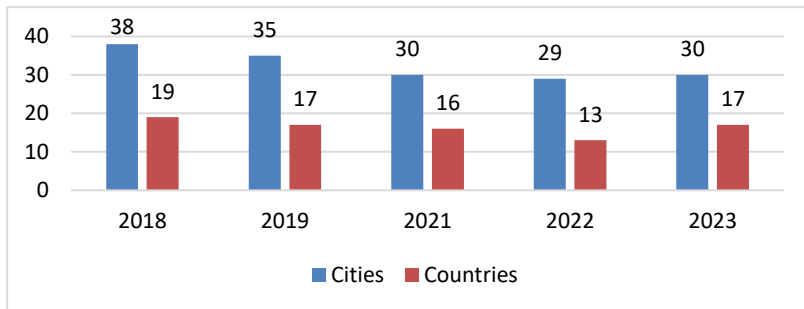
Source: made by the authors based on data provided by EC (2024).

In order to achieve our objectives for this research we used SPSS V.26 to perform the tests in order to determine the existence of any relations between the analysed variables.

For **Q**1 we performed a linear regression test in order to find if there is any connection between "Smart city index" (Smart Cities Index emphasises the environmental, social and governance values is meaningful to be incorporated into the weight of sustainability and inclusiveness) as an independent variable and the "Number of tourists" as a dependent variable. Looking at the significant value of our model of 0.183, which is greater than 0.05, we conclude that our model is not statistically significant (Table 2).

Table 2. Correlation between Smart city index and Number of tourists

Elements	F	Sig.	df
N of Valid Cases	20	-	-
ANOVA	1.907	0.183	1

Source: made by the author based on research,
data provided by Alberti et al. (2023) and UNWTO (2024).

The results infirm H1 – "Smart tourism capitals attract a higher number of tourists after receiving this title".

For **Q**2 we performed a linear regression test in order to find if there is any connection between "Tourist overnight stays" as an independent variable and the "Museums and art galleries" as a dependent variable. Looking at the significant value of our model of 0.000, which is less than 0.05, we conclude that our model is statistically significant (Table 3). The significance of the model can be stated as follows:

$F_{(1,19)} = 21.970$, $p = .000$

**Table 3. Correlation between Tourists overnight stays and Museums
and art galleries**

Elements	F	Sig.	df
N of Valid Cases	20	-	-
ANOVA	21.970	0.000	1

Source: made by the author based on research,
data provided by Alberti et al. (2023) and UNWTO (2024).

The model summary displays the percentage of variance accounted for, which in our analysis is 51.2%. The value can be interpreted as follows: 51.2% of the total overnights stays are the result of the existence of museums and art galleries for the analysed cities. The results confirm H2 – "*The attractiveness of a destination is determined by its cultural tourism potential*". These come to complete (Ćulić et al., 2021) who claims that the positive direct effects of destination attractiveness factors on satisfaction and revisit intentions.

For **Q**3, we performed a linear regression test in order to find if there is any connection between "gross expenditure in research and development" as an independent variable and the "ICT patent applications" as a dependent variable. Looking at the significant value of our model of 0.001, which is less than 0.05, we conclude that our model is statistically significant (Table 4). The significance of the model can be stated as follows:

$F(1,19) = 16.938$, $p = .001$

**Table 4. Correlation between Gross expenditure in research and development
and ICT patent applications**

Elements	F	Sig.	df
N of Valid Cases	20	-	-
ANOVA	16.938	0.001	1

Source: made by the author based on research, data provided by Alberti et al. (2023).

The model summary displays the percentage of variance accounted for, which in our analysis is 47.1%. The value can be interpreted as follows: 47.1% of a patent application can be the result of the investment made in research and development for new technologies. The results confirm H3 – "*Higher investments in research lead to an increase in the number of patents in new technologies*". A prerequisite in the smart city strategy is a sufficient number of technological innovations and at the same time the ability of the city to implement them (Dai et al., 2024).

6. Conclusions

The cities designated as capitals of tourism are part of the tourist cities, many of them being designated European Capital of Culture (Linz, Aarhus, San Sebastian, Helsinki, Bordeaux, Lyon, Cork, Dublin, Florence, Genoa, Porto), UNESCO Creative City (Seville and Turin) or famous for festivals (Zagreb, Venice, Gothenburg). The countries to which they belong are important tourist-receiving

countries, such as France, Spain, and Italy, which favours the increase in the number of tourists. Given the relatively short period of time since the European Capitals of Smart Tourism project was launched (2018) and the fact that tourism has lost a lot due to the Covid-19 pandemic, both in terms of number of tourists and revenue, it is difficult to analyse in this period whether the newly acquired title has led to an increase in the number of tourists in the targeted destination or not. From the analysis carried out, this hypothesis was not validated. On the other hand, the rich cultural tourist heritage continues to be of interest to tourists, and new technologies are increasingly present, the large number of patents also reflecting the interest of the authorities in implementing new technologies in tourism. This also facilitates tourist activity, but also provides an accessible environment for residents. Tourism must take into account all these changes and adapt to all changes to keep up with technology and face any challenges. In the research carried out, the limitations were mainly related to the lack of sufficient statistical data and the difficulty to access them.

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