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The Influence of World Heritage Sites on Tourism Dynamics in the EU 27 Nations

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Abstract: Culture and tourism are crucial for economic growth and sustainable development, working together symbiotically. Culture boosts tourism by supporting heritage, production, and creativity, while cultural heritage, reflecting national identity and traditions, strengthens local economies. This study uses a panel data analysis to examine the impact of cultural factors on international tourist arrivals in 27 EU nations. The Driscoll–Kraay method reveals that UNESCO World Heritage Sites, government cultural expenditures, household recreation and cultural expenditures, real GDP per job, and bed capacity positively influence international tourist numbers. Regarding cultural factors, World Heritage Sites have the most significant influence, with each additional UNESCO site leading to a 0.22% rise in tourist numbers. The most crucial determinant of tourist arrivals is bed capacity, with a one percent increase leading to a 0.66% increase in tourist arrivals. Conversely, healthcare expenditures and political civil liberties have a negative impact on tourist arrivals. This study discusses managerial implications and offers recommendations for future research.

Keywords: culture; tourism; UNESCO; world heritage sites; panel data analysis

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1. Introduction

The United Nations World Tourism Organisation (UNWTO) ranks tourism third, following fuel and chemicals, in terms of export categories, recognizing it as a catalyst for both developed and developing economies, offering direct and indirect employment opportunities, particularly for women and youth [1]. Nations seeking to increase their tourism revenue, cater to diverse consumer needs, and address the seasonal nature of tourism have begun to explore various forms of tourism. In this regard, cultural tourism has emerged as a significant alternative, contributing to the diversification of destination offerings, expanding the customer base, and prolonging tourists' stays. The substantial contributions of cultural tourism have motivated nations to recognize their historical and cultural values through the United Nations Educational, Scientific, and Cultural Organization (UNESCO), a globally recognized entity [2]. Inclusion in UNESCO's cultural heritage list, one of its notable designations, not only raises public awareness but also boosts tourism activities. While the primary objective of World Heritage listing is to protect and preserve these tangible and intangible assets that belong to humanity, these sites have been significant sources of tourism in numerous countries, contributing to the formation of national image and identity [3]. Moreover, the creation of World Heritage Sites (WHSs), when carried out in line with sustainable tourism principles, can potentially yield substantial financial benefits for both the region and the local economy [4]. Beyond its positive influence on the local economy, cultural heritage also invigorates various economic sectors, including traditional ones such as agriculture and creative industries. These sectors

are intimately connected to the restoration (i.e., construction and repurposing businesses) and valorization (i.e., publishing and tourism) of cultural heritage [5].

Tourism and culture play a vital role in economic growth and sustainable development. They share common values and goals, with tourism enhancing local authenticity and supporting cultural production [6]. The rising interest in cultural tourism has led to the development of various niche areas, such as heritage, art, gastronomy, film, and creative tourism. Concurrently, academic studies on this topic have increased, examining the motivations of cultural tourists from marketing, psychology, and consumer perspectives [7]. A study conducted in Türkiye identified several key motivational factors for cultural tourists, including "adventure, creativity and challenge, knowledge and experience, achievement and autonomy, rest and relaxation, sports and socialization, escape, family togetherness, fun, and travel bragging" [8]. However, research from Budapest in 2022 indicated a shift in these motivations over the past decade, moving from a focus on heritage sites and museums to an emphasis on atmosphere and gastronomy. Nonetheless, tourists still express interest in cultural interactions and local lifestyles, valuing authenticity, rarity, and the early development of urban ruins [9,10]. A study by the UNWTO revealed that when tourists' primary and secondary motivations are taken into account, 47% of tourists are driven by cultural interests. This indicates a broader market of travelers who engage in cultural activities, even if these activities are not their primary purpose for traveling [11]. Other research has focused on the impact of culture on regional economies. For example, Bowitz et al. [12] demonstrated that cultural heritage influences employment and income in Roros, Norway, estimated to be 7%. Guccio et al. [13] indicated that the presence of cultural heritage sites in Italy correlates with an increase in the number of visitors and reveals cultural heritage's monetary value. Given the crucial role of cultural heritage in tourism demand, many studies have used the number of UNESCO World Heritage Sites (WHSs) as a variable [2,3,6,14–16]. Panzera et al. [14] discovered that WHSs are more effective than monuments, museums, and cultural landscapes in attracting international tourists. The presence of WHSs was linked to an increase in tourist flow, from 6000 to 60,000. The authors of [16] examined the impact of tourism on the economy between 1980 and 2002, using data from WHSs, and found a positive relationship between the degree of specialization in tourism and economic growth. Nevertheless, research has also identified adverse impacts of WHS designation on tourism. For instance, Cuccia [5] observed that UNESCO site certification does not have a long-term effect on the growth rate of tourist numbers. Similarly, Huang et al. [17] found that the inclusion of a WHS did not significantly influence the promotion of tourism. In addition, the international recognition of the WHS can give rise to a conflict between the local relevance of the designation and the global ownership of the site, as well as issues such as over-tourism [18], a loss of privacy for local people [19], site degradation [20], and commercialization [21]. In light of these inconsistencies in the studies on the relationship between WHSs and tourism, it is evident that further research is required.

Drawing from the extensive body of literature on cultural heritage, it is evident that WHSs have been a predominant focus in numerous studies [5,15,22]. However, additional factors, such as the GDP, healthcare quality, and cultural expenditures, have emerged as crucial determinants of tourism demand. Over the past six decades, the sustained growth of international tourism has catalyzed two primary streams of research: one focusing on the relationship between tourism and economic growth, and the other on the determinants of tourism demand [6]. Among these determinants, the GDP stands out as a key indicator, both in the tourists' countries of origin and in destination countries, significantly influencing tourism patterns [2]. The role of culture as a determinant of tourism demand has also gained considerable attention. In examining the relationship between cultural factors and tourist arrivals, WHSs have frequently been used as a proxy for a destination's cultural appeal [2,14,16]. This study expands the analytical framework by considering not only WHSs but also additional cultural indicators, such as government expenditure on cultural activities and household spending on recreation and culture. This approach seeks to offer a

more nuanced understanding of how cultural factors drive tourism development beyond the established focus on WHSs alone. Moreover, recognizing the importance of healthcare quality in influencing tourists' decision-making and destination preferences [23], this research incorporates healthcare expenditure as a significant variable in tourism demand models. The proportion of national spending allocated to healthcare is therefore examined as a critical determinant alongside other economic, social, and cultural indicators. In addition to economic and cultural factors, institutional variables—such as political stability, democracy, and freedom—are influential. As highlighted by Bulut et al., political freedom significantly affects international tourist arrivals, further enriching the model of tourism demand [24]. Accordingly, the present study incorporates the political civil liberties index as an institutional variable.

The method of a panel data analysis is commonly used in cultural heritage studies [3,15,16,22,25,26]. This method is popular in social sciences due to its benefits, such as the ability to measure individual change components, collect a wider range of data on each sampled element, and provide high-quality intergenerational data and measures of event frequency, timing, and duration [27]. This study aims to investigate the impact of World Heritage Sites on the number of international tourists in EU-27 countries (Germany, Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Cyprus, Croatia, Ireland, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, and Greece) using a panel data analysis. This study differs from its counterparts in terms of both the year of coverage and the variables used. Previous studies have concentrated on WHSs in specific countries, including China, Italy, and Norway [2,3,12], or on WHSs in some countries in Europe [15]. Several studies have been conducted on the EU group [6,14]. Panzera et al. [14] used the Bayesian Attraction Model to investigate the impact of tangible cultural heritage on visitor mobility in EU NUTS2 regions. UNESCO [6] studied the impact of cultural assets on tourism development in 27 EU member states, analyzing data from 2008 to 2018. It is hypothesized that WHSs are unevenly distributed across Europe, with certain regions likely containing a higher concentration of these sites compared to others [14]. To better understand the broader implications of WHSs on tourism patterns, it is proposed that the scope of the analysis be extended to cover all EU member states. By incorporating data from all EU countries, a more comprehensive and accurate assessment of the relationship between WHSs and tourist numbers can be achieved.

The purpose of this study is to examine the influence of WHSs on the number of international tourists, using data from 2001 to 2022. The effect of an increase in WHSs is predicted to be increasingly noticeable when the study's scope is broadened. Understanding whether the rising number of WHSs in EU countries actively stimulates tourist flows is essential for crafting effective strategies aimed at promoting and preserving these cultural landmarks. To provide a more nuanced analysis, the model not only considers UNESCO WHSs but also integrates indicators of government investment in culture and household expenditure on recreation and cultural activities. This holistic approach enables a deeper exploration of the broader impact of cultural factors on tourism development. The remainder of the study is organized as follows. The literature review part delves into the relationship between culture, cultural heritage, tourism, and the World Heritage List. The Methods Section discusses the technique, data selection, and analysis. Finally, the paper summarizes the research findings, conclusions, and suggestions.

2. Conceptual Framework

2.1. The Relationship Between Culture, Cultural Heritage, and Tourism

Throughout most of the 20th century, tourism was largely viewed as a leisure activity that was disconnected from everyday life and local culture. However, since the 1980s, cultural tourism has emerged as a key driver of economic development for many destinations [28]. In today's tourism industry, culture is seen as a major attraction for domestic and international tourists [2]. Research has shown that culture serves as a crucial

motivational factor in studies examining tourists' destination preferences [11,12,29]. In an era of globalization, the relationship between culture and tourism has strengthened due to a growing interest in culture as a source of local identity and increased access to cultural experiences [11]. While the connection between culture and tourism has fostered cultural tourism, enhancing the cultural content of a place, tourist experience, and identity differentiation in an increasingly diverse and competitive landscape [30], this relationship is also perceived to have a destructive aspect. Tourism can threaten local communities and cultures through exploitation, displacement, and desecration. However, maintaining a sustainable relationship between tourism and culture will ensure the preservation of traditional culture and sensitivity towards cultural practices [31]. It is crucial to evaluate the collective value that culture and tourism create for each other. Tourism generates resources for cultural conservation and benefits host communities. It encourages communities to manage cultural assets effectively and motivates tourists to raise awareness of the value of "local heritage" elements. The contribution of culture to tourism is to enhance competitiveness, provide consistency for the destination offer, and increase the length of stay, satisfaction, and expenditure of tourists [11].

Cultural tourism encompasses activities like visiting heritage sites and engaging in local culture and creative experiences. It offers job opportunities, addresses tourism seasonality, revitalizes local cultures, instills community pride, and promotes architectural conservation. Destinations emphasize historical and cultural attractions, often seeking UNESCO World Heritage Site (WHS) status for international recognition and visibility. WHSs attract tourists and aid in national tourism marketing, enhancing global visibility and securing support for heritage conservation [2,3,7,14,32].

Tourists engage with cultural areas for various reasons, including nostalgia, understanding history and culture, honing hobby-related skills (e.g., collecting antiques), socializing, relaxation, and seeking emotional and spiritual experiences [33]. Studies conducted to comprehend the demographics of cultural tourists suggest that the majority of tourists are aged between 30 and 50, possess a high level of education, and are employed in white-collar jobs. They also fall into the high-income group [8,9,33]. The 2006 ATLAS survey disclosed that cultural tourists spend more than rural tourists, those engaged in sea and sun travel, health tourists, sports tourists, ecotourists, and city travelers [28]. The discovery that cultural tourists outspend most other types of tourists has led to a significant increase in the classification and inventorying of heritage [30]. A study conducted in Korea revealed that tourists with higher cultural awareness demonstrate a greater interest in the objective authenticity of WHSs and tend to appreciate the true value of traditional culture. Furthermore, enhanced tourist satisfaction facilitates cultural integration [34].

Cultural heritage, encompassing tangible and intangible elements, plays a crucial role in cultural tourism. It enhances the quality of life and well-being, highlighting the social aspects of managing, conserving, and sustaining cultural heritage and tourism [30]. According to UNESCO, cultural heritage includes both tangible and intangible elements. Tangible heritage comprises artifacts, monuments, buildings, sites, museums, and underwater artifacts, valued for their symbolic, historical, artistic, aesthetic, ethnological, anthropological, scientific, and social significance. Examples include buildings, rural landscapes, cities, art collections, historical gardens, handicrafts, and antiques. Intangible heritage includes music, dance, folklore, social customs, ceremonies, and rituals. Both tangible and intangible elements are crucial for tourism and other purposes [33].

Upon the analysis of the studies on the relationship between cultural heritage and tourism, it becomes evident that the results vary considerably. For instance, the results of a study conducted on Italy, France, Spain, and Portugal between 2003 and 2008, utilizing a panel data analysis, revealed a positive correlation between natural and cultural assets and the growth of tourism demand [15]. UNESCO's WHSs on tourism in the context of domestic tourism. The results indicated that an increase in WHSs led to a 4% increase in the number of tourists. However, this intensity was found to have a negative effect on the emission of settlements [2]. Concerning international tourists, a study conducted

in China revealed that the locations within the WHS list are significant in explaining the number of international tourists and have a greater tourist-increasing effect. The study, which covered 26 cities in China and employed the attraction model, found that cultural heritage sites were more effective for international tourists than natural heritage sites [3]. A study on EU tourism development found that while the number of UNESCO Heritage Sites did not significantly affect overnight stays, it positively influenced international tourism revenues and employment. Additionally, cultural employment and government spending on culture positively impacted overnight stays, tourism revenues, and employment [6]. Another study conducted in the NUTS2 regions of Europe found that an increase in WHSs significantly enhances a destination's appeal to international tourists, with a 40% increase in the number of international tourists observed. However, the research suggests that tangible cultural heritage alone is not enough to attract international tourists [14]. Cuccia et al. [26] demonstrated that the cultural and environmental infrastructure of Italian regions positively influences the efficiency of tourism destinations, as indicated by the occupancy rates of businesses. However, they found a negative correlation between the presence of UNESCO sites and technical efficiency, which measures how effectively destinations utilize available resources to maximize tourism outputs. The authors argue that the quality of WHSs is more important than their quantity. Consequently, local policymakers should recognize that incorporating cultural heritage into WHS designation is merely the initial step in a broader local development initiative, rather than its conclusion [5].

2.2. World Heritage List

WHSs offer significant advantages to regions that lack proper recognition, commercial development, or conservation resources. Achieving WHS status draws public interest, engages policymakers, attracts donors, and appeals to businesses, thereby increasing regional appeal and contributing to economic benefits such as job creation and income growth [12,16,35]. For instance, around Nigeria's Old Oyo Park, residents are becoming cultural creators in long-established crafts like cloth weaving, sculpture, blacksmithing, drum making, leather work, and iron smelting. The sustainable development of cultural tourism aids in enhancing the socio-economic lives of local people by stimulating their creative initiatives. Promoting culture-oriented regeneration boosts competitiveness and attractiveness, particularly to the international community, and has a cascading effect on the standard of living [10]. Alongside the positive impacts of cultural heritage, there are also negative effects at the local level. These include cultural heritage deprivation, social degradation, loss of the character and identity of a place, foreign ownership, foreign exchange leakages, and unequal distribution of costs and benefits. Moreover, there's a risk of local culture degradation, loss of identity, commercialization, sanitization of history, and musealization of society. There's also a need for improvement in areas such as managerial deficiencies and the lack of a holistic approach that links local people, tourists, and the industry [36]. For instance, a study conducted in Japan revealed that the inclusion of "Ogimachi" on the WHS led to tourists becoming part of the lives of local people, thereby weakening the spirit and feeling of local communities. This situation resulted in a division between the WHS and its surroundings. Furthermore, despite its WHS status, the level of protection appears to have decreased following the designation of WHC [19]. The designation of a WHS can attract foreign investment to the region. However, in some countries, domestic policy may prioritize health and education, and the local population may be unaware of the artistic and historical significance of the heritage [5]. For example, following Fez's inclusion on the WHS list, foreign investors played a pivotal role in the rehabilitation of historic residences and the attraction of tourists [10]. A further negative issue of the WHS is the observed decline in the average quality of heritage sites as the number and types of such sites increase. Other negative consequences include substitution effects burdening non-listed sites and the destruction of sites due to over-tourism, conflict, or targeted attacks [18,35]. Over-tourism has particularly become a significant issue for global destinations, resulting in traffic congestion, parking difficulties in historic areas,

resident discomfort due to tourist behavior, rising living costs, visitor dissatisfaction, and the degradation of heritage sites [18]. From the visitors' perspective, over-tourism negatively affects the tourism experience, largely due to the adverse attitudes of locals and employees, which also lead to a decline in the quality of life for the local community [37]. For example, a study in the Amhara region, known for its rich tangible and intangible cultural heritage, reveals that over-tourism leads to the commodification of local culture, the degradation of socio-cultural assets, and the production of inauthentic goods [20]. To address over-tourism, the UNWTO suggests various strategies such as distributing visitors over different times, promoting alternative routes, ensuring local communities benefit from tourism, improving urban infrastructure and facilities, and enhancing communication and engagement with local stakeholders and visitors [38].

3. Materials and Methods

Data and Variables

This study utilized a panel data analysis as its analytical method. A panel data analysis allows for the estimation of economic relationships using models constructed from horizontal, cross-sectional data with a temporal dimension. This method enables researchers to work with a larger volume of data, as it simultaneously includes both time series and cross-sectional data observations. As a result, as the number of observations and degrees of freedom increase, the degree of multicollinearity between explanatory variables decreases, thereby enhancing the efficiency and reliability of econometric estimations [39]. The data set used in the study extends from 2001 to 2022 and includes annual data for 27 EU member states in order to ensure that the variables in the model do not contain missing data, in accordance with the panel data analysis. The number of WHSs was sourced from the official UNESCO website. Data on household expenditure on recreation and culture, government expenditure on culture, government expenditure on health, bed capacity, and international tourist arrivals were obtained from Eurostat, the statistical office of the EU [40]. Eurostat is responsible for producing European statistics in collaboration with National Statistical Institutes and other national authorities in EU Member States. It also coordinates statistical activities within the Union [41]. Household expenditures on recreation and culture encompass audiovisual, photographic, and IT equipment, durable equipment related to leisure and culture, other leisure-related equipment, gardening supplies and pets, leisure and culture-related services, magazines, newspapers, books, and stationery, drawing and painting, and organized tourism expenditures [40]. The most frequently employed variable in studies measuring tourism development or demand in the literature is tourist arrivals [3,6,42,43]. The majority of demand models employ economic factors (such as the GDP), cultural factors (such as cultural expenditures), or the quality of goods and services (such as the number of rooms and the variety of cuisine). Given the importance of institutional variables in influencing tourism demand [24], this study adds the World Bank's Political Civil Liberties Index into its model. The Political Civil Liberties Index measures the degree to which individuals enjoy freedoms of expression and association and is based on indicators reflecting government repression that are not directly related to elections. The index ranges from 0 to 1, with a score of 0 representing the least freedom and 1 representing the most freedom. Given that the quality of health in host countries is known to influence tourist decisions and destination choices [23], government health expenditures are also included in the model. The health variable refers to the share in GDP.

An overview of the data provides important information about the distribution and characteristics of the variables (Table 1). Variables such as international tourist arrivals (T_International_Arr) and bed capacity (Bed_capacity) show a wide distribution with high means and large standard deviations. This shows that the data vary over a wide range and have some extreme values. Economic indicators such as cultural expenditure (Cul_Exp) and GDP per capita (GDP_PC) are similarly widely distributed and positively skewed. Variables such as the political and civil liberties index (Pol_Civil_Liberties_Index) and

government expenditure on health (%GDP) are more narrowly distributed and have lower standard deviation and skewness values.

Table 1. Descriptive statistics.

	Min	Max	Mean	Std. Deviation	Kurtosis	Skewness
T_International_Arr	571,942	185,121,042	26,831,622	40,942,591	3.301	2.098
Cul_Exp million Euro	18.83	18,343	2092	3437.31	7.371	2.725
Cul_Rec_Con_Exp	57.668	133.898	99.712	9.121	3.630	−0.413
GDP_PC	1770.91	133,711.79	30,997.38	22,332.57	4.102	1.719
Pol_Civil_Liberties_Index	0.81	0.986	0.866	0.041	−0.816	−0.306
Bed_capacity	10,674	2260,490	424,851.6	593,930.78	2.281	1.889
Health Gov_Exp%GDP_	2.50	10.10	6.15	1.45	−0.384	−0.247
Unesco	0	58	12.436	13.20	1.980	1.710

As indicated in Figure 1 above, the presence of fixed or random effects should be tested at this stage where model selection becomes important in a panel data analysis. First, the F test was conducted to test the appropriateness of the fixed effects model. According to the results of the F test, the presence of fixed effects was detected, which indicates that it is more appropriate to use the fixed effects model [38]. In the fixed effects model, the effects of independent variables on the natural logarithm of the number of international tourists are analyzed by controlling for the fixed effects of each country. In a fixed effects model, the constant term is allowed to vary across units, but the slope parameter does not vary across units or time. Moreover, all differences across units are reflected by the constant term, while the error terms are assumed to be independent of each other and have zero mean and constant variance. The Hausman test tests for the presence of correlation between independent variables and unit effects to choose between a fixed effects model and a random effects model. According to the results of the Hausman test (The Hausman test result is given in Appendix A.1), the existence of a correlation between independent variables and unit effects is detected. Based on this result, it was found appropriate to use the fixed effects model [39,44,45]. If a correlation was not detected, the random effects model would have been used.

In the model estimations, it was found that the error terms do not have constant variance (the Wald test results are given in Appendix A.2) and there are heteroskedasticity (the Bhargave, Franzini, and Narendranathan's Durbin–Watson test and the Baltagi–Wu test results are given in Appendix A.3) and autocorrelation (the Pesaran test results are given in Appendix A.4) problems. To overcome these problems, panel adjusted standard errors proposed by Driscoll and Kraay (the final model obtained using the robust estimator is given in Section 4) were used. This method provides estimators that are robust to heteroskedasticity, autocorrelation, and cross-sectional dependence problems.

The effects of the independent variables used in the model on the natural logarithm of the number of international tourists were analyzed. The coefficients and significance levels of the independent variables were calculated, and the results were interpreted. The findings show that cultural expenditures, the GDP per capita, civil liberties index, bed capacity, health expenditures as a share of the GDP, and UNESCO World Heritage sites have significant effects on the number of international tourists. The form of the model using natural logarithms is as follows (Table 2):

$$ln(T_{it}) = \beta_0 + \beta_1 ln(Cul_Exp_{it}) + \beta_2 \ln(Cul_Rec_Con_Exp_{it}) + \beta_3 ln(GDP_PC_{it}) + \beta_4 ln(Pol_Civil_Liberties_Index_{it}) + \beta_5 ln(Bed_capacity_{it}) + \beta_6 ln(Health_Gov_Exp\%GDP_{it}) + \beta_7 ln(Unesco_{it}) + \alpha_i + \epsilon_{it} \quad (1)$$

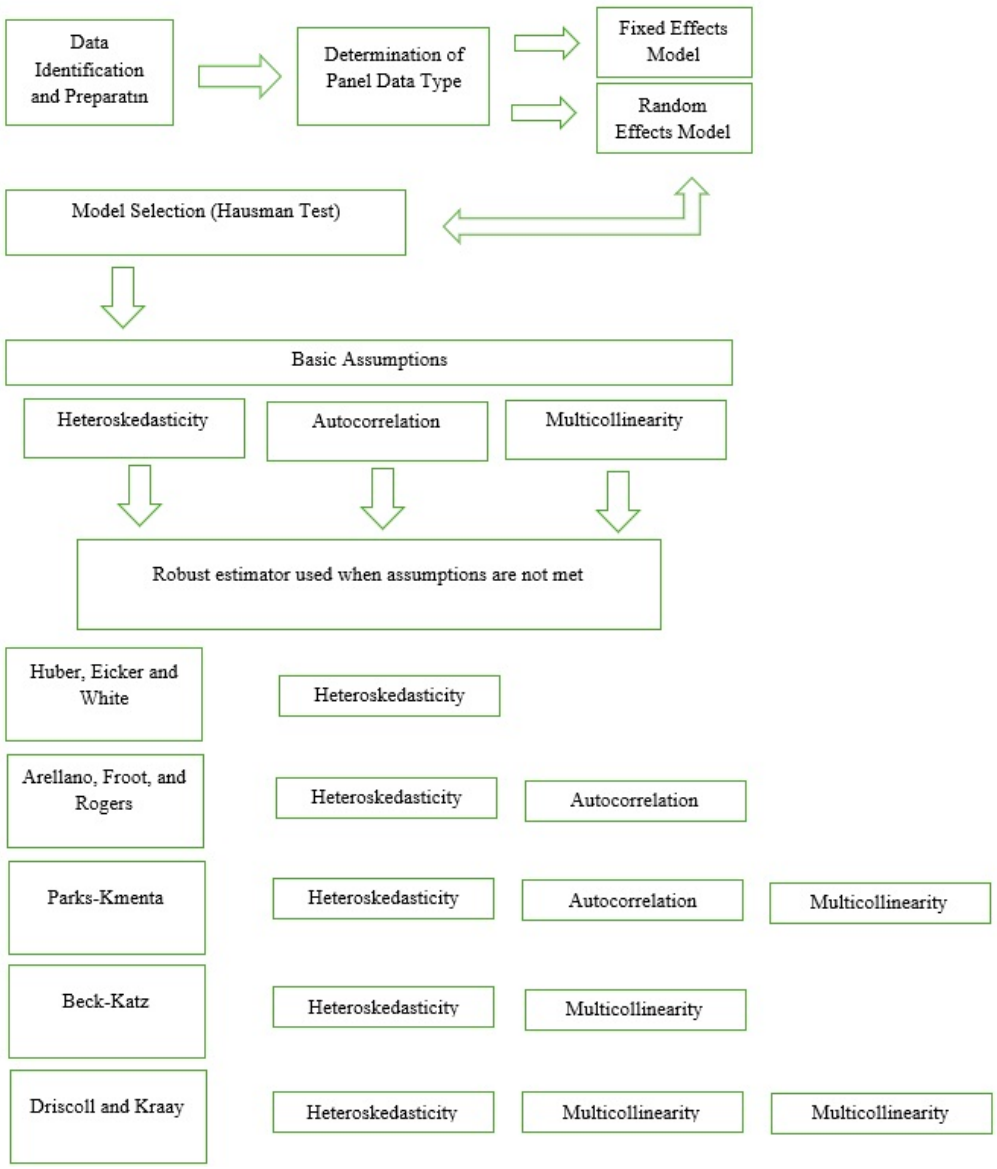


Figure 1. Implementation stages of panel data analysis.

Table 2. Natural logarithms of model.

$ln(T_{it})$	Natural logarithm of the number of international tourists in country i in year t
$ln(Cul_Exp_{it})$	Cultural expenditures
$\ln(Cul_Rec_Con_Exp_{it})$	Cultural and recreation expenditures
$ln(GDP_PC_{it})$	GDP per capita
$ln(Pol_Civil_Liberties_Index_{it})$	Civil liberties index
$ln(Bed_capacity_{it})$	Bed capacity
$ln(Health_Gov_Exp\%GDP_{it})$	Health expenditure as a share of GDP
$ln(Unesco_{it})$	Number of UNESCO World Heritage sites
α_i	Fixed effect specific to country i
ϵ_{it}	Error term
i	Country
t	Time (year)

4. Results and Discussion

The outcomes of Driscoll–Kraay's standard error are presented in Table 3, which arranges the coefficients of each variable, t statistics, standard error, and the corresponding *p*-value.

Table 3. Findings of Driscoll–Kraay's standard error.

Driscoll–Kraay Fixed Effect Outcomes **Dependent Variable: International Arrivals**				
Explanatory Variables	**Coefficient**	**Drisc/Kraay Std. Dev**	**t Statistics**	**Probability**
Cul_Exp	0.1122828 *	0.0580991	1.93	0.064
Cul_Rec_Con_Exp	0.215058 *	0.1202959	1.79	0.085
GDP_PC	0.1383726 *	0.070103	1.97	0.059
Pol_Civil_Liberties_Index	−0.4126329	0.3146121	−1.31	0.201
Bed_capacity	0.6591333 ***	0.0911084	7.23	0.000
Health_Gov_Exp	−0.7872108 ***	0.2896241	−2.72	0.012
Unesco	0.2215867 ***	0.0532267	4.16	0.000
Constant	2.598501 ***	0.4663868	5.57	0.000
F Statistics	80.45			
p-value	0.0000			
R^2	0.5370			
Observation	586			
Number of groups	27			

***, * represent statistical significance at the %1, %10 levels, respectively.

As a result of the analysis conducted for this purpose, it was found that cultural expenditures in countries have a positive and statistically significant ($p < 0.1$) effect on the number of international tourists. In other words, a 1% increase in cultural expenditures leads to an increase of approximately 0.11% in the number of international tourists. On the other hand, just like cultural expenditures, an increase in household expenditures on recreation and culture has a positive and statistically significant effect on the number of tourist arrivals in line with expectations. Therefore, it can be said that a 1% increase in household expenditures on recreation and culture increases the number of tourists coming to the country by approximately 0.22%. This result is consistent with the findings of a study conducted in China, which demonstrated that the government's cultural system reform policy has led to an increase in tourism development. The government's cultural policies facilitate tourism by enhancing the quality of service, developing public cultural infrastructure, and promoting media integration [46]. In another study, Ref. [6] found that the number of international tourists is positively influenced by the cultural expenditures of the government. This suggests that when governments invest more in cultural activities, there is a potential for an increase in the number of tourists visiting the country. This further emphasizes the significance of culture in stimulating tourism. As a result of the analysis, it is seen that the GDP per capita, which is among the indicators reflecting the development level of the country, also has a positive and statistically significant effect on the number of international tourists. A 100% increase in the GDP per capita leads to a 14% increase in the number of tourists. This finding indicates that a two-fold increase in individual income will lead to a 14% increase in the number of tourists. The result that the GDP, which is an indicator of economic development, has a significant positive effect on the number of tourists is consistent with previous studies [6,14,22,25,43]. On the other hand, the findings of the variable (Pol_Civil_Liberties_Index), which is included in the model and represents the level of civil liberties in the country, are statistically insignificant ($p > 0.1$). Therefore, based on the findings of this variable, it is not possible to directly associate freedom with the change in tourist arrivals. Contrasting the findings of this research, there are studies indicating that the factor of civil liberties can have a detrimental impact on tourism demand. This is evidenced by a decline in tourist numbers as levels of freedom diminish. Hence, it could be suggested that the inclination of international tourists to visit specific countries might be linked to the prevalence of considerable levels of freedom [22,24]. Each 1% increase in the bed capacity in a country increases the number of international tourists by approximately 0.66%. This level stands out among all the variables included in the model. Cuccia et al. [26] suggest that a rise in lodging capacity leads to an increase

in tourist numbers. In a similar vein, Ribaudo & Figini [47] found a positive relationship between the number of beds available and the demand for tourism. While there is a belief that expanding bed capacity will boost tourist numbers, it's crucial to implement strategies that address carrying capacity issues. These include the loss of land previously used for farming or other activities, resource consumption and pollution, and the need for new or improved roads to handle increased traffic. Therefore, when considering an increase in bed capacity at a destination, factors such as land use and waste management should be taken into account [48]. Although the coefficient of the variable representing health expenditures is statistically significant, it has a negative effect on the number of tourists. This finding is contrary to expectations. Before the estimation, it was expected that an increase in health expenditures would increase the number of tourists due to its positive impact on the welfare level in the country. Contrary to this finding, a study conducted by Su & Lin [22], which analyzed the impact of heritage sites on the number of tourists across 66 countries from 2006 to 2009, discovered a positive correlation between health expenditures and the number of international tourists. The researchers concluded that an increase in health spending, such as 1% of a country's GDP, could enhance health conditions and result in an additional 308,048 inbound tourist visits. This aligns with Konstantakopoulou's [23] study, which emphasized the significance of a host country's health quality in influencing tourists' decisions and choices of destination. The study suggested that potential health risks could deter tourists from visiting certain countries. This highlights the interconnectedness of the health sector and the tourism sector and underscores the need for countries to invest in their health systems not just for the well-being of their citizens, but also for the growth of their tourism industry.

As a result of the analysis, it is possible to say that a country's cultural heritage areas increase the number of international tourists. In other words, the number of UNESCO WHCs in the European Union countries has a positive and statistically significant effect on the number of international tourists ($p < 0.01$). Consequently, a 1% increase in the number of UNESCO sites leads to a 0.22% increase in the number of international tourists. This finding aligns with prior research [2,3,6,14,15,22,26,43] underscoring the significant role of cultural heritage. It highlights how cultural heritage, particularly when preserved and promoted, can serve as a powerful magnet for international tourists. It's clear that cultural heritage is not just about preserving the past, but also about enriching the present and future through tourism and economic growth.

5. Conclusions

Cultural heritage serves as a valuable asset, encapsulating the history, art, traditions, and lifestyle of a region. It enhances the appeal and competitiveness of a destination and emerges as a significant motivator for tourists when selecting a destination. The WHS has been the focus of numerous studies in recent years, and the results have sparked considerable debate regarding the impact of these areas on tourism. This article aimed to evaluate the relationship between culture and the number of tourists in the 27 EU countries from 2001 to 2022. This was accomplished using a panel data analysis, in the context of WHSs, cultural expenditures, and household cultural and recreational expenditures.

The most significant contribution of this study to the existing literature is the demonstration that the WHS, which is the focus of the research, has a positive and significant effect on tourist numbers. This result underscores the importance of being included in the WHS list, a highly prestigious recognition. It also highlights that destination managers and local governments should pay careful attention to the protection of WHSs. WHSs, which contribute to the development and competitiveness of the destination, will play a crucial role in the marketing and promotion of the region due to their international recognition. In addition to the aforementioned factors, government expenditures on culture and household expenditures on recreation and culture were also found to have a positive effect on the number of tourists. This situation underscores the importance of government investments in culture. However, it is also vital to raise awareness at the local community level and to

demonstrate the necessary sensitivity regarding the protection and regulation of the WHS at international standards. The use of culture and cultural tourism as a viable strategy to circumvent over-tourism and environmental degradation [46] experienced by popular destinations will also contribute to sustainability. Destinations featuring significant cultural attractions might consider implementing operational strategies like timed ticketing and variable pricing to efficiently control visitor density. Engaging local communities in the preservation of cultural heritage, alongside encouraging tourists to act as co-creators of the cultural experience, is considered an effective strategy. For those in positions of authority, investing in culture is seen as a catalyst for local and regional economic growth, as well as for the advancement of traditional projects and policies. For instance, dedicating a portion of government tax revenue to cultural development and marketing initiatives is likely to be a successful approach for safeguarding cultural resources. Consequently, the primary economic consequence of culture is that it provides an additional rationale for the allocation of resources to cultural projects, extending beyond the intrinsic value of culture itself [12].

A further noteworthy finding of this study is that the GDP has a positive effect on the number of tourists. This demonstrates the inter-relationship between economic growth and the tourism industry. Consequently, the economic development of a destination is conducive to the growth of tourism. Furthermore, the study yielded another result: that bed capacity, which is a crucial component of the tourism supply, has a positive effect on the number of tourists. While increasing bed capacity can attract more tourists, it's important to ensure that this growth is sustainable and doesn't negatively impact the local environment or community. Overcrowding can lead to the degradation of natural resources, strain on infrastructure, and can even diminish the quality of the tourist experience. Therefore, focusing on improving the quality of existing accommodations and ensuring they operate within the destination's carrying capacity can contribute to a more sustainable and responsible tourism industry. This research identified that factors associated with healthcare expenditure and civil liberties were initially anticipated to positively influence tourist numbers. However, paradoxically, these variables were found to exert a negative impact on tourist arrivals.

The UNESCO heritage list can serve as a catalyst for foreign investment, especially in countries where the protection of cultural heritage is not a top priority. Besides the impact of cultural heritage on tourism, it's also crucial to consider the economic and social development of local communities. Moreover, cultural heritage can contribute to the strengthening of individual self-esteem and the perception of identity [49]. This is believed to increase local people's awareness about the protection of cultural heritage. Additionally, local administrations may offer educational programs and training courses to inform local communities about the significance of the sites included in the WHS list, to enhance their awareness, and to ensure the sustainability of these sites. In addition to the efforts of local governments, the provision of training and information support by organizations such as UNICEF and UNWTO, which are authoritative bodies with expertise in the fields of culture and tourism, and the establishment of workshops or webinars can facilitate the enhancement of public awareness.

The primary limitation of this study is that it considers only the number of international tourists as the dependent variable. Given that the research covers data from 27 EU member states, acquiring information on domestic tourist numbers for each country within the specified period was not feasible. Therefore, it is suggested that including domestic tourists in future research may yield different outcomes. Additionally, although the study utilized alternative data sources to analyze cultural variables beyond World Heritage Sites, incorporating additional variables, such as cultural employment, in future studies would broaden the analysis's scope. The current study aimed to analyze the impact of UNESCO heritage sites on the number of tourists. In future studies, it would be beneficial to determine the effects of cultural heritage on local communities. Furthermore, conducting a study with countries that have the highest number of WHSs, excluding EU countries, may provide insights into the impact of WHSs. Given the multitude of factors influencing

tourism, it would be beneficial to examine the impact of heritage sites using a variety of variables.

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Appendix A

Appendix A.1. Hausman Test Results

	(b) fe	(B) re	(b-B) Difference	Sqrt(diag(V_bV_B)) S.E.
Cul_Exp	0.1122828	0.2652185	−0.1529358	0.0347423
Cul_Rec_Co~p	0.215058	0.1057718	−0.1092861	
GDP_PC	0.1383726	0.0492924	0.0890801	0.0412872
Pol_Civil_~x	−0.4126329	0.0018921	−0.414525	0.0767558
Bed_capacity	0.6591333	0.6313085	0.0278248	0.0543143
Health_Gov~p	−0.7872108	−0.6908346	−0.0963763	0.0147143
Unesco	0.2215867	0.2214107	0.000176	0.0172625

b = consistent under Ho and Ha; obtained from xtreg.
B = inconsistent under Ha, efficient under Ho; obtained from xtreg.
Test: Ho: difference in coefficients not systematic.
chi2(7) = (b − B)'[(V_b − V_B)^(−1)](b − B) = 74.42.
Prob > chi2 = 0.0000.(V_b − V_B is not positive definite.)

Appendix A.2. Variance Test Results

Test	Modified Wald Test for Groupwise Heteroskedasticity
Ho	sigma(i)^2 = sigma^2 for all i
chi2(27) = 93.64 Prob > chi2 = 0.0000	

Appendix A.3. Autocorrelation Test Results

Test	F Test That All u_i = 0
F(26,525)	11.69
Prob > F	0.0000
modified Bhargava et al. Durbin-Watson = 0.98293337Baltagi-Wu LBI = 1.1376503	

Appendix A.4. Cross-Sectional Independence Test Results

Test	Pesaran's Test of Cross Sectional Independence
52.144, Pr = 0.0000	

References

1. World Tourism Organization (UNWTO) (Ed.) *International Tourism Highlights*; 2020 ed.; World Tourism Organization (UNWTO): Madrid, Spain, 2021; ISBN 978-92-844-2245-6.
2. Patuelli, R.; Mussoni, M.; Candela, G. The Effects of World Heritage Sites on Domestic Tourism: A Spatial Interaction Model for Italy. *J. Geogr. Syst.* **2013**, *15*, 369–402. [CrossRef]
3. Yang, C.-H.; Lin, H.-L.; Han, C.-C. Analysis of International Tourist Arrivals in China: The Role of World Heritage Sites. *Tour. Manag.* **2010**, *31*, 827–837. [CrossRef] [PubMed]
4. UNESCO. *The World Heritage Convention*; UNESCO: Paris, France, 2012.
5. Cuccia, T. Is It Worth Being Inscribed in the World Heritage List? A Case Study of "The Baroque Cities in Val Di Noto" (Sicily). *Ital. J. Econ. Demogr. Stat. Stud.* **2012**, *66*, 169–190. [CrossRef]
6. Škrabić Perić, B.; Šimundić, B.; Muštra, V.; Vugdelija, M. The Role of UNESCO Cultural Heritage and Cultural Sector in Tourism Development: The Case of EU Countries. *Sustainability* **2021**, *13*, 5473. [CrossRef]
7. Richards, G. Cultural Tourism: A Review of Recent Research and Trends. *J. Hosp. Tour. Manag.* **2018**, *36*, 12–21. [CrossRef]
8. Özel, Ç.H.; Kozak, N. Motive Based Segmentation of the Cultural Tourism Market: A Study of Turkish Domestic Tourists. *J. Qual. Assur. Hosp. Tour.* **2012**, *13*, 165–186. [CrossRef]
9. Kay Smith, M.; Pinke-Sziva, I.; Berezvai, Z.; Buczkowska-Gołąbek, K. The Changing Nature of the Cultural Tourist: Motivations, Profiles and Experiences of Cultural Tourists in Budapest. *J. Tour. Cult. Chang.* **2022**, *20*, 1–19. [CrossRef]
10. Madandola, M.; Boussaa, D. Cultural Heritage Tourism as a Catalyst for Sustainable Development; the Case of Old Oyo Town in Nigeria. *Int. J. Herit. Stud.* **2023**, *29*, 21–38. [CrossRef]
11. World Tourism Organization (UNWTO). *Tourism and Culture Synergies*; World Tourism Organization (UNWTO): Madrid, Spain, 2018; ISBN 978-92-844-1897-8.
12. Bowitz, E.; Ibenholt, K. Economic Impacts of Cultural Heritage—Research and Perspectives. *J. Cult. Herit.* **2009**, *10*, 1–8. [CrossRef]
13. Guccio, C.; Lisi, D.; Mignosa, A.; Rizzo, I. Does Cultural Heritage Monetary Value Have an Impact on Visits? An Assessment Using Official Italian Data. *Tour. Econ.* **2018**, *24*, 297–318. [CrossRef]
14. Panzera, E.; de Graaff, T.; de Groot, H.L.F. European Cultural Heritage and Tourism Flows: The Magnetic Role of Superstar World Heritage Sites. *Pap. Reg. Sci.* **2021**, *100*, 101–123. [CrossRef]
15. Romão, J.; Guerreiro, J.; Rodrigues, P. Regional Tourism Development: Culture, Nature, Life Cycle and Attractiveness. *Curr. Issues Tour.* **2013**, *16*, 517–534. [CrossRef]
16. Arezki, M.R.; Cherif, R.; Piotrowski, J.M. *Tourism Specialization and Economic Development: Evidence from the UNESCO World Heritage List*; 2009 IMF Working Paper; IMF Institute and Fiscal Affairs Department: Washington, DC, USA.
17. Huang, C.-H.; Tsaur, J.-R.; Yang, C.-H. Does World Heritage List Really Induce More Tourists? Evidence from Macau. *Tour. Manag.* **2012**, *33*, 1450–1457. [CrossRef] [PubMed]
18. Adie, B.A.; Falk, M.; Savioli, M. Overtourism as a Perceived Threat to Cultural Heritage in Europe. *Curr. Issues Tour.* **2020**, *23*, 1737–1741. [CrossRef]
19. Jimura, T. The Impact of World Heritage Site Designation on Local Communities—A Case Study of Ogimachi, Shirakawa-Mura, Japan. *Tour. Manag.* **2011**, *32*, 288–296. [CrossRef]
20. Alamineh, G.A.; Hussein, J.W.; Mulu, Y.E.; Taddesse, B. The Negative Cultural Impact of Tourism and Its Implication on Sustainable Development in Amhara Regional State. *Cogent Arts Humanit.* **2023**, *10*, 2224597. [CrossRef]
21. Gould, P.; Burtenshaw, P. Heritage Sites: Economic Incentives, Impacts, and Commercialization. In *Encyclopedia of Global Archaeology*; Smith, C., Ed.; Springer: New York, NY, USA, 2014; pp. 3326–3331, ISBN 978-1-4419-0465-2.
22. Su, Y.-W.; Lin, H.-L. Analysis of International Tourist Arrivals Worldwide: The Role of World Heritage Sites. *Tour. Manag.* **2014**, *40*, 46–58. [CrossRef]
23. Konstantakopoulou, I. Does Health Quality Affect Tourism? Evidence from System GMM Estimates. *Econ. Anal. Policy* **2022**, *73*, 425–440. [CrossRef]
24. Bulut, U.; Kocak, E.; Suess, C. The Effect of Freedom on International Tourism Demand: Empirical Evidence from the Top Eight Most Visited Countries. *Tour. Econ.* **2020**, *26*, 1358–1373. [CrossRef]
25. Dattilo, M.; Padovano, F.; Rocaboy, Y. More Is Worse: The Evolution of Quality of the UNESCO World Heritage List and Its Determinants. *J. Cult. Econ.* **2023**, *47*, 71–96. [CrossRef]
26. Cuccia, T.; Guccio, C.; Rizzo, I. The Effects of UNESCO World Heritage List Inscription on Tourism Destinations Performance in Italian Regions. *Econ. Model.* **2016**, *53*, 494–508. [CrossRef]
27. Duncan, G.J. Panel Surveys: Uses and Applications. In *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed.; Wright, J.D., Ed.; Elsevier: Oxford, UK, 2015; pp. 462–467, ISBN 978-0-08-097087-5.
28. OECD. *The Impact of Culture on Tourism*; OECD: Paris, France, 2008; ISBN 978-92-64-05648-0.
29. Eurobarometer. *Preferences of Europeans towards Tourism*; Eurobarometer: Brussels, Belgium, 2021.
30. Vaz Serra, P.; Seabra, C.; Caldeira, A. From Cultural Heritage to Cultural Tourism: A Historical-Conceptual Approach. In *Advances in Tourism, Technology and Systems: Selected Papers from ICOTTS 2022, Volume 1*; Carvalho, J.V., Abreu, A., Liberato, P., Peña, A., Eds.; Springer Nature: Singapore, 2023; pp. 91–101, ISBN 978-981-9903-37-5.
31. McIntosh, A.J.; Hinch, T.; Ingram, T. Cultural Identity and Tourism. *Int. J. Arts Manag.* **2002**, *4*, 39–49.
32. Smith, S. A Sense of Place: Place, Culture and Tourism. *Tour. Recreat. Res.* **2015**, *40*, 220–233. [CrossRef]

33. Timothy, D.J. *Cultural Heritage and Tourism: An Introduction*; Channel View Publications: Bristol, UK, 2011; ISBN 978-1-84541-176-3.
34. Zhang, H.; Cho, T.; Wang, H.; Ge, Q. The Influence of Cross-Cultural Awareness and Tourist Experience on Authenticity, Tourist Satisfaction and Acculturation in World Cultural Heritage Sites of Korea. *Sustainability* **2018**, *10*, 927. [CrossRef]
35. Frey, B.S.; Steiner, L. World Heritage List: Does It Make Sense? *Int. J. Cult. Policy* **2011**, *17*, 555–573. [CrossRef]
36. Loulanski, T.; Loulanski, V. The Sustainable Integration of Cultural Heritage and Tourism: A Meta-Study. *J. Sustain. Tour.* **2011**, *19*, 837–862. [CrossRef]
37. Krajickova, A.; Hampl, F.; Lancosova, E. Visitors' Perception of Overtourism Impacts in a Small Destination. *Anatolia* **2022**, *33*, 236–246. [CrossRef]
38. World Tourism Organization (UNWTO), Centre of Expertise Leisure, Tourism & Hospitality, NHTV Breda University of Applied Science, NHL Stenden University of Applied Sciences (Ed.) *'Overtourism'?–Understanding and Managing Urban Tourism Growth beyond Perceptions, Executive Summary*; World Tourism Organization (UNWTO): Madrid, Spain, 2018; ISBN 978-92-844-2007-0.
39. Yerdelen Tatoğlu, F. *Panel Data Econometrics Stata Applied*; Beta Publishing & Distribution Inc.: İstanbul, Turkey, 2012.
40. Eurostat Database 2024. Available online: http://ec.europa.eu/eurostat/databrowser/product/view/tour_cap_nat?category=tour.tour_inda.tour_cap (accessed on 29 April 2024).
41. Eurostat About Us n.d Retriewed from About Us—Eurostat. Available online: https://ec.europa.eu/eurostat/about-us (accessed on 29 April 2024).
42. Kutlu, D.; Çimen, Z. The Impact of Tourism, Economic Growth, and Foreign Direct Investment on Carbon Dioxide Emissions in the BRICS Countries. *Rom. J. Econ. Forecast.* **2023**, *26*, 143–158.
43. Lin, Y.-X.; Chen, M.-H.; Lin, B.-S.; Tseng, S.-Y.; Su, C.-H. Nonlinear Impact of World Heritage Sites on China's Tourism Expansion. *Tour. Econ.* **2021**, *27*, 795–819. [CrossRef]
44. Hausman, J.A. Specification Tests in Econometrics. *Econometrica* **1978**, *46*, 1251–1271. [CrossRef]
45. Greene, W.H. *Econometric Analysis*; Pearson: Upper Saddle River, NJ, USA, 2018; ISBN 978-0-13-446136-6.
46. Chang, D.; Zhang, N. The Effect of Cultural System Reform on Tourism Development: Evidence from China. *Struct. Chang. Econ. Dyn.* **2024**, *70*, 77–90. [CrossRef]
47. Ribaudo, G.; Figini, P. The Puzzle of Tourism Demand at Destinations Hosting UNESCO World Heritage Sites: An Analysis of Tourism Flows for Italy. *J. Travel Res.* **2017**, *56*, 521–542. [CrossRef]
48. Castellani, V.; Sala, S. *Carrying Capacity of Tourism System: Assessment of Environmental and Management Constraints Towards Sustainability*; IntechOpen: London, UK, 2012; ISBN 978-953-51-0520-6.
49. Nilsson, P.A. Impact of Cultural Heritage on Tourists. The Heritagization Process. *Athens J. Tour.* **2018**, *5*, 35–54. [CrossRef]

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