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SVEUČILIŠTE U SPLITU

EKONOMSKI FAKULTET

DOKTORSKI STUDIJ EKONOMIJE I POSLOVNE EKONOMIJE

Zvonimir Kuliš

ULOGA KULTURNOG TURIZMA U EKONOMSKOJ REZILIJENTNOSTI: PROSTORNA EKONOMETRIJSKA ANALIZA REGIJA JUŽNE EUROPE

DOKTORSKI RAD

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ABSTRACT

This thesis provides a comprehensive analysis of the role of cultural tourism on regional economic resilience in South-European EU regions during the COVID-19 pandemic, focusing on both resistance (2020) and recovery phases (2021-2022). The study utilized a sample of 378 NUTS 3 regions and defined cultural tourism through six indicators: world heritage sites, UNESCO intangible cultural heritage elements, national monuments, national intangible cultural heritage elements, museums, and cultural and creative enterprises, as defined by the Horizon 2020 SmartCulTour project. Robust results were obtained using non-spatial (OLS) and spatial (SDEM) regression models, revealing the phase-specific role of cultural tourism. During the resistance phase, cultural tourism tended to negatively impact economic resilience, particularly in relation to national monuments. However, in the recovery phase, all indicators showed significant positive impacts, highlighting cultural tourism's crucial role in economic recovery. The study also uncovered significant spatial dependencies and heterogeneity in the relationship between cultural tourism and economic resilience. Regions were clustered in two ways: predetermined based on Eurostat's Territorial Typologies and using a new, original classification by employing thesis data and the spatial regimes approach. Results indicated that cultural tourism made urban regions vulnerable during the shock but was essential for their recovery, especially through physical and creative assets. Intangible cultural heritage was found to be vital for rural and mountain regions, while all cultural tourism indicators were significant for coastal regions. The spatial regimes approach further confirmed spatial heterogeneity, with cultural tourism proving most important for the economic resilience of NUTS 3 regions in Croatia and Greece. The research contributes academically by being the first to explore cultural tourism's role in regional economic resilience during the COVID-19 shock with a phase-specific and spatially heterogeneous context. In terms of policy implications, it confirms cultural tourism's direct effects on regional resilience, reaffirming it as a key component of territorial capital for regions. It emphasizes the need for adaptive, phase-specific, and cluster-specific strategies. Policymakers are advised to consider these insights for developing Smart Specialization Strategies, promoting cultural tourism to enhance regional economic resilience.

Keywords: cultural tourism, regional economic resilience, tangible cultural heritage, intangible cultural heritage, intangible cultural heritage, UNESCO, cultural and creative industries, tourism, spatial regression, spatial heterogeneity, NUTS 3 regions, South-European EU Regions.

SAŽETAK

Ovaj doktorski rad analizira ulogu kulturnog turizma u oblikovanju regionalne ekonomske rezilijentnosti na uzorku od 378 mediteranskih NUTS-3 regija Europske unije, tijekom šoka izazvanog pandemijom COVID-19. Poseban naglasak stavljen je na dvije faze (ekonomske rezilijentnosti): otpornost (2020.) i oporavak (2021.-2022.). Kulturni turizam definiran je pomoću šest pokazatelja, utvrđenih kroz projekt SmartCulTour (Obzor 2020): materijalna i nematerijalna kulturna baština UNESCO-a, nacionalni spomenici, nacionalna nematerijalna kulturna baština, muzeji te kulturne i kreativne industrije. U regresijskoj analizi korištene su metode najmanjih kvadrata i prostorne ekonometrije. Rezultati pokazuju da je u fazi otpornosti kulturni turizam imao negativan utjecaj na ekonomsku rezilijentnost regija. Međutim, tijekom faze oporavka, svi pokazatelji kulturnog turizma imali su statistički značajne pozitivne učinke na postizanje ekonomske rezilijentnosti. Također, istraživanje je potvrdilo opravdanost korištenja modela prostorne regresije, a otkrivena je i prostorna heterogenost među regijama (urbane, ruralne, planinske, priobalne). Urbane regije pokazale su se najosjetljivijima na šok, dok je u fazi oporavka kulturni turizam imao značajnu ulogu u svim vrstama regija. Ipak, indikatori kulturnog turizma nisu imali jednaku važnost za sve skupine regija. Za urbane regije, najvažniji faktori bili su materijalna kulturna baština te prisutnost kulturnih i kreativnih industrija, dok je u ruralnim i planinskim područjima posebno istaknuta važnost nematerijalne kulturne baštine. U priobalnim regijama potvrđena je sveobuhvatna važnost kulturne baštine i kreativnih industrija. Ovo istraživanje donosi nekoliko važnih akademskih doprinosa. Prije svega, predstavlja prvi pokušaj razumijevanja uloge kulturnog turizma u regionalnoj ekonomskoj rezilijentnosti, analizirane tijekom šoka izazvanog pandemijom COVID-19, s posebnim naglaskom na faze otpornosti i oporavka te specifične skupine regija. U pogledu smjernica za kreatore politika, rezultati ukazuju na ključnu ulogu kulturnog turizma kao teritorijalnog kapitala svake regije, gdje se posebno ističe izravan utjecaj kulturnog turizma na ekonomsku rezilijentnost regija. Ovi zaključci mogu pomoći kreatorima politika na regionalnoj razini pri definiranju strateških smjerova, osobito u kontekstu razvoja strategija pametne specijalizacije i drugih teritorijalnih strategija.

Ključne riječi: kulturni turizam, regionalna ekonomska rezilijentnost, materijalna kulturna baština, nematerijalna kulturna baština, UNESCO, kulturne i kreativne industrije, turizam, prostorna regresija, prostorna heterogenost, NUTS 3 regije, regije južne Europe.

CONTENT

1. INTRODUCTION

1.1. Problem and Subject of Research

European regions show pronounced disparities in economic metrics, such as per capita income, employment rates, and demographic trends (Diemer et al., 2022). Lang et al. (2023) examined income disparities within various European Union (EU) regions by comparing different income percentiles. Their findings highlighted the significant economic inequality across European regions, revealing that the average disposable household income in the wealthiest regions is about four times higher than in the poorest ones. Additionally, Eurostat reports (2024d, 2024c) examining 2022 regional GDP data found that only 10 of the 242 EU regions at the NUTS 2 level contributed to over a fifth of the total economic output, estimated at 15.8 trillion EUR. The data revealed significant disparities in GDP per capita, with the EU average at 35,220 EUR. Southern Ireland had the highest GDP per capita at 286% of the EU average, and Luxembourg at 257%. Conversely, Mayotte, France, recorded the lowest at 30% of the EU average, with Severozapaden in Bulgaria at 40%, showing a stark contrast between the least and most developed regions.

The marked differences can be linked to several underlying factors: the presence and utilization of natural and human resources, the impacts of structural alterations and globalisation, the historical legacy of previous economic systems and the function of institutions, ongoing socioeconomic advancements, technology and innovation, geographic proximity to economic hubs, and the detrimental effects of severe economic crises (Capello & Nijkamp, 2011; Krugman, 1998; Rodríguez-Pose, 2020). Economies operating at comparable income levels tend to exhibit similar structural attributes, while economies at disparate income levels typically show significant dissimilarities in structural facets, leading to the formation of subnational economic clusters of development (Diemer et al., 2022).

Iammarino et al. (2019) classified EU regions based on GDP per capita into four categories. The first, surpassing 150% of the EU average, mainly consists of metropolitan and capital cities specializing in high-quality goods and services. The second, between 120-149% of EU or national averages, includes areas like the Alpine region, generally less urbanized but retaining high productivity. The third category, spanning 75-119% of the EU average, covers much of north-western Europe, marked by economic vulnerability and declining manufacturing. The final category, below 75% of EU or national averages, encompasses eastern and southern Europe regions, noted for limited governance efficacy, low employment, and reduced R&D investments.

Convergence has been a central goal of the EU since its early days (Bisciari et al., 2020). To achieve this, the EU directs a significant portion of its funds and programs toward underdeveloped regions, aiming to boost their economic development and narrow the gap with wealthier areas (D. Panzera & Postiglione, 2022). The Cohesion Policy is the primary financial tool used by the EU to support regional economies (Di Caro & Fratesi, 2022). Thus, over the past six decades, the EU has been dubbed the "convergence machine" of the contemporary world (Ridao-Cano & Bodewig, 2018). However, recent discourse suggests a decline in this trend, with increasing regional disparities since the 1980s, particularly since the onset of the new millennium (Cörvers & Mayhew, 2021; Rosés & Wolf, 2018). Consequently, several academics have voiced the opinion that the EU's era as the so-called "convergence machine" may have reached its end (Hacker, 2021; Vandenbroucke & Rinaldi, 2015).

The regional disparities, although observable for a significant period, markedly escalated with the 2008 global financial crisis, which effectively halted the process of convergence (Bubbico & Freytag, 2018; Dijkstra et al., 2015, 2020). This event introduced a "reverse convergence", a term coined by the Directorate-General for Regional and Urban Policy (DGRegio), the EU division responsible for European Regional Policies (Capello & Cerisola, 2023). Post-crisis, inequality became a major concern in public and political agendas, especially in regions feeling "left-behind" (Rodríguez-Pose et al., 2023; Rodríguez-Pose & Dijkstra, 2021; Widuto, 2019). Notably, recent EU policy documents, such as the Territorial Agenda 2030, emphasize the need to address spatial disparities across European territories (Artelaris & Mavrommatis, 2022). Since the turbulent period following the 2008 financial crisis, which significantly disrupted labor markets until at least 2010 (T. Kitsos et al., 2023), Europe has encountered a series of formidable challenges (Bailey, Clark, Colombelli, Corradini, De Propris, Derudder, Fratesi, Fritsch, Harrison, Hatfield, Kemeny, Kogler, Lagendijk, Lawton, Ortega-Argilés, & Usai, 2020). These challenges encompass the looming threat of climate change, which, when combined with the prior financial crisis, results in what Andrew Sayer describes as a "diabolical double crisis", (Donald & Gray, 2019), as well as the Eurozone crisis, increasing immigration, the repercussions of Brexit, the Ukraine situation, and the recent COVID-19 pandemic (Boin & Rhinard, 2023; Hippe et al., 2023).

Before the COVID-19-induced downturn, the Great Recession stood as the most significant economic contraction since World War II. Many European regions experienced prolonged recovery times, particularly evident at finer spatial scales such as the NUTS-3 regions (Hundt & Grün, 2022; López-Villuendas & del Campo, 2023). In 2020, the COVID-19 pandemic brought another economic upheaval, resulting in a recession deeper than its predecessor (McCann et al., 2022). Noted regional economists use the 2008 crisis as a benchmark but consider the pandemic's economic fallout even more severe (Bailey, Clark, Colombelli, Corradini, De Propris, Derudder, Fratesi, Fritsch, Harrison, Hatfield, Kemeny, Kogler, Lagendijk, Lawton, Ortega-Argilés, Otero, et al., 2020). The pandemic, emerging before many regions had fully recovered from the previous recession, intensified regional disparities (Martin, 2021). Scholars hypothesize that its economic effects will be prolonged, predicting a gradual job market recovery (Brada et al., 2021). This crisis has renewed concerns about the future trajectory of regional inequality (Furceri et al., 2022), with initial evidence suggesting a potential widening of these disparities (Balakrishnan et al., 2022; Duran & Fratesi, 2023).

The heterogeneous impacts of successive crises on various regions have prompted a salient inquiry for scholars: What enables certain regions to demonstrate resilience by resisting, recuperating from, and restructuring their economies in response to shocks, whereas others do not exhibit the same capability? Efforts to elucidate this query have led to the conceptual evolution of resilience and its corresponding determinants. Though research interest in this domain was initially incited following the global financial crisis of 2008, the economic repercussions of the COVID-19 pandemic are expected to further magnify this academic focus (Compagnucci et al., 2022; Hippe et al., 2023; Trippl et al., 2024; Turgel & Chernova, 2024; Wink, 2021).

The heterogeneity in regional performance can be explained by a diverse set of underlying factors (Grabner, 2021). Empirical studies have identified several factors that significantly affect regional economic resilience. These include the level of regional economic development, human capital, sectoral diversity, accessibility, governance, and others (Giannakis, Bruggeman, et al., 2024; Giannakis, Tsiotas, et al., 2024; A. Kim et al., 2023).

Recently, just prior to the COVID-19 crisis, a burgeoning body of literature emerged examining the impacts of tourism on regional economic resilience (Romão, 2020a; Watson & Deller, 2022). The COVID-19 crisis has offered significant lessons for researchers in the fields of tourism and economic resilience (Aldao et al., 2022). In light of the pandemic, the connections between the tourism industry and economic resilience are being discussed more vigorously than ever before (Ibanescu et al., 2023). The COVID-19 pandemic had a substantial impact on the tourism industry due to measures such as social distancing, reduced international transportation, and government policies like lockdowns and travel restrictions, resulting in the most significant annual decrease in tourism on record, as evidenced by the World Tourism Organization (UNWTO, 2022b) and the World Travel and Tourism Council (2021).

The COVID-19 pandemic has reinforced the well-known fact that tourism is highly susceptible to external shocks, as documented in numerous studies on financial crises, epidemics, natural disasters, political instabilities, and conflict (Jiao et al., 2024). This susceptibility of the tourism industry to external shocks can lead to broader economic vulnerability when tourism is a key industry. Hence, it is not surprising that the COVID-19 pandemic had a profound effect on the economic activity of regions that rely heavily on tourism, such as the Mediterranean regions (Curtale et al., 2023).

Previous research has demonstrated that the tourism industry has a strong propensity for recovery following a crisis-induced downturn (De Siano & Canale, 2024). Despite concerns about the ability of tourism to recover from the COVID-19 crisis, given its severity (Collins-Kreiner & Ram, 2021), the industry once again showed its resilience. As Brida and Cárdenas-García (2024) note, tourism remains a major source of income for many countries specializing in this sector. In 2023, tourism income totaled 1.28 trillion euros worldwide, nearly reaching pre-pandemic levels, representing 93% of the revenues generated in 2019.

Additionally, as reported by Eurostat (2024e), EU tourism demonstrated significant recovery from the COVID-19 pandemic in 2023. The total nights spent in tourist accommodations reached 2.92 billion, a 1.6% increase over the pre-pandemic level of 2.87 billion in 2019, marking a record high for the EU accommodation sector. The year 2023 saw a rise of 171 million nights compared to 2022, a 6.3% growth, mainly attributed to a rise in international visitor stays (+146 million) and, to a lesser extent, domestic visitor stays (+25 million). Tourism activity, measured by nights spent, was 25% higher than a decade ago.

Among the various resources fueling tourism, cultural resources play a crucial role in enhancing destination competitiveness, with cultural heritage often being viewed as the most significant element (Muštra, Škrabić Perić, et al., 2023; Ottaviani et al., 2023). For instance, the Council of the European Union (2014) has identified cultural heritage as a strategic resource, emphasizing its economic impact. Cultural heritage significantly influences the economy as part of the cultural and creative sectors. It: i) serves as a powerful catalyst for inclusive local and regional development, generating substantial external benefits, particularly by promoting sustainable cultural tourism; ii) supports sustainable rural and urban development and regeneration; and iii) creates various employment opportunities. Additionally, cultural heritage plays a vital role in building and enhancing social capital, contributing to the objectives of smart, sustainable, and inclusive growth. The European Parliament's (2015) resolution dated 8 September 2015, which advocates for an integrated approach to cultural heritage in Europe, aligns with the Council's perspectives on the significance of cultural heritage. This resolution underscores the role of cultural heritage in generating value, enhancing skills development, and fostering economic growth by promoting tourism and job creation. Furthermore, cultural heritage projects are often seen as examples of innovative and sustainable economic activities that enhance the business and research capabilities of small and medium-sized enterprises (SMEs).

Tourism is the primary channel through which cultural heritage is widely acknowledged as a driver of local economic development (Cerisola & Panzera, 2024). Espeso-Molinero (2022) highlights that between 40% and 50% of tourists engage in cultural activities, according to various studies. Tourists who focus on culture and heritage generally stay longer and spend more money than other tourists. One particular study indicated that culture and heritage tourists spend 38% more per day and stay 22% longer than other types of travelers (Childs, 2023). Moreover, the cultural tourism sector is projected to continue growing at an annual rate of approximately 15% (European Commission, 2024b).

Promoting the sustainable integration of culture and tourism can aid in recovering from economic recessions, thereby contributing to economic stability and enhancing resilience. As a result, the connection between cultural heritage and tourism has attracted significant interest from scholars and policymakers, driven by a desire to understand the impact of cultural tourism on economic resilience (Kamran, 2022; Neuts et al., 2021; Petrić et al., 2021; Zhao et al., 2023).

Finally, building on the previously discussed text, which addresses increasing regional disparities, introductory points on regional economic resilience, and the role of tourism, particularly cultural tourism, in shaping it, the central research problem of this dissertation includes:

- The increasing economic disparities across EU regions, primarily driven by unforeseen external shocks such as the global financial crisis and the recent coronavirus pandemic.
- The instrumental role of regional resilience in mitigating divergences among regions in their developmental trajectories.
- Understanding the determinants that shape regional economic resilience, including spatial spillover effects, with a particular focus on cultural tourism, which leverages territorial assets like cultural heritage to boost tourism demand.

In summary, these components define the core **research problem** of this dissertation.

The **research subject** of this study pertains to the nuanced influence of cultural tourism on the economic resilience of South-European EU regions. Specifically, the investigation aims to delineate the dichotomous impacts of cultural tourism on the economic resistance and recovery capabilities of these regions. Furthermore, this research seeks to uncover potential heterogeneity in the effects of cultural tourism across different South-European EU regions, suggesting that the relationship between cultural tourism and economic resilience may be multifaceted and influenced by various regional characteristics.

A more detailed discussion on regional economic resilience, with a particular emphasis on tourism, and specifically cultural tourism, in shaping regional economic resilience, is thoroughly elaborated in the forthcoming sections (Chapter 2 and Chapter 3).

1.2. Research Objectives

Based on the previously elaborated research problem and subject, the following research objectives are defined:

- To review and analyze the existing literature on the relationship between cultural tourism and regional economic resilience.
- To empirically investigate the impact of cultural tourism on the economic resilience of NUTS-3 regions in South-European countries of the EU from two perspectives: analyzing how cultural tourism influences regional economic resistance and regional economic recovery following the economic shock caused by the COVID-19 pandemic.
- To assess the heterogeneous effects of cultural tourism on regional economic resilience across the regions under study.

- To employ spatial regression techniques to capture and quantify the spatial dependencies and effects in the relationship between cultural tourism and regional economic resilience.
- To identify key determinants, aside from cultural tourism, that might be influencing economic resilience in these regions.
- Based on the findings, to provide informed recommendations for policymakers, tourism planners, and stakeholders on harnessing cultural tourism as a tool for enhancing regional economic resilience.

1.3. Research Methodology

Tkalac Verčić et al. (2010) differentiate between quantitative and qualitative methodologies in their methodological framework. As the authors explain, a deductive approach in research, which facilitates the formulation of theories and hypotheses with the aim of testing them, relies predominantly on **quantitative methodology**, which is used in this research. According to the authors, quantitative methodology has several advantages, the main ones being:

- It enables more extensive research and a larger number of units on which the research is conducted, allowing for a higher degree of generalization, greater objectivity, and accuracy of results. In general, quantitative methods lead to summarized data that support generalizations about the phenomenon being studied. To achieve this, quantitative research typically involves a small number of variables and a large number of units, and uses predefined procedures to assess reliability and validity.
- The use of standards means that the research can be repeated and compared with similar studies. Quantitative methodology allows for the summarization of a large amount of information and encourages comparisons among categories and over time, thereby reducing the personal subjectivity of the researcher.

The thesis is structured into two main parts: theoretical and empirical. The initial phase of developing the theoretical framework involved a comprehensive search for pertinent scientific literature, including books, book chapters, journal articles, conference papers, preprints, reports, and policy papers. These sources were accessed through relevant databases such as, but not limited to, Web of Science, Scopus, Science Direct, and Google Scholar, as well as through library collections. The gathered literature was meticulously analyzed to draw informed conclusions and establish a foundational basis for the subsequent empirical research.

In this research, following the example of other quantitative studies (Kovač, 2024; Kvasina, 2024; Podrug, 2022; Šimundić, 2015), a range of methods are applied:

- The method of analysis, which involves breaking down complex wholes into simpler parts;
- The method of synthesis, which refers to the process of connecting isolated and less complex parts into more complex wholes;
- The method of compilation, which involves adopting others' research results with the purpose of generating new insights;
- The method of description (describing facts, processes, and objects, and empirically confirming their relationships and connections without scientific interpretation and explanation);
- The method of comparison (comparing identical or related facts, phenomena, processes, and relationships, determining their similarities in behavior and intensity, and highlighting their differences);
- The method of classification (systematic division of a general concept into specific concepts);
- The method of generalization (drawing general conclusions from concepts);viii) the methods of induction and deduction (drawing conclusions about the phenomena under study); and
- The methods of abstraction and concretization (isolating irrelevant elements and emphasizing essential elements of the research subject) (Zelenika, 2000).

In the empirical part of the study, secondary data were collected from various sources through desk research to test the research hypotheses. First, data related to cultural heritage and museums were obtained from the UNESCO database and national cultural registers. This data was then mapped at the NUTS 3 regional level to create cultural tourism indicators. Additionally, other indicators were gathered from various databases, including ARDECO, Eurostat, Orbis – BvD, Urban Data Platform Plus, OxCGRT, and the QoG Institute.

The statistical methods used for data processing and analysis included descriptive statistics, the ordinary least squares method, and spatial regression methods. Data processing and analysis were conducted using Stata 18.5, QGIS, and Geoda software, along with the Spatial Regimes web app. To present the results, geographic maps, graphical, and tabular representations were utilized.

1.4. Research Contribution

Given the outlined research problem, subject, and objectives, the study's findings aim to fill the highlighted research gap and offer policy recommendations. The contribution of the research can be summarized as follows:

- **Identification of research gaps:** This research addresses the identified gap in current literature on the interplay between tourism, especially cultural tourism, and regional economic resilience. This gap is evident in tourism economics (Jang & Kim, 2022) and is even more pronounced in the field of cultural tourism, where few studies such as those by Petrić et al. (2021) and Muštra, Škrabić Perić, et al. (2023) stand out.
- **Holistic approach to cultural tourism:** This research incorporates seven diverse cultural tourism indicators, covering both tangible and intangible cultural heritage, museums, and the cultural and creative industries. This represents a novel approach, especially after the pilot implementation of the SmartCulTour project (Petrić et al., 2020, 2021). As such, it helps bridge the literature gap that previously relied on unidimensional indicators like World Heritage Sites (Muštra, Škrabić Perić, et al., 2023) or solely on tangible assets (E. Panzera, 2022).
- **Sample and the scale of the analysis:** The set of cultural tourism indicators are used for the first time at the refined NUTS-3 regional level, specifically focusing on the interplay between cultural tourism and regional economic resilience. This approach differs from the only previous similar study by Muštra, Škrabić Perić, et al. (2023) that relied on a unidimensional indicator, such as World Heritage sites, and applied it at a higher scale, the NUTS-2 level. The sample encompasses a broad array of South-European NUTS-3 regions. By testing the models across this comprehensive sample, a macro perspective is maintained, highlighting the importance of drawing generalized conclusions from the results (Calero & Turner, 2020; Dunford, 2020; E. Panzera, 2022). At the same time, spatial heterogeneity is considered, with efforts directed towards identifying "spatial regimes". These clusters are characterized by aggregations of neighboring units that both possess functional similarities and share a consistent

relationship between a dependent variable and specific covariates (Vidoli & Benedetti, 2022).

- **Application of the spatial analysis:** Spatial analysis, though profoundly useful, finds limited application in regional economic resilience research (De Siano et al., 2020; Sutton & Sutton, 2024). Furthermore, this gap extends to the disciplines of tourism and cultural economics (Dalle Nogare & Devesa, 2023; Romão & Nijkamp, 2018).
- **Implications for policymakers:** The significance of cultural assets as territorial capital has been underscored (Camagni et al., 2020), highlighting their capability to bolster regional resilience through cultural tourism (Petrić et al., 2021). These conclusions provide policymakers with crucial insights into the importance of promoting cultural tourism activities. Such insights are particularly relevant for the design of Smart Specialization Strategies and the effective distribution of the European Structural and Investment Funds for the period 2021-2027.

1.5. Structure of the Thesis

Following the introductory chapter, the second chapter presents a conceptual framework of regional economic resilience and identifies its main determinants. The third chapter focuses on examining the relationship between tourism, with a particular emphasis on cultural tourism, and regional economic resilience. Due to the limited research on this topic, the nexus between tourism, especially its cultural dimension, and economic development is also explored. Relevant references are drawn from studies on the impacts of both general and cultural tourism on regional economic resilience. Additionally, the geographical aspects of tourism, cultural heritage, and regional economic resilience are investigated. The fourth chapter outlines the research methodology, including the development of research hypotheses and the presentation of the conceptual research model. The sample, data, and data sources are defined, followed by a description of the research methods and model specification. The fifth chapter is dedicated to hypothesis testing. The sixth chapter offers concluding remarks, discussing the results, synthesizing the main findings, and highlighting academic and practical contributions, policy implications, limitations, and suggestions for future research.

2. REGIONAL ECONOMIC RESILIENCE IN THE EU

2.1. Conceptual Framework of Regional Economic Resilience

In recent years, the concept of regional resilience has emerged as a significant "buzzword" and focal point of inquiry within the fields of economic geography and regional studies (Hu & Hassink, 2020). Over the past decade, it has established itself as a central theme in discussions on regional economic development (Evenhuis, 2020), a trend also reflected in policy-making and practical applications (Cowell, 2020). For example, Li et al. (2022) analyzed the core set database of the Web of Science and found that from 1998 to 2020, research papers containing the keywords "regional resilience" and "economic resilience" grew annually by 22.8%. Despite this substantial conceptual growth, critiques argue that the concept remains ambiguous and underdeveloped, necessitating greater theoretical clarity (Fröhlich & Hassink, 2018; Swanstrom, 2008).

Contrary to prevailing sentiment, a recent scoping review by Sutton et al. (2023) of 168 papers on regional economic resilience over the past two decades reveals significant evolution in the concept. Their analysis demonstrates that regional economic resilience has transitioned from a somewhat fuzzy and ill-defined notion to a well-structured construct, underscored by the development of a comprehensive conceptual framework. Despite a prolonged period of ambiguity, a general definition has now matured. Most scholars now explicitly or implicitly define regional economic resilience as the capacity of regional economies to resist, adapt, or transform in response to shocks and subsequently recover to sustain or enhance their pre-shock economic performance. Furthermore, Sutton et al. (2023) identify four main features of regional economic resilience: it is dynamic, multi-dimensional, multifaceted, and multi-factor.

2.1.1. Key Typologies of Regional Economic Resilience

In the discourse on regional economic resilience, four principal typologies have been identified by academics: engineering, ecological, evolutionary, and transformative resilience (Martin & Sunley, 2020; Sutton & Arku, 2022). The engineering perspective emphasizes a system's resistance to shocks and the speed of its recovery or 'bounce-back' to its initial state or equilibrium, asserting that the promptness of the return to equilibrium indicates effective regional resilience (Fingleton et al., 2015; Holling, 1996; Simmie & Martin, 2010). The ecological interpretation focuses on the capacity of regional economies to withstand shocks and maintain their existing equilibrium with minimal structural or functional changes, allowing for potential transitions to different equilibria (Holling, 1973; Modica & Reggiani, 2015; Strickland-Munro, 2017).

Conversely, evolutionary or adaptive resilience is seen as a complex process involving the regional economy's ability to implement structural, functional, and organizational changes to absorb shocks and recover, potentially enhancing its core performance (Boschma, 2015; Bristow & Healy, 2020; Evenhuis, 2020; Martin & Sunley, 2015). Lastly, transformative resilience, though still in its early stages of exploration, is gaining increasing attention. It refers to the capacity of regional economies to initiate substantial modifications to their structural and functional configurations in response to a shock, especially when these configurations become unsustainable. This leads to the reallocation of resources and the reconfiguration of structures and functions, resulting in a more resilient and stable economic system (Lemke et al., 2023; Martin & Gardiner, 2021; Martin & Sunley, 2020; Trippl et al., 2023).

Sutton and Arku (2022) summarize that the first two forms of resilience, engineering and ecological, view resilience as the capacity to maintain or revert to an equilibrium state. This perspective assumes that regional economies exist in a state of balance, and after experiencing a shock, either bounce back to that state or transition to a new equilibrium. However, this interpretation has faced scholarly criticism for its reliance on the equilibrium concept, which is seen as static and unvarying. Critics argue that regional economies are never truly in a static state but are in perpetual flux and uncertainty. Furthermore, the equilibrium paradigm fails to adequately explain the variability found in regional economic resilience or uneven regional development.

In contrast, the final two forms of resilience, evolutionary and transformative, adopt an evolutionary perspective that emphasizes adaptability. Adaptive resilience involves partial adaptation, while transformative resilience involves full-scale changes. These concepts suggest that regional economies, composed of diverse economic agents, are constantly adapting to changing economic environments, thus never achieving stasis. The adaptive paradigm highlights the intricate interrelations of diverse components that produce dynamic feedback mechanisms, influencing the system's adaptability. This viewpoint is particularly resonant among economic geographers for its accuracy in depicting the inherent dynamism of regional economies.

2.1.2. Core Features of Regional Economic Resilience

Martin (2012), and Martin and Sunley (2015, 2020) describe the dynamism of regional economic resilience as arising from the interplay of four key dimensions: vulnerability, resistance, renewal (or robustness), and recoverability. These dimensions are shaped by a region's developmental pathway prior to any shock (Martin et al., 2016). Building on this framework, Sutton et al. (2023) introduced "preparation" as a fifth dimension, encompassing both deliberate and incidental measures taken by economic actors to influence their region's resilience to future shocks.

"Vulnerability" refers to the susceptibility of regional economies to shocks. "Resistance" indicates the sensitivity of regional economies to shocks and the extent of the impact experienced. "Robustness" or "renewal" signifies how regional economies adjust, adapt, and redirect their functions and structures during and after shocks. "Recoverability" represents the scope and trajectory of a region's economic recovery from shocks (Martin & Sunley, 2020). While each dimension is distinct, they are interlinked, with each impacting the others. For instance, the degree to which regions prepare for shocks affects their vulnerability and resistance levels. Similarly, a region's robustness influences its recovery. The manner in which regions navigate these five dimensions ultimately defines their resilience in the face of shocks (Sutton et al., 2023).

When discussing resilience, it is essential to acknowledge the role of shocks, defined as unexpected, drastic interruptions that can significantly disrupt a region's economic activity. Shocks can originate from endogenous factors, such as the closure of major industries or natural disasters, or from exogenous elements like financial recessions or pandemics (Evenhuis, 2020; Ringwood et al., 2019). The scholarly literature identifies seven primary categories of shocks: economic (e.g., the 2008 financial crisis, the 2020 economic fallout), institutional (e.g., Brexit, NAFTA), organizational (e.g., changes in labor laws), environmental (e.g., earthquakes, floods, wildfires), manmade (e.g., terrorist attacks), technological (e.g., the steam engine, blockchain technology), and epidemic (e.g., COVID-19, Ebola, SARS) (Holm & Østergaard, 2015; Sutton & Arku, 2022).

The impact of shocks can vary significantly, from effects localized to a specific region, such as those caused by natural disasters, to those that ripple through the global economy (Martin & Sunley, 2015). Regional economies may react differently to shocks: some may exhibit resistance, showing minimal impact on their growth trajectory, others may experience substantial immediate effects but begin to recover, while others may be severely impacted with no visible recovery. Resilient regions tend to show high resistance during the shock and swift, effective recovery afterward (Hill et al., 2012; Martini, 2020; Sensier et al., 2016).

The heterogeneous impacts of shocks on regions are influenced by their unique economic structures and adaptive capabilities. The extent to which a region is affected depends on the intensity and duration of the shocks, with longer and more severe shocks causing greater adversity (Martin & Sunley, 2020). These regional responses not only delineate immediate recovery pathways but also shape long-term growth prospects and future resilience measures (Fingleton et al., 2012; Martin & Sunley, 2015). While shocks often have negative connotations, they can also present opportunities for regional transformation and long-term growth enhancement (Bănică et al., 2020; Kourtit et al., 2023).

Expanding on the multidimensional and dynamic characteristics of regional economic resilience, it is crucial to underscore its multifaceted nature (Giacometti & Teräs, 2019; Martin et al., 2016). Sutton et al. (2023) emphasize that resilience encompasses not only a region's performance during shocks but also its ability to resist, adapt, or transform when confronted with disturbances. The performance dimension evaluates regional resilience in the face of disruptions, often benchmarked against prior crisis levels or gauged in relation to the national economy's response. On the other hand, the capacity dimension delves into the adaptive processes regions employ against shocks, exploring the mechanisms behind their resilience or lack thereof.

Sensier et al. (2016) note a predominant focus on the performance aspect of resilience, contrasting it with the often overlooked capacity dimension in empirical resilience studies. They stress the importance of distinguishing between observable post-shock outcomes, termed "revealed resilience," and underlying resilience capacities. Giacometti and Teräs (2019) argue that while indicators of adaptive capacity provide valuable insights, they do not directly indicate resilience. Instead, these indicators reveal the capacities and mechanisms stemming from a complex interplay of structural and behavioral factors that strengthen regional resilience. The role and significance of these foundational elements are increasingly debated among scholars, with many advocating for a holistic approach that integrates both quantitative metrics and qualitative explorations (Bristow & Healy, 2020; Sensier et al., 2016).

However, although both dimensions hold conceptual significance in resilience discourse, empirical studies predominantly focus on resilience performance (Sutton & Arku, 2022). This typically involves assessing whether regions have demonstrated resilience and exploring the principal determinants of such resilience. These inquiries are vital as they inform policymakers and practitioners. The numerous determinants influencing a region's resilience underscore a fundamental attribute of regional economic resilience: its multifactor nature, as elucidated by Sutton et al. (2023).

2.2. Determinants of Regional Economic Resilience

Resilience determinants encompass a variety of factors that collectively influence the resilience of regional economies (Di Caro & Fratesi, 2018). Sutton et al. (2023) highlight that these determinants are dynamic, multi-scalar, and exhibit spatial variations, rooted in a blend of socio-economic and politico-institutional elements. Moreover, in their concise delineation, Sutton and Sutton (2024) emphasize that regions are subject to the influences of both internal factors and external forces and relationships. Internal factors are grounded in each economy's inherent resources, competencies, and historical attributes. Notably, the factors that strengthen regional resilience during crises often also promote growth and competitiveness in stable times, underscoring their vital role in regional economic prosperity. These determinants shed light on the different resilience profiles across regions, clarifying why certain regions are more resilient than others (Eichengreen et al., 2024; T. Kitsos et al., 2023; Martin & Sunley, 2020; Tóth et al., 2022; Webber et al., 2018).

The economic downturns of 2008 and 2022 catalyzed an extensive wave of empirical research, primarily oriented towards regional implications. This body of work encompasses studies on EU regions (Alessi et al., 2020; Borsekova & Korony, 2022; Brada et al., 2021; Davies, 2011; Di Caro & Fratesi, 2022; Di Pietro et al., 2021; Dijkstra et al., 2015; Giannakis & Bruggeman, 2017, 2020; Hippe et al., 2023; T. Kitsos et al., 2023; Muštra et al., 2017, 2020; Muštra, Šimundić, et al., 2023; Oprea et al., 2020; Ricordel, 2024; Sensier et al., 2016; Ştefan et al., 2023; Webber et al., 2018; Ženka et al., 2017) and is paralleled by country-specific analyses (Angulo et al., 2018; Artelaris et al., 2024; Borsati et al., 2022; Dawley et al., 2010; Di Caro, 2017; Đokić et al., 2016; Dubé & Polèse, 2016a; Elekes et al., 2024; Faggian et al., 2018; Fingleton et al., 2012; Gajewski, 2022; Hennebry, 2020; Iacobucci & Perugini, 2021; Kuliš et al., 2022; Martin & Gardiner, 2021; Pavelea et al., 2023; Sargento & Lopes, 2024; Šťastná et al., 2024; Ştefan et al., 2023; Terzo, 2021; Tupy et al., 2023). A salient observation from these studies is the varied regional responses to identical economic shocks, accentuating the imperative for a comprehensive understanding of the attributes that bolster regional resilience (Boschma, 2015).

As elucidated by Grabner (2021), drawing upon Martin & Sunley's (2015) framework, regional economic resilience is manifested through a confluence of three distinct factor clusters: compositional (which includes elements such as economic structure, industrial diversification, and developmental stage), collective (highlighting attributes like human capital, knowledge repositories, interconnectedness, and accessibilities), and contextual (encompassing institutions, the weave of social capital, and the implications of public policy). The breadth of scholarly discourse identifies diverse variables that capture potential determinants shaping regional responses to exogenous challenges. Notably, there is a link between the level of regional economic development and regions' ability to navigate and recover from external disruptions (Giannakis & Bruggeman, 2017; Giannakis & Papadas, 2021; Muštra et al., 2017). Additionally, human capital plays an important role in fostering innovation, developing new knowledge, and identifying emerging market opportunities, thereby aiding in crisis mitigation (Annoni et al., 2019; X. Wang & Li, 2022). Furthermore, urbanization and demographic scale inherently bolster resilience (Faggian et al., 2018; Tupy et al., 2021).

Trade openness exhibits an ambivalent relationship with regional resilience. While increased trade openness can make regions more vulnerable to external shocks due to greater interdependence, it can also enhance resilience by fostering industrial connections, improving product standards, and expanding trade partnerships (Z. Wang & Wei, 2021). Furthermore, Muštra et al. (2020) identified a direct correlation between a region's innovation performance and its capacities for both resistance and recovery. Broadening the scope to national dynamics, Petrić et al. (2021) underscored the importance of institutional frameworks in supporting regional resilience. Corroborating this stance, studies by Ezcurra and Rios (2019) and Rios and Gianmoena (2020) emphasized the crucial role of governance quality in shaping regional crisis responses. The sectoral makeup of regions frequently emerges as a central determinant in explicating the divergences in regional resilience to external challenges (Giannakis, Bruggeman, et al., 2024). This stems from the inherent vulnerability of certain economic sectors to business cycle oscillations (Ezcurra & Rios, 2019; Hennebry, 2020). Building upon this premise, Giannakis and Bruggeman (2020) suggest that the presence and interplay of sectors like agriculture, manufacturing, construction, and services significantly impact regional economic resilience.

Furthermore, Fratesi and Peruccia (2018) delved into the hypothesis that territorial capital, encompassing both tangible and intangible assets that signify a place's development potential, not only augments regional growth during normative periods but also serves as a bulwark during crises due to its structural nature. Their findings reveal heterogeneity in regional resilience based on differential endowments of territorial capital, with certain regions outperforming their national benchmarks, while others falter. In a parallel strand of research, tourism, specifically its intersection with natural and cultural heritage, has emerged as an influential factor in regional economic resilience (Romão, 2018, 2020a). Delving deeper into the realm of tourism, studies underscore the significance of cultural tourism as a potent driver resilience in various destinations (Neuts et al., 2021; Petrić et al., 2021). However, it's worth noting that while numerous determinants of regional economic resilience have been pinpointed, a substantial portion remains uncharted in the academic landscape (Di Caro & Fratesi, 2018; Sutton & Arku, 2022). Fields such as tourism economics (Jang & Kim, 2022) and the implications of cultural tourism (Muštra, Škrabić Perić, et al., 2023) demand deeper academic inquiry.

According to Sutton and Sutton (2024), regional economic resilience is formed not only by internal dynamics but also by external factors. These include the region's interactions with other economies through channels like trade, multinational companies, and foreign investment, as well as knowledge exchange and network participation. The significance of spatial factors in shaping regional economic resilience is emphasized due to the high degree of interconnectivity among regions. Sutton et al. (2023) suggest that regional factors can positively or negatively affect the resilience of neighboring economies. For instance, an economy might gain resilience due to the influx of human capital from a neighboring region, facilitated by labor mobility. Conversely, larger regions could potentially deplete the human capital of smaller ones (known as the backwash effect) by offering more job opportunities. Also, regions can experience benefits from knowledge spillovers, particularly from neighboring economies that are centers of technological or financial innovation. Similarly, in the context of tourism, a region may benefit from the influx of tourism in surrounding areas. For instance, Yang and Fik (2014) suggested that this increase in tourism demand positively influences adjacent regions due to tourists' tendency to explore multiple destinations. Although recent research provides insights into resilience determinants, the exploration of external forces and spatial relationships remains limited, as noted by Lemke et al. (2023). **By acknowledging the significance of spatial factors in influencing regional economic resilience and incorporating them into the examination of its determinants, the theoretical foundation for Hypothesis 2 is established.**

3. TOURISM, CULTURE, AND REGIONAL ECONOMIC RESILIENCE

In this chapter, emphasis is placed on examining the relationship between tourism, with a specific focus on cultural tourism, and regional economic resilience. Given the limited research on this topic (Muštra, Škrabić Perić, et al., 2023; Petrić et al., 2021), the nexus between tourism, particularly its cultural dimension, and economic development is explored. Where relevant, references are drawn from studies exploring the impacts of both general tourism and cultural tourism on regional economic resilience. This approach to the literature review is justified, given that determinants of resilience during crises and their subsequent recovery phases often align with those promoting growth in more stable periods (Sutton et al., 2023).

3.1. Tourism and Economic Development

Over the past seven decades, the global tourism sector has witnessed unprecedented growth. Illustrative of this trend, international arrivals escalated from 25 million in 1950 to a staggering 1.46 billion by 2019, having surpassed the 1 billion threshold in 2012 (Kuliš et al., 2018; UNWTO, 2021a). Parallel, international tourism receipts grew from USD 2 billion to an impressive USD 1.48 trillion (Šimundić, 2022; UNWTO, 2021a). These figures culminated in tourism contributing to 10.4% of the global GDP (amounting to USD 9.2 trillion) and 10.6% of worldwide employment (equating to 334 million jobs) in 2019, just before the pandemic's onset (Haini et al., 2023; WTTC, 2021). Europe, traditionally a tourism powerhouse, dominated with 51% of global tourist arrivals in 2019, with EU member states capturing most international visitors. The EU accounted for 40% of global arrivals and over 30% of total tourism receipts that year (UNWTO, 2018). In 2019, tourism contributed 9.9% to the EU's GDP, created 22.6 million jobs (11.6% of total employment), and international tourism represented 6% of the EU's total exports (ETC, 2022; WTTC, 2022). Between 2016 and 2020, the EU attracted investments in 880 tourism projects, valued at over USD 52.2 billion, creating about 96,000 jobs. Southern EU states, including Spain, France, Italy, Portugal, and Croatia drive these outcomes. In 2019, all top 10 EU NUTS-2 regions for tourist accommodation nights were in these countries, emphasizing their dominance in the EU tourism sector (European Commission, 2023c).

Throughout recent years, the relationship between tourism and economic development has garnered significant interest from scholars, policymakers, and industry experts (da Costa et al., 2023). The existing literature reveals numerous ways in which tourism bolsters economies. Specifically, tourism enhances income through foreign exchange, boosts domestic demand, and positively impacts balance of payments. It also fosters job creation and human capital, promotes economic diversification, encourages entrepreneurial ventures, and spurs infrastructure and investment initiatives. Its influence extends to the revitalization of regional economies, mitigating economic disparities between regions. These insights are substantiated by numerous academic studies (Archer et al., 2012; Dwyer et al., 2009; Matthew et al., 2021; Saleh et al., 2015; Wall & Mathieson, 2006). Liu et al. (2022) emphasize the importance of assessing the economic repercussions of tourism at both national and regional scales. Kronenberg and Fuchs (2022) explain that most assessments revolve around tracking tourist spending in the broader economy, grounded in sectoral interrelations and economic multipliers. These flows operate in three cycles: direct, indirect, and induced effects (Petrić et al., 2018). Direct effects arise from tourism-specific sectors and are influenced by tourist spending. Indirect effects relate to investments and government expenditures in tourism, as well as the value added from subsequent rounds of respending within tourism-linked industries. Induced effects capture the economic shifts in non-tourism sectors that cater to those working in the tourism domain (Song & Wu, 2022).

Tourism's economic impacts can be assessed using prominent methodologies: the input-output (I-O) model, computable general equilibrium (CGE) model, and the tourism satellite account (TSA) (Comerio & Strozzi, 2019). The TSA, in alignment with the System of National Accounts, traces tourist consumption patterns, revealing the nexus between tourism demand, supply chains, and wider industry integration (Frechtling, 2010). While TSA denotes tourism's direct impact, capturing the broader effects requires I-O or CGE models. The I-O model illuminates monetary interactions among industries, unveiling indirect and induced impacts and the wider economic outcomes of tourism spending (Haddad et al., 2013). Meanwhile, the CGE model provides a holistic view of tourism effects across sectors, accounting for inter-sectoral dynamics and offering a granular analysis, including wage and price fluctuations and labor and capital constraints (Blake et al., 2006). Within this stream of literature, scholars predominantly focus on deciphering the interdependencies between tourism and various sectors of national and regional economies. However, a seminal query looms large in the discourse on tourism economics: Does tourism act as a catalyst for economic growth? This inquiry is encapsulated in the theoretical framework of the Tourism-Led Growth Hypothesis (TLGH) (Albaladejo et al., 2023; Antonakakis et al., 2019; Candela & Figini, 2012; H. Kim et al., 2006; Tu & Zhang, 2020).

At the theoretical level, the TLGH finds its roots in the Export-Led Growth Hypothesis, which contends that an augmentation in exports can propel economic expansion (Brida et al., 2020; Nowak et al., 2007). The idea that tourism exerts an influence on economic growth was initially postulated by Lanza and Pigliaru (2000) and subsequently brought to empirical fruition by Balaguer and Cantavella-Jordá (2002) in their pioneering research. This pivotal question has since anchored myriad academic pursuits encompassing diverse methodologies, datasets, and case studies, as evidenced in systematic literature reviews on the TLGH (Ahmad et al., 2020; Bassil et al., 2023; Brida et al., 2016, 2023; Gwenhure & Odhiambo, 2017; A. Liu et al., 2022; Pablo-Romero & Molina, 2013), and complemented by meta-analytical studies (Castro-Nuño et al., 2013; Fonseca & Sánchez Rivero, 2020; Nunkoo et al., 2020). In TLGH-focused research, economic growth is typically measured via metrics like total GDP, GDP per capita, or GDP growth rates. This growth is then modeled in relation to tourism development, which is often represented by metrics such as tourist arrivals, overnights, expenditures, or receipts (Song & Wu, 2022). To delve deeper into the intricacies of TLGH, researchers employ a diverse array of econometric techniques including the Granger causality test, ordinary least squares, autoregressive distributed lag models, the generalized method of moments, vector error-correction models, spatial dynamic general equilibrium models, and various nonlinear modeling strategies. The data underpinning these analyses spans multiple formats, from time series and cross-sectional to panel data, with the granularity of the data oscillating between monthly, quarterly, and annual frequencies. The connection between tourism and economic growth, contingent upon the selected methodological approach and model specification, is examined either in isolation or alongside additional explanatory variables. Incorporating these variables often provides deeper insights into the complex dynamics underpinning the tourism-economic growth relationship (Ansari, 2024; Pablo-Romero & Molina, 2013; Pérez-Rodríguez et al., 2022; Song & Wu, 2022).

The verification of the TLGH has been thoroughly explored across various European territories. While some studies target individual countries, others offer cross-country evaluations, especially focusing on the Mediterranean region of the EU. For instance, positive affirmations of the TLGH have been documented in countries such as Spain (Balsalobre-Lorente et al., 2021), France (Tarkang et al., 2023), Italy (Cortés-Jiménez & Pulina, 2010), Croatia (Pavlić et al., 2015), Portugal (Bento, 2016), Cyprus (Louca, 2006), and Malta (Katircioglu, 2009b). On a broader spectrum, the cross-country analyses of Southern European nations affirming the TLGH include studies by Aslan et al. (2021), Dritsakis (2012), Gao et al. (2021), Proença and Soukiazis (2008), Šimundić and Kuliš (2016), and Tugcu (2014). Beyond the Mediterranean ambit, examinations have expanded to encompass the entirety of the EU member states (Balsalobre-Lorente & Leitão, 2020; Matzana et al., 2022; Meșter et al., 2023) and even have a global scope (Holzner, 2011; Mitra, 2019; Shahzad et al., 2017). Recently, regional science has witnessed burgeoning interest in tourism, stemming from the confluence of economic geography and tourism geography, with tourism being seen as a catalyst for economic development at the subnational level (Brouder, 2017; Calero & Turner, 2020; Hassink & Ma, 2017; Romão, 2021). This niche within the literature provides invaluable insights, shedding light on the relationship between tourism and the economy at a detailed level, insights that are sometimes overshadowed in broader national studies (Bassil et al., 2023). In the context of regional research in Europe, the validation of TLGH has been documented in studies encompassing regions in Spain (Cortés-Jiménez, 2008), France (Pascariu & Ţigănaşu, 2014), Italy (Bronzini et al., 2022), Croatia (Trinajstić et al., 2018), Portugal (Andraz et al., 2015), and Greece (Eleftheriou & Sambracos, 2019). Additionally, there are studies with a broader scope, such as those covering Mediterranean regions (Camatti et al., 2021; Mazzola et al., 2019, 2022), and more extensive analyses that include a comprehensive suite of EU regions (Harb & Bassil, 2021, 2022; Paci & Marrocu, 2014; Romão & Neuts, 2017; Vuković et al., 2022).

While a significant body of research supports tourism as a driver of economic growth, there is a strand of literature that offers divergent conclusions. Li et al. (2018) found that, although 70% of studies acknowledged tourism's positive economic impact, the remainder identified a weak, inconclusive, or occasionally negative relationship. J. Mikulić et al. (2021) caution that the economic benefits of tourism can come with associated costs. The wider discussion in tourism economics recognizes potential drawbacks linked with tourism-driven economies. For example, Wall and Mathieson (2006) highlight several economic challenges introduced by tourism, such as over-reliance on the sector, inflationary tendencies, elevated land values, an increased inclination to import, issues related to seasonality, reduced returns on investment, and the onset of other external costs. The debate extends to tourism multipliers, with concerns about significant revenue leakages from the host economy (Haddad et al., 2013). Discourse also emerges around tourism's "crowding-out" effects, potentially marginalizing other sectors or intensifying intra-sector competition (Schuckert & Wu, 2021). A further challenge arises from the seasonality of international tourist arrivals that leads to fluctuations in profits and labor market instabilities (Cannas, 2012). The ripple effects of tourism seasonality pose challenges for locals, manifesting in housing affordability issues, difficulties in preserving their economic status, and unpredictable revenue fluctuations (J. Mikulić et al., 2021), as well as potentially steering the trajectories of high-growth enterprises negatively (Stojčić et al., 2022). There is also the issue of overtourism, where the tourist influx surpasses sustainable levels, adversely impacting residents and straining resources (van der Borg, 2022b). In certain settings, tourism might amplify socio-economic disparities (Y. Wang & Tziamalis, 2023) or redirect vital human capital from other crucial sectors (Kožić, 2019).

Considering the potential economic drawbacks of tourism, several scholarly papers have presented mixed findings on the TLGH. Figini and Vici (2010) found that countries predominantly dependent on tourism did not consistently outpace other nations in growth. Du et al. (2016) identified a relationship between international tourism and growth, which weakened upon controlling for income variables. Enilov and Wang (2022) suggest that tourism boosts growth in developing countries, a pattern not observed in developed ones. Using European data, Antonakakis et al. (2015) detected temporal fluctuations in the tourism-growth link, a view shared by Škrinjarić (2019). On a regional scale, Romão and Nijkamp (2018), examining a broad subset of EU regions, identified significant growth influences from tourism's gross value added but observed no significant effects from tourism demand or employment. In a subsequent study, Romão (2020a), focusing on tourism-prioritized European regions, indicated that while high tourism demand boosts growth, excessive tourism sector employment might hinder it. Shifting focus from ambiguous findings, some scholars counter the TLGH by proposing the Economic-Driven Tourism Growth Hypothesis, suggesting economic growth primarily propels tourism, not vice versa (Oh, 2005; Payne & Mervar, 2010). Others, endorsing the neutrality hypothesis, found negligible links between tourism and economic growth (Katircioglu, 2009a; Sequeira & Campos, 2007). Notably, a subsection of the literature even indicates a potential negative correlation between the two variables under specific conditions, as highlighted in studies by Capó et al. (2007), and Ma et al. (2015).

Within the literature that contradicts the TLGH, theoretical and methodological arguments emerge. From a theoretical standpoint, Eugenio-Martin et al. (2008) posit that tourism's capacity to stimulate growth depends on a country's economic developmental stage. Du et al. (2016) emphasize the importance of infrastructure and skilled labor. Adedoyin et al. (2022)

highlight governance's role, while Li et al. (2018) discuss the implications of policy choices and tourism types. According to Kožić et al. (2022), there's a link between tourism and business cycles, suggesting a moderately procyclical characteristic of tourism activities. This implies that structural breaks can influence how tourism impacts economic growth, as observed by Kumar and Patel (2023). Adamou and Clerides (2009) link tourism specialization to initial economic growth, but note diminishing returns with increased specialization. This aligns with Butler's (1980) Tourism Area Life Cycle Model (TALC), which maps a destination's stages: exploration, involvement, development, and consolidation, each marked by visitor inflows, culminating in stagnation and eventually the "post-stagnation" phase (Hell & Petrić, 2021). While TALC clarifies the link between tourism and economic growth, relying solely on it is restrictive, as destinations at similar life cycle stages can have varied economic results due to inherent structures. Zuo and Huang (2018) bridge this gap, integrating economic return principles with TALC, elucidating a dynamic relationship. Herein, early TALC stages catalyze economic growth via increasing returns, transitioning to diminishing returns and waning economic momentum in later phases.

Fonseca and Sánchez Rivero (2020) affirmed the empirical manifestation of TLGH using meta-regression analysis. However, they contested its authenticity, uncovering a pervasive bias in statistical significance within the scholarly discourse on the tourism-growth nexus. This sensitivity of results, as highlighted by Pérez-Rodríguez et al. (2022), pertains to variations in national datasets, model specifics, estimation techniques, and time frame considerations. Adding to the methodological critique, Song and Wu (2022) posited that, within frameworks elucidating TLGH, tourism variables are frequently integrated as factor inputs within production functions, often without adequate theoretical grounding.

To synthesize, a vast majority of the over two hundred case studies reviewed in prior assessments resonate with the assertions of TLGH, showcasing statistically significant and positive estimations (Brida et al., 2020). Yet, Romão (2018) draws attention to the heterogeneity of results across varied contexts and temporalities suggesting that the relationship between tourism development and economic progression is neither strictly deterministic nor entirely predictable. Such observations underscore the necessity for more refined research and insights to further elucidate these complexities.

3.2. Cultural Tourism and Economic Development

Building on the prior chapter's discussion of tourism as a catalyst for economic growth, it is pivotal to recognize, as highlighted by Muštra, Škrabić Perić, et al. (2023), that cultural resources play a crucial role in shaping destination attractiveness, as underscored in tourism competitiveness models (Uppink & Soshkin, 2022). Notably, cultural heritage is often singled out as the most valued asset, as affirmed by M.-Y. Wang et al. (2024) and D. Mikulić et al. (2023). Although precise numbers remain elusive, it is recurrently cited that around 40% of global tourists' preferences are influenced by cultural attributes (Richards, 2022). Corroborating this, Naramski et al. (2022), referencing an OECD document, suggest this figure rises to 50% when considering European and American tourist preferences. Europe's cultural heritage is of paramount importance, positioning the continent as a top cultural tourism spot and a leading global tourist region (European Commission, 2023a; Šimundić et al., 2022). A study by ESPON (Lykogianni et al., 2019) recognizes cultural heritage as a vital part of Europe's socio-economic framework. While it is a legacy from the past, cultural heritage remains relevant today, acting as a vibrant cultural asset that fuels various economic activities and shapes the broader economy, stimulating job creation and GDP growth. Highlighting its significance, Neuts et al. (2021) list the main advantages of cultural heritage, such as enhancing the appeal of regions, cities, towns, and rural areas; offering investment opportunities in cultural tourism; acting as a catalyst for innovation and creativity; promoting sustainable heritage-driven revitalization; and enhancing the overall quality of life. Patuelli et al. (2016) suggest that cultural tourism enables regions to: broaden their customer base, diversify their offerings, and lengthen tourists' stays and minimize seasonality.

Camagni et al. (2020) conceptualize cultural heritage as an integral component of territorial capital. They posit that a rich endowment of cultural heritage positively influences economic progression, with tourism serving as the foremost channel for this advantageous impact. Certainly, Biagi et al. (2021) highlight that tourism emerges as a smart specialization priority in nearly half of the EU regions. Concurrently, Pertoldi (2016) discerned that a substantial 73% of these regions harness their cultural heritage as a pivotal asset for tourism industries. Furthermore, findings from Romão (2020b) elucidate that the implications of smart specialization strategies suggest a pronounced potential for the tourism sector to capitalize on the advantages conferred by cultural proximity. Indeed, cultural heritage stands as one of the most prominent resources utilized by tourism (Csapo, 2012) and serves as a crucial factor in crafting a destination's distinctiveness while providing a foundation for authentic and differentiated tourism experiences (Romão, 2018). Timothy (2021) posits that a majority of contemporary tourist attractions and destinations are based on cultural heritage elements. This notion is corroborated by Gómez-Vega et al. (2021), who conducted a multicriteria-decision-making approach using the Travel and Tourism Competitiveness (T&TC) report as the primary data source for a sample of 136 tourist destinations. Their analysis revealed that, among the 14 pillars of T&TC, cultural resources were of the utmost importance. Furthermore, Bazargani and Kiliç (2021) also confirmed that cultural resources are critical determinants for boosting tourism performance. Moreover, Pompili et al. (2019) elucidated that cultural endowments, characterized by the presence of museums, World Heritage sites, and the frequency of cultural events, serve as a relevant pull factor to stimulate both domestic and foreign tourism demand.

E. Panzera (2022) elucidates that despite considerable efforts in scientific literature, a definitive consensus regarding a quantifiable link between cultural heritage endowment and tourism attractiveness remains elusive. Generally, when examining the role of cultural heritage in stimulating tourism demand, UNESCO World Heritage Sites are the most commonly employed proxy for tangible forms of cultural heritage. Nevertheless, the findings in the existing body of literature are inconclusive (Cellini & Cuccia, 2016). For instance, in a study analyzing the impact of cultural indicators on tourism performance at the national level within EU countries, Škrabić Perić et al. (2021) discovered that the number of UNESCO sites had no significant influence on the number of tourism overnights but positively affected international tourism receipts and tourism employment. Moreover, Y. Wang (2024) et al. found that in China’s regions, initiation of World Heritage Sites can promote tourism, while their inscription reduces tourism revenue. Seeking to offer a comprehensive conclusion on the topic, Yang et al. (2019) conducted a meta-analysis synthesizing the effects of World Heritage Site status. They examined 344 econometric estimates from 43 studies and confirmed a significant tourism-enhancing effect at cultural UNESCO sites. In the regional or local context of European regions, several studies have noted a positive correlation between regional endowments in cultural resources, including UNESCO heritage materials, nationally or regionally defined monuments, cultural landscapes, and museums, and the volume of tourism demand (L. Noonan, 2023; E. Panzera et al., 2021; Romão, 2015; Romão et al., 2017; Romão & Neuts, 2017).

Intangible cultural heritage is much less common in research, although its importance is growing (Dalle Nogare & Devesa, 2023). For instance, in a study on the impacts of UNESCO-listed tangible and intangible heritage on tourism, Bak et al. (2019) found that, in a sample of 72 countries between 1995 and 2012, both types of heritage positively impacted international tourism demand, with intangible heritage being more beneficial. The authors explain this by noting that most international tourists have limited information about heritage sites. The information asymmetry between heritage providers and international tourists is particularly pronounced for intangible cultural heritage compared to tangible heritage. This gap arises mainly from the cultural contexts of the heritage and the cultural diversity across borders. Therefore, intangible cultural heritage benefits more from UNESCO inscription than tangible heritage in attracting tourists. In addition to its significance in attracting international tourists, the importance of intangible UNESCO heritage in drawing domestic tourists has also been recognized in recent research, in the case of Spain (García del Hoyo & Jiménez de Madariaga, 2024).

Richards (2018) emphasizes that while the relationship between culture and tourism has always been inherently connected, it is only in recent decades that their association has been explicitly identified as a unique form of consumption, termed cultural tourism. Škrabić Perić et al. (2021) expound that culture holds potential in cultivating destination distinctiveness within the tourism sector, while tourism simultaneously offers prospects for bolstering cultural production and enhancing the economic performance of the cultural sector. The symbiotic relationship between culture and tourism is also acknowledged by UNWTO (UNWTO, 2018). In a survey conducted among UNWTO Member States, participants were prompted to identify the various elements of culture and heritage incorporated into their classification of "cultural tourism." The vast majority, approximately 95% of participants (cultural experts), indicated their inclusion of both tangible and intangible elements of cultural heritage. Tangible aspects consisted of both global and national monuments, historical edifices, locations, and cultural pathways. Intangible elements, on the other hand, incorporated traditions, gastronomy, craftsmanship, festivals, and similar elements. Therefore, it can be observed that both tangible and intangible elements of cultural heritage hold equal importance in cultural tourism. However, this has not always been the case. In recent decades, traditional concepts of heritage have been updated (Golinelli, 2015). Initially, the prevailing view of cultural heritage focused heavily on its material (physical) characteristics and the protection of elements related to historic and natural settings. Over time, this concept has evolved into a more dynamic understanding that, in addition to the material aspects of cultural heritage, also emphasizes intangible dimensions. This shift highlights the importance of traditions, customs, practices, and know-how, with the material aspects of cultural goods serving to preserve the culture, identity, and value systems of communities, populations, and ethnic groups (Barile, 2015).

Timothy (2021) delineates that the phrases "cultural tourism" and "heritage tourism" are habitually referenced in academic literature as separate, albeit related or overlapping, phenomena. He further encapsulates that cultural tourism is inclusive of built heritage, enduring cultural practices, ancient artifacts, as well as contemporary art and culture. Furthermore, he underscores that although some scholars prefer to discern cultural tourism from heritage tourism, contingent on individual motivations or the nature of the resources involved, any extant distinctions are typically slight, thereby allowing the two terms to be used interchangeably. More recently, Matteucci and Von Zumbusch (2020) propose a re-conceptualization of cultural tourism. According to their definition, cultural tourism is a distinct variety of tourism in which tourists interact with heritage, local cultural and creative endeavors, and the daily cultural routines of host communities. This engagement aims to facilitate the exchange of experiences characterized by their educational, aesthetic, creative, emotional, or recreational qualities.

Recently, cultural tourism is recognized as special form of tourism that can enable and drive regional development, as well as contribute to the sustainability and resilience of destinations within the EU (European Commission, 2019, 2022; D. Mikulić & Petrić, 2014; Neuts, 2022; Neuts et al., 2021; Petrić et al., 2020, 2021; Russo & van der Borg, 2006; Stoica et al., 2022). E. Panzera (2022) explains that the most pronounced and evident link between cultural heritage and economic development is manifested in tourism. Starting in the 1970s and proliferating more broadly in the 1980s, heritage tourism has risen as a burgeoning phenomenon. Local cultural resources, inclusive of cultural heritage, started to be perceived as elements enhancing territorial allure, distinction, and competitiveness. The bond between cultural heritage and tourism became increasingly intertwined. Moreover, due to its varied and comprehensive values, cultural heritage can indeed act as a unique developmental catalyst. When regarded as an economic asset, the economic implications of cultural heritage on local economies become substantial, stemming from its economic worth, such as tourist expenditure (e.g. entrance fees to historical sites and museums, proceeds from guided tours, and sales of handicrafts), and related investments. Madden and Shipley (2012) posited that cultural heritage fuels economic growth, fostering job opportunities both within its domain and in allied sectors, with the economic relevance of the cultural and creative sectors linked mainly to tourism activities (Cirillo & De Tullio, 2021; Pacelli & Sica, 2020).

The depth of Europe's cultural heritage, combined with the dynamism of its cultural and creative industries, has increasingly influenced economic outcomes. These sectors contribute an estimated 5.3% to the European GVA and secure employment for over 12 million individuals, amounting to 7.5% of the total EU workforce (European Commission, 2021c). Based on ESPON (Prezioso et al., 2020) data, 72.9% of employment in the cultural heritage domain is attributed to tourism. Furthermore, tourism-centric endeavors account for 63.2% of the GVA derived from cultural heritage activities, underscoring the paramount role of tourism in association with cultural heritage. As Jelinčić and Senkić (2017) observed, before the onset of the COVID-19 pandemic, the global cultural tourism market was projected to be worth between 800 billion and 1.1 trillion USD.

E. Panzera (2022) presents empirical findings that reinforce the significance attributed to tourism within the realm of economic literature. This is primarily due to the role of tourism attractiveness as a key conduit for the influence of cultural heritage on the economic growth of European regions. Using a structural equation model that includes two specific indicators, UNESCO World Heritage Sites and regional monument counts, Panzera validates the mediating function of tourism in this context. Similarly, in Kuliš's (2023) regional analysis for Croatia, the nexus between cultural heritage (which includes UNESCO listings as well as national material and immaterial assets), tourism demand, and regional development was explored. The empirical findings underscored that cultural heritage exerts a significant and positive effect on regional development, both directly and indirectly, with tourism demand acting as an important driver in this dynamic. Moreover, examining Italian municipalities with heritage sites added in the last two decades, Bertacchini et al (2024) used a heterogeneity-robust event study analysis to show that World Heritage listing has a significant impact on income.

Besides, Tubadji (Tubadji, 2012) offers an insightful delineation of the culture-based development (CBD) concept, identifying culture as an encompassing socio-economic determinant. The CBD concept advances by delineating living culture and cultural heritage as the two components of cultural capital, which are interconnected in a path-dependent manner. Substantial positive results supporting the CBD concept, signifying that cultural capital positively influences economic development, have been demonstrated at the regional level for the European Union (Tubadji & Nijkamp, 2015a) and the United States (Tubadji et al., 2015), as well as for Germany (Tubadji, 2012) and Greece (Tubadji & Nijkamp, 2015b) specifically.

Similarly, Kostakis et al. (2020) discerned a positive correlation between cultural heritage and regional growth, corroborating the hypothesis of culture-led growth within the context of the Greek economy. Correa-Quezada et al. (2018) conducted an investigation to evaluate the impact of employment within the creative industries on regional economic expansion in Ecuador. Their empirical findings substantiated a significant correlation between creative employment and regional productivity and development.

Nonetheless, Camagni et al. (2020) emphasize that, despite its undeniable importance, cultural tourism is not the exclusive mechanism through which tangible cultural heritage can impact local performance, as more abstract and complex processes may be involved. Their empirical findings suggest that the impact of cultural heritage on local development is a product of its interaction with other elements of territorial capital, specifically the intangible territorial components such as creativity, identity, and governance quality. Moreover, E. Panzera (2022) presents a novel pathway related to the influence of cultural heritage in shaping or strengthening territorial identities and their consequent economic ramifications. Furthermore, Cerisola (2019a) advances the debate by conceptually and empirically broadening the idea that creativity, manifested in various forms, can function as a mediating factor, clarifying the local ability to capitalize on cultural heritage for economic objectives. Investigating the Italian provinces at the NUTS-3 level, she determined that cultural heritage indirectly affects economic performance via its impact on artistic and scientific creativity. The empirical analysis reveals that this relationship is particularly evident in affluent, well-educated, and urban settings. Cerisola and Panzera (2022) conducted an analysis to explore the relationship between urban cultural engagement and regional output in cities rich in culture and creativity. Their research revealed a positive association between local cultural participation and economic productivity.

As a result of such a strong interrelation between culture and tourism, culture has been increasingly employed as an aspect of the tourism product and destination image strategies, while tourism has been integrated into cultural development strategies to support cultural heritage and cultural production (OECD, 2009). The 2030 Agenda for Sustainable Development, as highlighted by UNESCO (2018), marks the international community's inaugural recognition of culture's pivotal role in fostering development. Andrés et al. (2019) affirm the undeniable synergy between cultural and tourism sectors, as mirrored in key EU strategic documents. Initiatives such as the European Cultural Routes, begun in 1987, underscore heritage promotion, sustainable cultural tourism, and transnational collaboration

(Council of Europe, 2019). The 1985-established European Capitals of Culture (ECOC) initiative accentuates culture's role in urban evolution (European Commission, 2023d). The EU's present strategic framework on cultural heritage encompasses elements like the European Commission Communication: "Towards an integrated approach to cultural heritage for Europe", New European Agenda for Culture, The European Council 2023-26 Work Plan for Culture, The European Framework for Action on Cultural Heritage, and others, all aiming at safeguarding and promulgating European cultural assets, with several backing from EU financial programs (European Commission, 2023b). The European Commission's flagship program for the cultural and creative sectors is the Creative Europe program. Between 2014 and 2020, it allocated EUR 1.8 billion in financial support to the sector, and this backing will be augmented with an additional EUR 2.44 billion from 2021 to 2027. Additionally, various other EU initiatives and themes can benefit the sector. While some of these, such as Horizon Europe, Erasmus+, and the European Social Fund+, might not be immediately associated with cultural and creative domains, they provide pertinent opportunities (European Commission, 2021b).

3.3. Tourism, Culture, and Regional Economic Resilience

In recent academic discourse, scholars such as Lew and Cheer (2018) have observed the initial reticence within the tourism research community to embrace the concept of resilience. However, over the past decade, there has been an evident surge in interest in resilience in tourism studies (Ritchie & Jiang, 2019). As articulated by Cehan et al. (2023), the incorporation of resilience thinking into tourism is a relatively new phenomenon, with some viewing it as a potential alternative to the prevailing sustainability development paradigm of the contemporary era. Esteemed scholars like Kato (2018) and Cochrane (2010) posit that Farrell and Twining-Ward (2005) pioneered the application of resilience to tourism, aiming to enrich the understanding of sustainable tourism within the ambit of system dynamics. Subsequent to their work, Tyrrell and Johnston (2008) employed the term resilience in their academic exploration, postulating a system of equations to elucidate the resilience facet within a dynamic sustainable tourism model. Delving beyond the overarching nexus of tourism as a complex socio-ecological system and resilience (Farsari, 2023), it is unsurprising that, due to its economic ramifications, tourism research has extensively addressed the economic aspects of resilience (Lew, 2014). Over time, the adoption of resilience within tourism academia has matured, leading scholars to discern between the resilience of tourism systems and the impact of tourism on the resilience of various other systems (Berbés-Blázquez & Scott, 2017; Ibanescu et al., 2020).

In a synthesizing effort, Cehan et al. (2023) delineate three main perspectives concerning the interrelation between tourism and resilience. Firstly, there is a conceptualization of tourism as a system that, when confronted by shocks, whether natural or anthropic, either demonstrates resilience or needs to be bolstered for resilience. Secondly, tourism is viewed as an economic activity, one that can potentiate the resilience of other entwined systems, thereby positioning tourism as a pivotal driver of resilience. The third perspective positions tourism in a more adversarial light, portraying it as the "aggressor" or the exogenous shock. In this lens, the emphasis is on the imperative for other systems to cultivate resilience against the potential adverse impacts of tourism. Moving deeper into the interplay between economic and tourism resilience at the regional dimension, research typically follows two distinct trajectories. The first stream examines the role of tourism in shaping regional economic resilience, often encapsulated under the term "tourism-induced resilience" (Ibanescu et al., 2020). In contrast, the second stream focuses on "tourism resilience" per se, elucidating tourism's adaptive response mechanisms to adverse events and the inherent capability of regions to recuperate their tourism demand following unforeseen shocks (Falk et al., 2022). **This dissertation situates itself within the realm of tourism-induced resilience, aiming to elucidate the pivotal role that tourism, and more specifically cultural tourism, plays in enhancing resilience performance.** Within this context, the significance of tourism is examined based on two primary dimensions of economic resilience performance: economic resistance and economic recovery (Neuts et al., 2023).

3.3.1. Tourism, Culture, and Economic Vulnerability

The tourism sector, by its nature, is marked by a pronounced degree of uncertainty, making it especially vulnerable to various risks (Hall, 2010; Kocak et al., 2023; Pappas et al., 2023; Ritchie, 2004; Wut et al., 2021). Post the turn of the millennium, numerous shock events have cast adverse imprints on the tourism landscape (Provenzano & Volo, 2022). Specifically, tourism has felt the negative repercussions of events such as terror attacks (Araña & León, 2008; Santana-Gallego & Fourie, 2022), geopolitical conflicts (Tomej et al., 2023), the 2008/2009 global financial crisis (Ritchie & Jiang, 2019; Smeral, 2009; Song & Lin, 2010), and natural disasters (Biardeau & Sahli, 2024; H. Kim & Marcouiller, 2015). Additionally, challenges posed by climate change (Dogru et al., 2019; Scott & Gössling, 2022) and the emergence of infectious diseases, including SARS, swine flu, MERS, and notably, the COVID-19 pandemic, have further magnified the sector's fragility (Karabulut et al., 2020; McKercher & Chon, 2004; Page et al., 2012; Selvanathan et al., 2022; Zopiatis et al., 2021).

The tourism sector frequently manifests increased vulnerability when confronted by unforeseen shocks compared to other economic domains (Alvarez et al., 2022). Drawing upon the 2008/09 global financial crisis as an example, Cellini and Cuccia (2015) highlighted the problem of tourism resilience. Their observations underscored that in 2009, a year marked by a notable decline in the global per capita GDP by roughly 3.4%, the world's tourist arrivals receded by approximately 3.8%. Concurrently, tourism receipts witnessed a more pronounced contraction, decreasing by 9.4%. The extent to which tourism is intertwined with other economic sectors can determine a region's overall economic resilience. Specifically, the vulnerability of the tourism industry to external shocks might lead to a broader economic vulnerability if tourism serves as a pillar industry (R. R. Kumar & Stauvermann, 2023; Okafor et al., 2022; Vayá et al., 2024). Consequently, it is understandable that researchers have concentrated on examining the role of tourism in affecting the resilience of the overall economy during the resistance phase. Some empirical evidence is drawn from the subsequently mentioned studies, predominantly related to the economic shock induced by the 2008/09 financial crisis.

In their global assessment, Nguyen and Su (2020) found that the proportion of GDP dedicated to domestic tourism significantly heightens economic vulnerability. Furthermore, their later research (Nguyen & Su, 2022) revealed that international tourism also augments the economic vulnerability of the destination countries. In a comprehensive study of U.S. counties, Watson and Deller (2022) determined that when tourism dominates a region's industrial composition, it diminishes the region's economic resilience during downturns. Turning to Europe, Milio's (2014) analysis illuminated that regions with marked tourism specialization demonstrated lower resilience. This observation aligns with the conclusions drawn by Romão et al.'s (2016) study on the Algarve region which, due to its dependency on tourism as a pivotal economic and social driver, saw reduced tourism demand and a marked rise in unemployment post an economic shock. Expanding this perspective, Romão (2020a) evaluated a diverse spectrum of European NUTS-2 regions where tourism is a strategic priority. The conclusion underscored that elevated tourism employment intensifies regional vulnerabilities, culminating in adverse effects on regional economies during shocks. Reinforcing this pattern, Cellini and Cuccia (2015) illustrated that Italian regions, particularly those where sea-side tourism was predominant, experienced a more pronounced negative shock, thereby indicating reduced economic resilience.

The COVID-19 pandemic has further reaffirmed the stylized fact that tourism is highly vulnerable to external shocks (Alvarez et al., 2022; Brandano et al., 2024; Neuts et al., 2023). Certainly, the COVID-19 pandemic had a significant impact on the tourism industry, largely due to measures such as social distancing, reduced availability of international transportation, and government policies such as lockdowns and travel restrictions (Sigala, 2020; Yang et al., 2021). The consequences have been characterized as "catastrophic", with the tourism industries (Arbulú et al., 2021; Duro et al., 2021; Koçak et al., 2023; J. Mikulić, 2020; Ntounis et al., 2022; Payne, Nazlioglu, et al., 2023; Petrić et al., 2020; Price et al., 2022), particularly the cultural tourism segment encompassing cultural and creative sectors (Campoy-Muñoz et al., 2023; Flew & Kirkwood, 2021; Kvítková & Petru, 2023; Matteucci et al., 2022; Naramski et al., 2022; Richards & Fernandes, 2023; Wallace et al., 2023), arguably facing the most severe impact. The UNWTO (2022b) reports that the number of international tourists declined by 73% in 2020, the most substantial annual decrease in tourism on record. The contribution of the travel and tourism sector to the global economy in terms of GDP and employment was markedly reduced in 2020 compared to previous years, as a result of the COVID-19 pandemic. According to the WTTC (2022), tourism's global GDP contribution decreased by 50.4% (nearly USD 4.9 trillion) and 62 million jobs were lost in 2020, leaving only 272 million employed in the industry worldwide (drop of 18.3%). In the EU the travel and tourism sector's contribution to overall GDP decreased by 45.2%, resulting in a loss of 638.4 billion EUR and over 2 million jobs (a 13.2% drop).

Cultural tourism also experienced significant challenges due to the enforcement of travel restrictions and measures against COVID-19 (Barros, 2022; Ginzarly & Jordan Srour, 2022; Pasikowska-Schnass & Widuto, 2022). According to the UNWTO Inclusive Recovery Guide (UNWTO, 2021b), during 2020, up to 90% of nations either closed access to World Heritage Sites. In the same vein, about 70% of the world's museums saw a temporary cessation of operations, with predictions suggesting over 10% may remain permanently shuttered. Traditionally, cities, which are pivotal hubs of cultural tourism, were among the earliest and most severely impacted by the pandemic, leading to a significant disruption in urban tourism activities (van der Borg, 2022a). This abrupt halt has gravely impacted the cultural sector, with an alarming loss of around 10 million jobs in 2020 and projected revenue setbacks oscillating between 20 and 40 percent. Notably, the sector's decline in gross value added eclipsed the global average by eight times, registering an overall drop of roughly 25% (2022). Intangible aspects of cultural heritage, as well, experienced significant disruptions. Events, rituals, and music and food festivals faced widespread cancellations. These disruptions affected not only the economic sphere but also inflicted socio-cultural wounds on local communities (Roigé et al., 2021; UNWTO, 2021b). This period was also challenging for artists and cultural professionals, with many grappling with severe economic and social uncertainties (Raevskikh et al., 2022). Empirical evidence indicates the adverse effects of the pandemic on cultural tourism demand. Analyzing data from 20 European countries, Jurlin (2022) found that destinations with a higher concentration of UNESCO heritage sites experienced a pronounced decline in tourism demand in 2020. Additionally, an analysis by Kuliš et al. (2023), spanning more than 220 EU NUTS-2 regions, determined that tourism resilience during the resistance phase of the COVID-19 shock, specifically comparing tourism demand in 2020 to 2019, inversely correlated with the presence of World Heritage Sites in these regions.

Considering the linkages of tourism with other economic sectors (Šimundić et al., 2023), it is unsurprising that the COVID-19 pandemic had a profound impact on the economic activity of regions heavily reliant on tourism (Böhme et al., 2020). For instance, destinations in the latest stage of the TALC model, such as many Mediterranean and Alpine regions, felt this impact intensely (Bailey et al., 2021; Butler, 2022). In an empirical study currently underway, Neuts et al. (2023) are examining the role of cultural tourism in influencing overall economic resilience during the resistance phase of the COVID-19 shock. Their preliminary findings suggest that regions with a greater abundance of World Heritage Sites and higher levels of tourism demand demonstrated diminished resistance, leading to reduced resilience levels.

Based on the aforementioned discussions exploring the interplay between tourism, culture, and economic vulnerability, the foundation for the formulation of Hypothesis H1a is established.

3.3.2. Tourism, Culture, and Economic Recovery

Tourism, despite manifesting pronounced vulnerability to a variety of shocks, including conflicts, pandemics, environmental perturbations, and socio-economic disruptions, has repeatedly demonstrated resilience, as noted by numerous scholars. While these adversities have momentarily impacted tourist demand, no single event has resulted in a prolonged and substantial decline in international arrivals. Historically, the tourism sector has showcased an impressive ability to not only recover swiftly but also to adapt, innovate, and evolve. Such dynamism, coupled with elasticity during economic recoveries that often surpasses that of the broader economy, has positioned tourism favorably amongst policymakers. This perspective is supported by an extensive body of literature, including works by Berbekova et al. (2021), Cellini and Cuccia (2015), Dogru and Bulut (2018), Jenkins (2020), Jucan and Jucan (2013), Morakabati (2020), Orchiston and Higham (2016), Papatheodorou et al. (2010), Papatheodorou and Pappas (2017), Pappas et al. (2023), Prayag et al. (2024), Provenzano and Volo (2022), Reddy et al. (2020), Ritchie (2004), Sheldon and Dwyer (2010), Y. Wang et al. (2022), and Wu et al. (2022).

For example, drawing on data from 2010, the UNWTO (Steiner et al., 2013) reported that global tourism exhibited a robust recovery, defying initial projections, after the downturn it experienced in late 2008 and 2009 due to the global financial crisis and subsequent economic recession. Internationally, tourist arrivals increased by 7% from the previous year, a growth rate that was more than double that of the broader economy. A significant majority of destinations reported growth, often in double digits, compensating for previous losses or approaching their aspirational targets. The fact that tourism is more resilient than the majority of other economic activities, primarily due to its robust recovery capabilities, is a view that is almost unanimously accepted and recognized as a stylized fact in the literature (Ibanescu et al., 2023). Owing to its intrinsic resilience, combined with its strong growth dynamics and linkages with other sectors of the regional economy, tourism is seen as a tool to promote overall regional economic resilience during post-shock recovery phases (Bellini et al., 2017; Innerhofer et al., 2018). This viewpoint is supported by numerous research studies. Through their inquiry into the post-earthquake context in China, several researchers, including Cheng and Zhang (2020), Xu et al. (2023), and Zhang (2023), highlighted the role of tourism development in promoting economic recovery and resilience in the aftermath of a disaster shock. Turning to the United States, Lee et al. (2021) analyzed economic resilience in Florida in relation to disaster events from 2010 to 2015. Their findings indicate that a specialization in hospitality services generally enhances resilience. Furthermore, Watson and Deller (2022) identified specific regions, notably northern Minnesota and vast areas spanning the Texas–Louisiana–Arkansas–Oklahoma corridor, where tourism plays a pivotal role in boosting economic resilience.

Shifting focus to Europe, several papers covered single country cases examining the relationship between tourism and the economic resilience of regional economies during the recovery phase following the 2008 financial crisis. In their preliminary assessment of regional economic resilience among Italian regions, Faggian et al. (2018) identified tourism as a positive factor in confronting the recession. Drawing on the example of Croatian NUTS-3 regions, Kuliš et al. (2022) confirmed that tourism activities possess the potential to enhance resilience and recovery capacity. In a study focused on Romanian rural destinations, Ibanescu et al. (2020) explored the potential contribution of tourism to the resilience of rural areas. Their findings revealed a positive impact of tourism on economic resilience in highly accessible rural areas. On a broader sample encompassing 55 European NUTS-2 regions, Romão (2020a) employed a panel analysis to investigate the interrelationships between tourism, sectoral specializations, regional economic growth, and resilience during growth, recession, and recovery phases for the period 2006-2017. His findings underscored that increased tourism demand expedites recovery, thereby bolstering regional economic resilience. In one of the more recent studies, Pascariu et al. (2021) examined the contribution of tourism to regional economic resilience across all EU NUTS-2 regions following the financial crisis from 2008-2012. Their analysis revealed that tourism could augment the capacity for regional economic resilience. Beyond affirming the positive association between tourism and regional economic resilience and transcending the conventional TLGH hypothesis, they also advanced the literature by coining the term "tourism-led resilience hypothesis." They further suggested that that tourism could be seen as a fail-safety mechanism for economic recovery after a major shock.

Recently, in the focus of tourism-economic resilience nexus literature, focus is shifted towards cultural tourism, as specific form of tourism that helps regional recovery post shock. The theoretical foundation is rooted in the interactions and synergies between tourism, heritage, and cultural and creative industries (Neuts, 2022; Petrić et al., 2020), which have been identified as vital contributors to economic resilience (Capello & Dellisanti, 2023; Cellini & Cuccia, 2019; Dellisanti, 2023a; Khlystova & Kalyuzhnova, 2023). A seminal empirical study, elucidating the link between cultural tourism and economic resilience, was carried out as part of the SmartCulTour project (Petrić et al., 2021) on a sample of 35 European local administrative units. Two principal conclusions emerge from this research. Firstly, a rich array of cultural resources and enterprises bolsters a region's capacity to withstand and recuperate from external economic shocks. Concurrently, governmental support creates a conducive environment that amplifies regional resilience. Secondly, the dynamics of tourism play a pivotal role in this resilience mechanism. A novel paper by Muštra, Škrabić Perić, et al. (2023) delved into the influence of tourism demand and cultural World Heritage Sites on regional economic resilience across European Union NUTS 2 regions. The findings underscore the significance of cultural World Heritage Sites in maintaining regional economic resilience. Cultural tourism, conceptualized as the synergistic effect of tourism and cultural sites, mitigates the adverse impacts of inbound tourism, suggesting the crucial role cultural sites play in drawing inbound tourists during less affluent times.

Nonetheless, the emergence of the COVID-19 crisis has provided an array of valuable lessons for scholars in the domain of tourism, leading to a critical reassessment of the tourism industry's resilience capacity (Abbas et al., 2021; Gössling et al., 2021; Gunter et al., 2022; Yeh, 2021). Despite tourism's well-known ability to recover quickly post-shock, the severity of the COVID-19 crisis led many scholars to express concerns about its recovery pathways (Gössling & Schweiggart, 2022; Higgins-Desbiolles, 2021; Lew et al., 2020; Uğur & Akbıyık, 2020). Many initial forecasts from both scholars and practitioners suggested that the industry might take several years, if not longer, to return to pre-crisis levels, indicating a more extended recovery period than seen in previous crises (George et al., 2021; Ioannides & Gyimóthy, 2020; Škare et al., 2021; Zhong et al., 2021). However, the tourism industry's potential to recover has been shown again in the current crisis. In particular, the tourism industry in the EU has demonstrated a strong recovery from the pandemic. The overall number of nights spent in tourist accommodations in 2022 was practically at the pre-pandemic level, with 2.72 billion nights compared to 2.88 billion in 2019, a 5.6% decrease. Notably, Slovenia, France, Sweden, Portugal, Croatia, Luxembourg, Poland, and Spain virtually reached their 2019 levels in 2022 (Eurostat, 2023b). As the European Travel Commission (ETC, 2023) reports, travel recovery is promising despite global pressures such as high inflation, the war in Ukraine, and the subsequent energy crisis. Consequently, based on the latest data from WTTC (2023a), the total GDP contribution of tourism in the EU increased by more than 40% in 2022, reaching 1,370.9 billion EUR. This is only 6.7% below the contribution compared to 2019, with a further positive forecast for 2023 that approaches pre-pandemic levels. Comparable trends are also evident on a global scale (WTTC, 2023b).

The quicker recovery observed in the travel and tourism sector, especially post-COVID-19, can be attributed in large part to cultural tourism. Recent studies underscore the potential of promoting the sustainable integration of culture and tourism, this merger, through cultural tourism, has been identified as a catalyst for recovery and resilience (Giorgi et al., 2021; Zhao et al., 2023). Furthermore, Salinas Fernández et al. (2022) delineated the key dimensions conditioning tourism competitiveness in an economic recovery context after the COVID-19 pandemic, with cultural heritage standing out as the primary dimension. In statements from organizations such as the OECD (2022), UNESCO (2023), and UNWTO (2023), it is emphasized that, despite prevailing challenges, the tourism and culture sectors present opportunities for the building of new partnerships and collaborations. Across the globe, nations are leveraging their unique blend of tangible and intangible heritage to drive economic growth and sustainable development via cultural tourism. This facet of cultural tourism shines particularly during post-shock recovery, as it represents an ever-evolving sub-sector. It continuously adapts in the face of shifting lifestyles, burgeoning forms of culture and creativity, and both traditional and digital innovations.

Preliminary empirical evidence suggests that culture enhances tourism resilience during the recovery phase of COVID-19. Jurlin (2022), analyzing a sample of 20 European countries, confirmed that indicators such as UNESCO sites, cultural visits, and cultural employment positively influenced the tourism volume in 2021. Similarly, Kuliš et al. (2022), using a sample of EU NUTS-2 regions, found a positive impact of World Heritage Sites on tourism resilience during the recovery phase, measured by the change in tourism demand in 2021 compared to 2020. In their work-in-progress study, using the same sample, Neuts et al. (2023) found that UNESCO sites and tourism demand positively influence overall regional economic resilience during the post-COVID-19 recovery.

Based on the aforementioned discussions exploring the interplay between tourism, culture, and economic recovery, the foundation for the formulation of Hypothesis H1b is established.

3.4. Geographies of Tourism, Culture, and Economic Resilience

In Chapter One, the research problem addressing regional disparities among EU regions is discussed, emphasizing their intensification in light of numerous crisis events. Drawing from the insights of Fratesi and Perucca (2018), it is posited that, among various determinants affecting the economic resilience of European regions, special consideration should be attributed to the availability of structural territorial assets. These assets, termed as "territorial capital," encompass a range of assets, whether tangible or intangible, and public or private, underscoring the developmental potential of territories.

Within the context of particular territorial assets and competitive strengths, tourism is seen as a potential driver to reduce the regional inequalities (J. Liu et al., 2017; Lv, 2019) and, in the EU context, is highlighted as a key strategic sector for development via the European Structural and Investment Funds (Romão & Neuts, 2017). Notably, tourism manifests a distinct territorial dimension, characterized by its asymmetric spatial distribution across and within nations, consequently leading to specific regional impacts (Almeida et al., 2021; Batista e Silva et al., 2018; Bernini et al., 2020; De Siano & Canale, 2022; Lim & Zhu, 2017; N.-A. Matei et al., 2023; Porter et al., 2012; Romão et al., 2017; Yang & Fik, 2014). An extensive analysis by Batista e Silva et al. (2018) on more than 1700 EU NUTS-3 regions unveiled patterns of tourism intensity, seasonality, and regional vulnerability to sectoral shocks. Their findings indicate that the influence of tourism, especially its seasonality, differs substantially across countries, regions, and even within localities. Distinct areas such as cities, islands, coastal regions, and the Alps emerge as primary tourism hotspots in Europe.

Figini and Patuelli (2022) utilized the TSA and I-O method to investigate the economic contribution of tourism (as previously elaborated in subchapter 3.1.) in the EU, particularly its influence on output, GVA, and employment. Empirical data derived from their study drew attention to the pronounced heterogeneity in the proportion of tourism's share in both GVA and GDP across various EU economies. These findings align with another study by Figini et al. (2022), which also highlighted the diverse economic impact of the tourism sector throughout the EU.

During crisis periods, regional disparities in tourism demand patterns and the subsequent economic effects of tourism tend to intensify. Eugenio-Martin and Campos-Soria (2014) observed that during the 2008 financial crisis, tourists across Europe reacted heterogeneously, and their decisions to cut back on tourism expenditure were influenced by factors such as the climatic conditions of the destination and its level of development. Benítez-Aurioles (2020) assessed the resilience of various European countries in terms of tourist arrivals after the 2008 crisis. The findings highlighted that Spain experienced more significant growth in tourist numbers than other Southern European nations, suggesting a superior capacity to attract international tourists following the Great Recession.

On a regional scale in Italy, Costantino et al. (2023) investigated tourism resilience following the 2008 crisis. Their analysis indicated that, out of 110 regions, only 13 well-known cultural and coastal areas emerged as the most resilient. Meanwhile, over 45% of the regions demonstrated the capability to recover from the crisis, with the majority located in the South and Centre of Italy. In the context of EU NUTS-3 regions during the 2008 crisis, cities were found to be less vulnerable to disruptions in the tourism sector compared to other areas (Batista e Silva et al., 2018). However, this trend changed during the COVID-19 shock (Bui et al., 2021; Duro et al., 2022). Further, in light of the recent COVID-19 pandemic, Kuliš et al. (2023) noted distinct regional variances: tourism resilience was predominantly higher in North and Western EU regions during the resistance phase, while, in contrast, recovery was more pronounced in the South and Eastern European regions.

Although tourism recovery post-crisis remains consistent, the pace of this recovery differs notably across territories, destination profiles, and the maturity of tourism activities within a given region (Ibanescu et al., 2023). A stylized fact emerging from studies is the variation in tourism resilience across geographic areas (Boto-García & Mayor, 2022; Duro et al., 2022; Navarro-Drazich & Lorenzo, 2021), which in turn influences the broader economic resilience (Cellini & Cuccia, 2015).

A deeper understanding of tourism resilience can be attributed to contextual geographic factors, such as the pull effects of tourism destination regions (Bernini et al., 2020). Since tourism is a place-based activity, it heavily relies on territorial characteristics. These include existing resources, climate, natural landscapes, and both tangible and intangible cultural heritage which shape potential destination attractiveness. Additionally, other socio-economic, cultural, or institutional features play a role in influencing tourism dynamics (Romão, 2018, 2020b, 2021). Among these characteristics, cultural heritage stands out as crucial (E. Panzera, 2022; E. Panzera et al., 2021). Recently identified as a significant development potential for places, cultural heritage, primarily through cultural tourism, has become an integral component of territorial capital. Consequently, it can impact economic dynamics and resilience (Camagni et al., 2020; Cerisola, 2019b).

However, spatial heterogeneity exists within the EU regarding cultural endowment. An almost two decades old ESPON report (2006) highlighted the unequal distribution of cultural heritage across European regions (Neuts et al., 2021). This observation was echoed by E. Panzera et al. (2021), who noted that cultural heritage sites are unevenly spread across European regions, raising potential spatial equity concerns. Some regions boast a high concentration of cultural assets, while others have a minimal presence. Urban and coastal areas, where tourism demand is already high, often have the most cultural assets. In contrast, many regions record a substantial number of overnight stays but lack significant cultural heritage. Similarly, some regions rich in cultural assets see limited tourism development (ESPON, 2006; Russo & van der Borg, 2006).

Drawing from the discussions on spatial heterogeneity across EU regions regarding overall economic resilience, tourism demand patterns, economic impacts of tourism, and cultural heritage endowment, there is a theoretical foundation for Hypothesis 3. This hypothesis addresses the heterogeneous effects of cultural tourism on regional economic resilience.

4. RESEARCH METHODOLOGY

4.1. Developing the Research Hypotheses

Research hypotheses are formulated based on the research problem, subject, and objectives. The most critical dimensions of regional economic resilience, specifically resistance and recovery, are highlighted, along with the importance of measuring resilience performance through these phases. Furthermore, three stylized facts related to (cultural) tourism, vulnerability, recoverability, and heterogeneity, are taken into account. In addition, spatial dependencies are integrated into the evaluation of regional economies' resilience. Given these considerations, three main research hypotheses are established.

Table 1. Research hypotheses

H1	Cultural tourism affects the economic resilience of the regions under study.
H1a	Cultural tourism negatively impacts the economic resilience during the resistance phase of the regions under study.
H1b	Cultural tourism positively impacts the economic resilience during the recovery phase of the regions under study.
H2	The relationship between cultural tourism and regional economic resilience is influenced by spatial dependencies.
H3	The relationship between cultural tourism and economic resilience demonstrates spatial heterogeneity across the regions under study with respect to the region's tourism type.

Source: Author's compilation

The first hypothesis is tested using the entire sample of NUTS-3 regions in South EU. By maintaining a macro-perspective through an aggregate level of analysis, results reflect the unique attributes of each territory (Bernini et al., 2020). This approach also permits the generalization of findings, the theoretical rationale for which is detailed in the Third Chapter, and is seen as important in regional research and cultural tourism studies (Calero & Turner, 2020; Dunford, 2020; E. Panzera, 2022).

In the second hypothesis, spatial spillover effects are acknowledged, based on the premise by Sutton and Sutton (2024) that economic resilience of regions is influenced by local spillovers.

The third hypothesis posits that the effects of cultural tourism on regional economic resilience are heterogeneous. To explore this, regions sharing similar characteristics are aggregated into clusters to focus on how cultural tourism contributes to economic resilience differently among these groups. The formation of clusters aligns with the specific tourism types of each region. These clusters are defined through two approaches: i) a priori, based on Eurostat's territorial typologies (2019); and ii) an original classification system, derived from research data and the application of the spatial regimes approach (Vidoli et al., 2022).

Details about the subsamples selected for the a priori method are provided in the subsequent section, which covers the main sample and subsamples. The spatial regimes approach is explained in the section dedicated to research methods.

4.2. Conceptual Model

The conceptual research model is presented in the following figure.

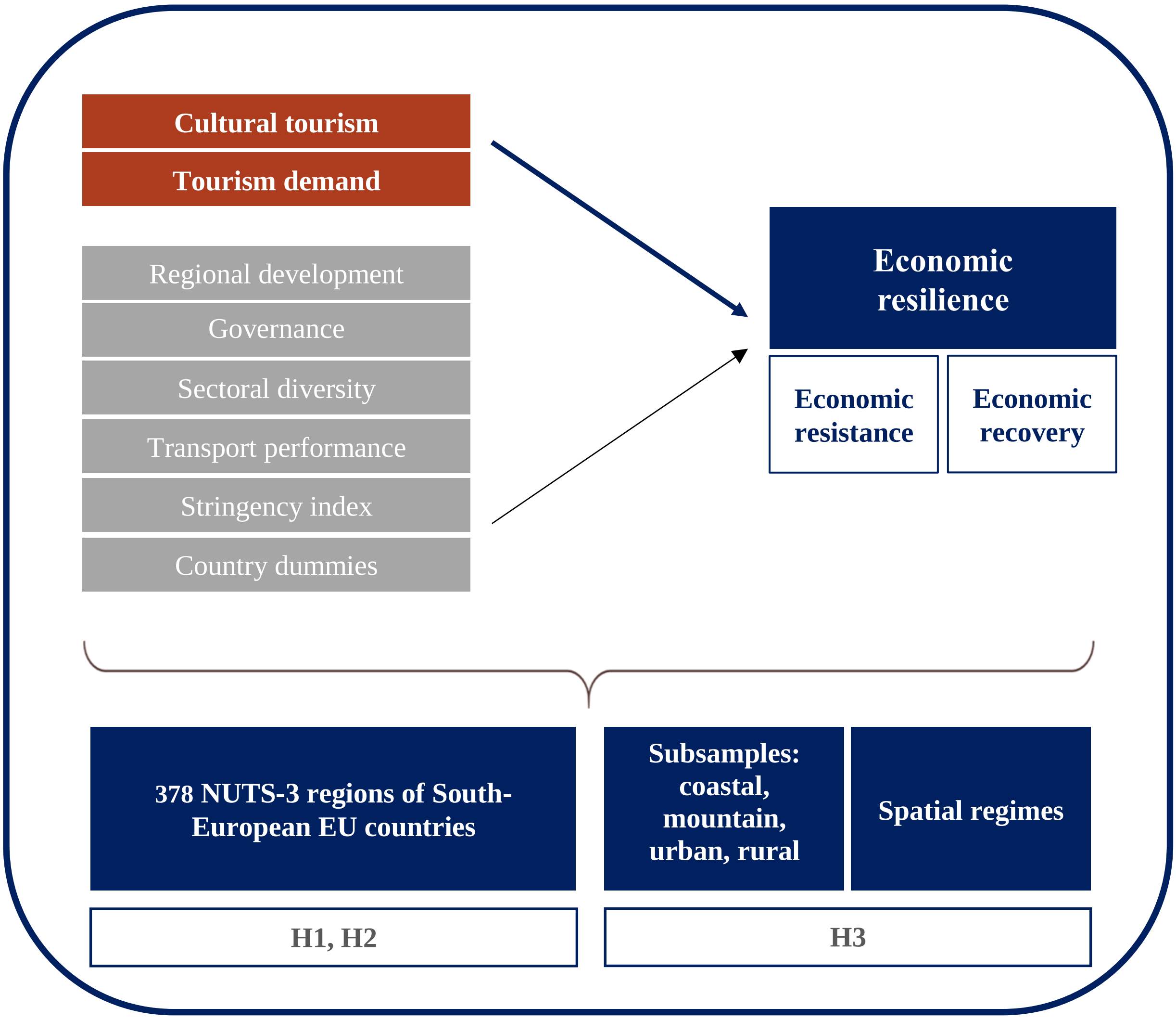

Figure 1. Conceptual Research Model
Source: Author's Compilation

4.3. Defining the Sample

4.3.1. Spatial Unit of the Analysis

The concept of a region is multifaceted in geographical studies. Its scope, boundaries, and characteristics are inherently tied to its specific context. For instance, an agricultural region differs vastly from an industrial one. Consequently, the tourist region emerges as a diverse entity, varying in geographical scale and as perceived by different stakeholders (Piriou, 2019). The terms "tourist region" and "tourist destination" are often used interchangeably. A "tourist destination" denotes a geographical area equipped with the necessary services and infrastructure to accommodate tourists. It can range from a hotel, site, or city to an entire country or region. This area is fluid and adaptable, with its boundaries shaped by tourist demand (Petrić & Pivčević, 2016). Blažević and Perišić (2009) establish a distinction between the concepts of "tourist destination" and "tourist region". According to them, a tourist region is viewed from the standpoint of natural and macro-economic factors, while a tourist destination is perceived as a business system that can function successfully provided there is a clear concept of the destination management network. As it can be noticed, both, tourist destination and tourist region can be both a subnational and an infracontinental territory (Piriou, 2019).

The primary focus of this dissertation is the concept of the tourist region from a subnational perspective. The UNWTO (2022a) has highlighted the importance of understanding and analyzing tourism at the subnational level, noting that tourism is inherently territory-contingent. Indeed, visitor flows vary considerably across countries, regions, municipalities, and other territorial entities. Recognizing the need to measure and monitor subnational tourism statistics, major organizations like UNWTO (2013) and OECD (2016) have collaborated on statistical initiatives. These are aimed at formulating guidelines for measuring tourism at scales below the national level, such as regional, municipal, and local scales. Notably, both organizations (OECD, 2016; UNWTO, 2013, 2022a) have stressed the importance of having coherent spatial boundaries to ensure consistency across different spatial dimensions. The term "regional scale" typically refers to the administrative tier just below the national level, although terminologies such as state, province, and county might also be used in various countries. Importantly, it does not refer to a cluster of countries (UNWTO, 2022a). Traditionally, regional analyses have relied on data sourced from administrative regions, representing the regional boundaries defined by governments. Such data is advantageous as it refers to areas typically overseen by specific subnational governments or targets of policies at both national and subnational levels. For standardization, regions are divided into two categories: large regions (NUTS-2 in the EU context) and smaller regions (NUTS-3). This classification ensures a consistent basis for comparison across different countries.

Drawing upon this methodology, Batista e Silva et al. (2021) introduced a novel European regional typology for classifying EU regions. They classified EU regions based on hotel location patterns and geographical criteria: coastal, city, urban mix, mountains and nature, and rural regions. In their methodology, they employed the NUTS-3 level as the spatial units for this new classification. The NUTS is an official hierarchical system of territorial units used for statistical data reporting in Europe, spanning four levels (Eurostat, 2023a). The most relevant levels are NUTS-2 (basic regions for the implementation of regional policies) and NUTS-3 (small regions for specific diagnoses). This approach has faced criticism, largely on the grounds that tourism regionalization is a complex process, and administrative units like NUTS-3 might not fully capture the nuances of regional tourism typologies. This is because a tourist region can sometimes extend beyond an administrative region (Camară, 2022). However, even critics like Camară (2022) concede the utility of regional typologies. Some scholars, such as MacFeely (2009), argue that administrative data may be the only feasible means of compiling subnational data to develop regional tourism statistics, given that conducting large-scale surveys robust enough for sub-national data could be cost-prohibitive. **Thus, in line with the recommendations of Batista e Silva et al.** (2021)**, OECD** (2016)**, and UNWTO** (2013, 2022a)**, the statistical unit employed in this paper is the NUTS-3 region.**

4.3.2. Rationale for Selecting Regions of EU South-European Countries

The sample comprises regions from South-European countries, specifically Croatia, Cyprus, Greece, Italy, France, Malta, Portugal, Slovenia, and Spain. The selection of South-European (Mediterranean) EU countries aligns with those chosen in previous research, such as the study by Algieri et al (2023). In total, the sample encompasses 378 out of the possible 380 NUTS-3 regions in these countries, including remote and outermost areas. The only exceptions are the Spanish enclaves of Ceuta and Melilla in North Africa, which have been omitted due to a lack of data availability for these regions. The regions under study are shown on the map in Figure 2. For the next and all subsequent graphical illustrations (maps) analyzing the distribution of various indicators across the 378 regions under study, shapefiles from Eurostat's GISCO (2024b) database were utilized. The maps were created using QGIS software.

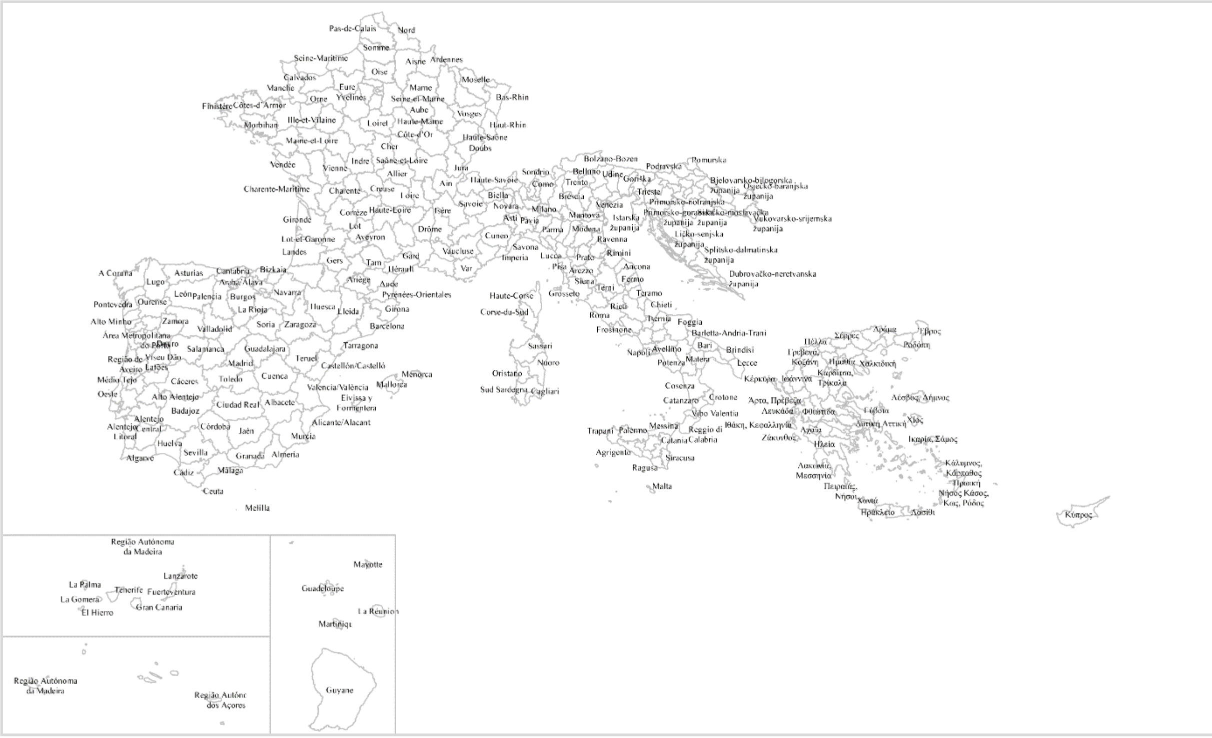

Figure 2. NUTS-3 regions under study
Source: Author’s Compilation Using Eurostat’s GISCO

South-European destinations have been instrumental in establishing the EU as a leading global tourist destination, marked by a significant influx and remarkable growth rates of tourism demand, especially over the past two decades (Romão et al., 2017; Romão & Nijkamp, 2018). Their comparative advantages, such as climate, geographical position, natural resources, and cultural heritage, have facilitated specialization in tourism industries and bolstered tourism exports (Bürgisser & Di Carlo, 2023).

For instance, Eurostat (2023c) reported that in 2021, there were 1,832 million nights spent in EU tourist accommodations. The top 10 NUTS level 3 regions with the highest number of nights spent were all located in Mediterranean countries, specifically Spain, Italy, France, and Croatia. Notably, the Italian regions of Venezia and Bolzano-Bozen recorded the highest figures, with 27.1 million and 23.8 million nights respectively. Additionally, three other regions, Paris in France, Mallorca in Spain, and Istarska županija in Croatia, each exceeded 20 million nights. Although the EU comprises a total of 1,166 NUTS 3 regions (NUTS 2021 classification), just these top 10 regions collectively accounted for over 10.8% of the total nights spent in EU tourist accommodations. Moreover, the remaining regions in the nine selected South-European countries also excel in tourism. Altogether, these nine countries accounted for over 1,085 million nights spent in 2021, comprising nearly 60% of the total nights spent in the EU.

However, this prominence has brought challenges, notably a heightened reliance on tourism (Romão & Nijkamp, 2018), seasonality (Duro & Turrión-Prats, 2019), and overtourism issues (Mandić & Petrić, 2021). Consequently, there is a growing call for sustainable tourism in South-European regions (Niavis et al., 2022; T. Ren et al., 2019). To achieve sustainable tourism, in the context of the Mediterranean region, the appropriate valorization of cultural heritage is recognized as an essential instrument (Afrić Rakitovac & Urošević, 2017; Amoiradis et al., 2022). This region is rich in diverse expressions of cultural heritage, including both tangible (Pechlaner, 2000; Romão, 2015; Romão et al., 2017) and intangible (Reguant-Aleix et al., 2009; Scepi & Petrillo, 2015) forms. These cultural assets are considered a comparative advantage (Almeida et al., 2020; Ng et al., 2023) that can drive regional development (Capello et al., 2020; Riganti & Nijkamp, 2004). Additionally, the role of cultural and creative industries in enhancing labor productivity and regional development (Boix-Domènech & Rausell-Köster, 2018), particularly in this Mediterranean region as highlighted by the "Mediterranean way of creativity", is also emphasized (Boix-Domenech et al., 2021).

Thus, it is unsurprising that the importance of sustainable tourism and cultural heritage is acknowledged through their inclusion in numerous joint initiatives, projects, and European development strategies and policies (Bertocchi et al., 2020; Bombico, 2023; European Commission, 2007, 2023a; La Sala et al., 2016; Niavis et al., 2019; Papatheochari et al., 2021). Hence, considering all these aforementioned factors underscores the rationale for selecting these regions in South-European EU countries as the sample for this research.

4.3.3. Criteria for Subsample Classification

Building on the discussion in subchapter 3.4 on spatial heterogeneity across EU regions, this study divides a sample of 378 regions in South-European EU countries into cluster subsamples based on similar characteristics. These clusters are formed using Eurostat's Methodological Manual on Territorial Typologies (2019). This manual provides essential guidance for data suppliers dealing with subnational statistics within the EU, ensuring coherence and comparability.

According to Eurostat (2019), location is a critical aspect of most official statistics, as economic, social, and environmental phenomena are typically territorially based. Economic, social, and environmental developments are often tied to specific territories, making geospatial analysis complex. To address this complexity, Eurostat has expanded its subnational statistics to include various territorial typologies, ensuring reliable and comparable data.

The mentioned manual provides various territorial typologies, including Grid typologies, Local typologies, and Regional typologies. This thesis focuses on regional typologies, which classify statistics according to the NUTS (Nomenclature of Territorial Units for Statistics). These typologies offer information at different levels of aggregation, with data presented for NUTS level 1, level 2, and level 3 regions, representing larger to smaller territorial units, respectively. The most detailed statistics, at NUTS level 3, serve as building blocks for various classifications. For the purpose of this thesis, the following classifications are used:

- Coastal regions
- Mountain regions
- Urban and suburban regions
- Rural regions.

Applied at the NUTS level 3, the coastal typology identifies EU coastal regions based on three criteria: a coastline border, a population with more than 50% living within 50 km of the coastline, or a significant maritime influence. It classifies regions into coastal and non-coastal categories. Figure 3 displays the coastal regions in the sample.

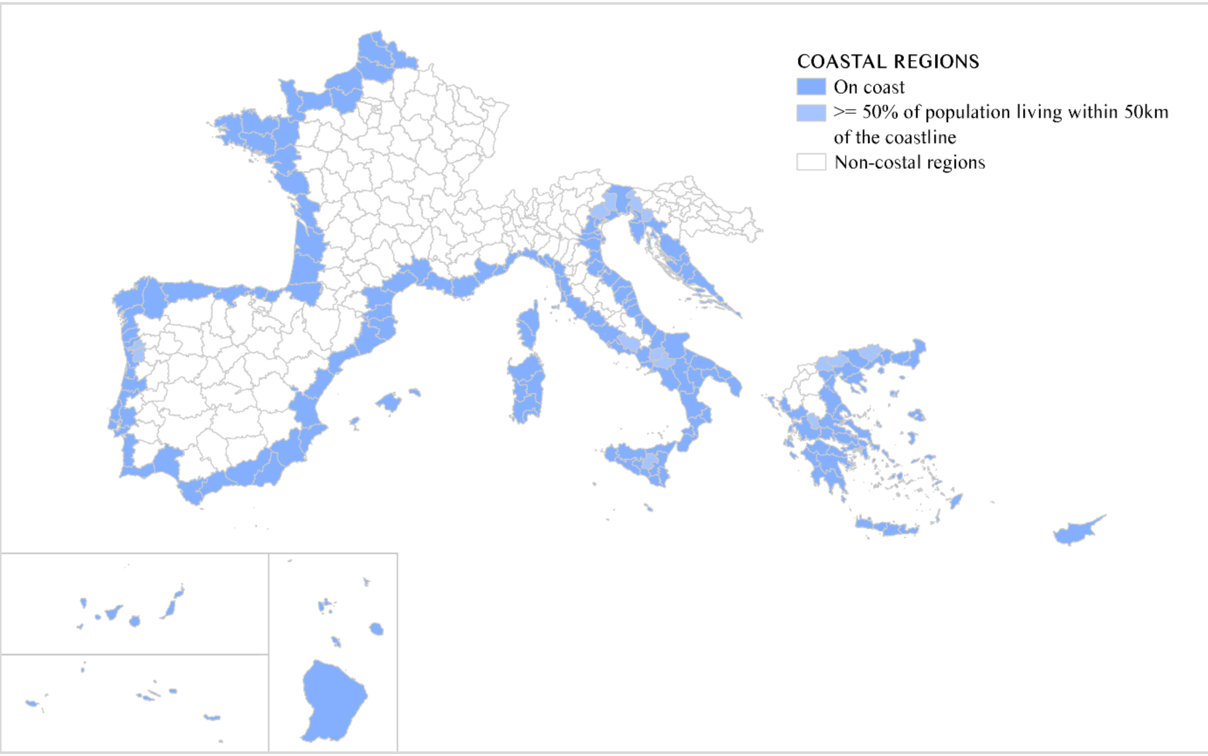

Figure 3. Coastal Regions in the Study Sample
Source: Author's compilation using Eurostat's GISCO and Territorial typologies

Mountain typology is categorized based on two primary classifications: mountain regions and non-mountain regions (areas not classified as mountain regions). Mountain regions can be further divided into three distinct categories, as defined by NUTS level 3 regions: regions where more than 50% of the surface area is covered by mountain terrain, regions where more than 50% of the population resides in mountain areas, and regions that meet both of these criteria.

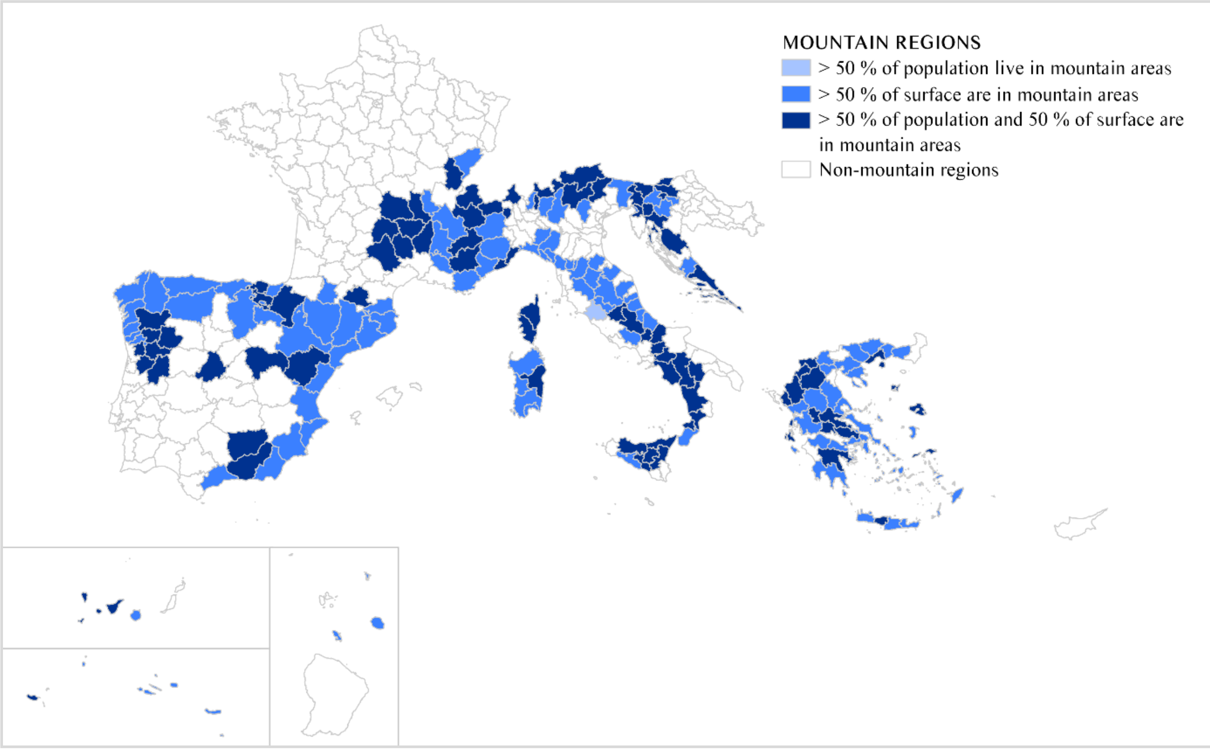

Figure 4. Mountain Regions in the Study Sample
Source: Author's compilation using Eurostat's GISCO and Territorial typologies

The classification of urban-rural areas uses 1 km² population grid cell data to maintain consistent shape and surface area, avoiding size-related distortions. First, grid cells are classified by mapping groups of these cells with neighboring ones to identify rural grid cells and urban clusters. In the second step, NUTS level 3 regions are classified using the population in rural grid cells and urban clusters. This involves overlaying the grid cell data onto NUTS level 3 regions to calculate the proportion of the population in urban clusters.

This results in a classification based on population distribution: predominantly urban regions, defined as NUTS level 3 regions where more than 80% of the population resides in urban clusters, urban areas typically consisting of cities; intermediate regions, where between 50% and 80% of the population lives in urban clusters, generally comprising urban areas of towns and suburbs; and predominantly rural regions, defined as NUTS level 3 regions where at least

50% of the population lives in rural grid cells. Urban and suburban regions are depicted in Figure 5, while rural regions are illustrated in Figure 6.

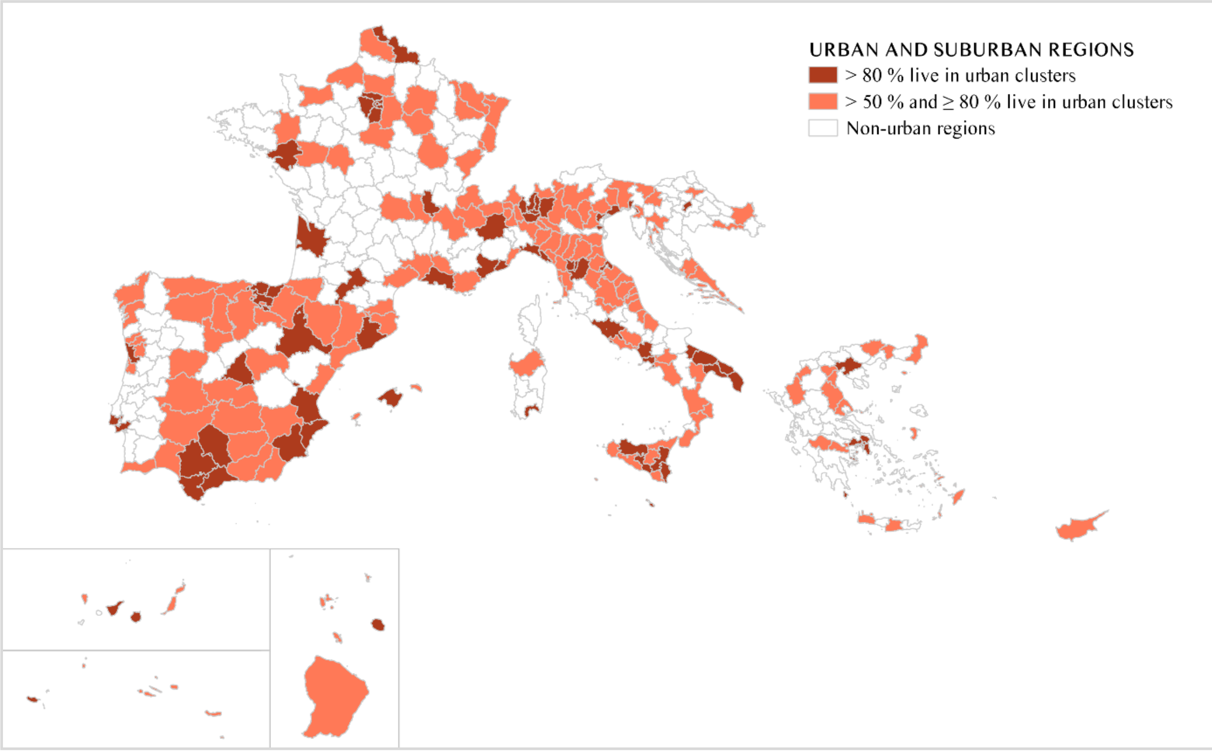

Figure 5. Urban and Suburban Regions in the Study Sample

Source: Author's compilation using Eurostat's GISCO and Territorial typologies

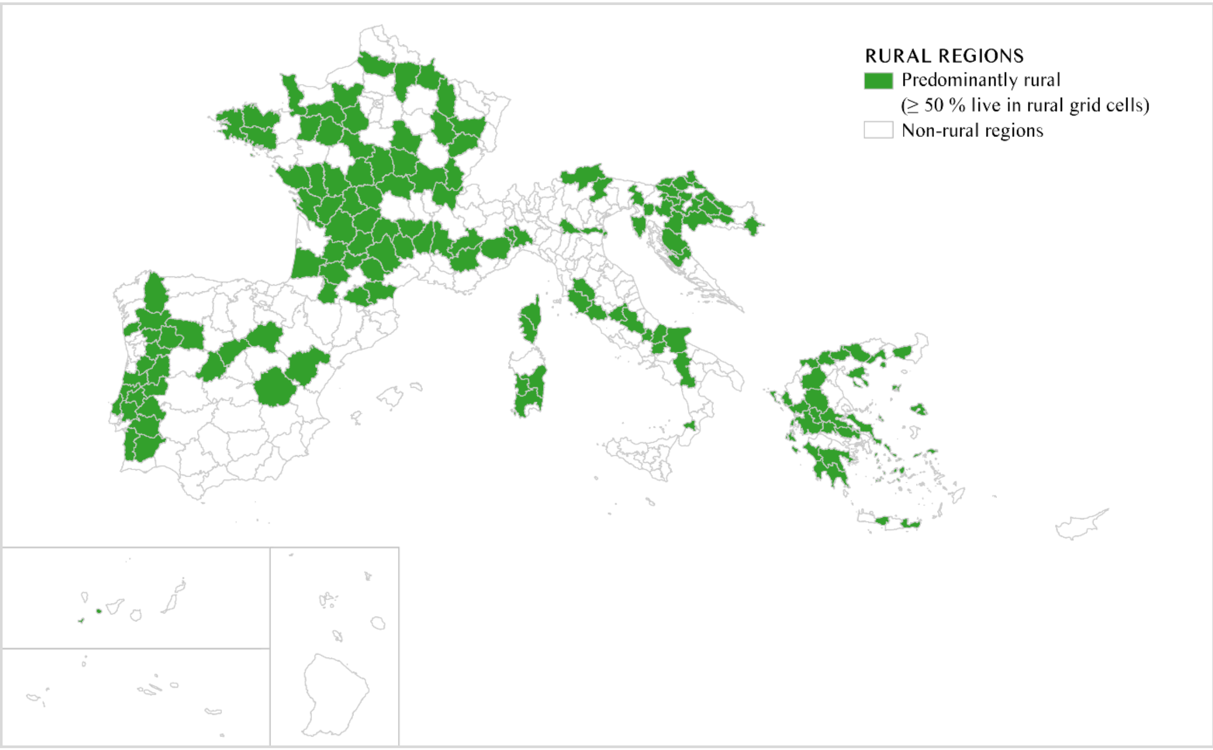

Figure 6. Rural Regions in the Study Sample

Source: Author's compilation using Eurostat's GISCO and Territorial typologies

The importance of these typologies is evident as they are already embedded in EU legislation, such as EU regulation 522/2014 (European Commission, 2014). Moreover, to ensure harmonized application and facilitate cross-referencing from other acts and programs, Eurostat initiated a legislative measure called "Tercet," aimed at integrating these typologies into the NUTS regulation (European Commission, 2016b). Additionally, the latest tourism regional typologies include categories such as coastal, urban, rural, and mountain regions (Batista e Silva et al., 2018). Also, these categories are relevant for research in cultural tourism, as the importance of cultural tourism in regional development has been recognized in specific cases, such as in coastal regions (Quintiliani, 2009), mountain regions (Citelli & Severin, 2021), urban regions (D. Mikulić & Petrić, 2014), and rural regions(Gómez-Ullate et al., 2020). Given the aforementioned considerations regarding the relevance of Eurostat's territorial typologies, these factors provide a clear rationale for selecting these subsamples for this research.

4.4. Data

4.4.1. Regional Economic Resilience Indicators

Foremost, it is imperative to define the economic resilience indicators. The manner in which resilience is understood broadly has implications for its measurement, the choice of indicators, and the units of analysis (Banica et al., 2021; Sensier & Uyarra, 2021; Xanthos & Dulufakis, 2023). However, this research focuses on measuring resilience performance, rather than its capacity (Sutton et al., 2023). Consequently, in line with the recommendations by Alessi et al. (2020), a single indicator is utilized, given that resilience indicators typically refer to a singular episode. Regional economic resilience has been commonly operationalized using standard economic measures, such as gross value added (GVA) and labor market indicators (Giannakis & Bruggeman, 2020; Sensier & Uyarra, 2021). Following the advice of Giannakis and Bruggeman (2020), it's advocated that the resilience indicator be calculated in relation to the EU average. Thus, based on Sensier and Uyarra (2021), by selecting the most common proxy for resilience, which is GVA, and incorporating the approach of Giannakis and Bruggeman (2020) to make calculations relative to the EU average, the regional economic resilience indicator is deduced in a two-fold manner, encompassing the two main dimensions as outlined by Martin et al. (2016): resistance and recovery. These aspects are examined in the short-term perspective (Muštra, Šimundić, et al., 2023). Moreover, they are analyzed independently, as Pudelko et al. (2018) caution that overlooking the dual structure of short-term resilience can lead to inaccurate, if not erroneous, conclusions about the factors that stabilize or destabilize regional economies in times of crisis.

First, regional economic resistance is calculated as:

$$RES_{vul} = [(GVA^{R}_{2020} - GVA^{R}_{2019})/GVA^{R}_{2019} \text{ - } (GVA^{EU}_{2020} - GVA^{EU}_{2019})/GVA^{EU}_{2019}] \ / \ |(GVA^{EU}_{2020} - GVA^{EU}_{2019})/GVA^{EU}_{2019}| \quad \textbf{(1)}$$

Then, regional economic recovery in 2021 is calculated as:

$$RES_{rec} = [(GVA^{R}_{2021} - GVA^{R}_{2020})/GVA^{R}_{2020} \text{ - } (GVA^{EU}_{2021} - GVA^{EU}_{2020})/GVA^{EU}_{2020}] \ / \ |(GVA^{EU}_{2021} - GVA^{EU}_{2020})/GVA^{EU}_{2020}| \quad \textbf{(2)}$$

Finally, regional economic recovery in 2022 is calculated as:

$$RES_{rec} = [(GVA^{R}_{2022} - GVA^{R}_{2020})/GVA^{R}_{2020} \text{ - } (GVA^{EU}_{2022} - GVA^{EU}_{2020})/GVA^{EU}_{2020}] \ / \ |(GVA^{EU}_{2022} - GVA^{EU}_{2020})/GVA^{EU}_{2020}| \quad \textbf{(3)}$$

Where $\boldsymbol{GVA^{R}}$ is the GVA in purchasing power standards (PPS) at regional level; $\boldsymbol{GVA^{EU}}$ is the GVA (in PPS) at the EU-27 level. The resilience indicator is calculated for: i) the resistance phase (change in 2020 compared to 2019); ii) the recovery phase in 2021 (change in 2021 compared to 2020); and iii) the recovery phase in 2022 (change in 2022 compared to 2020).

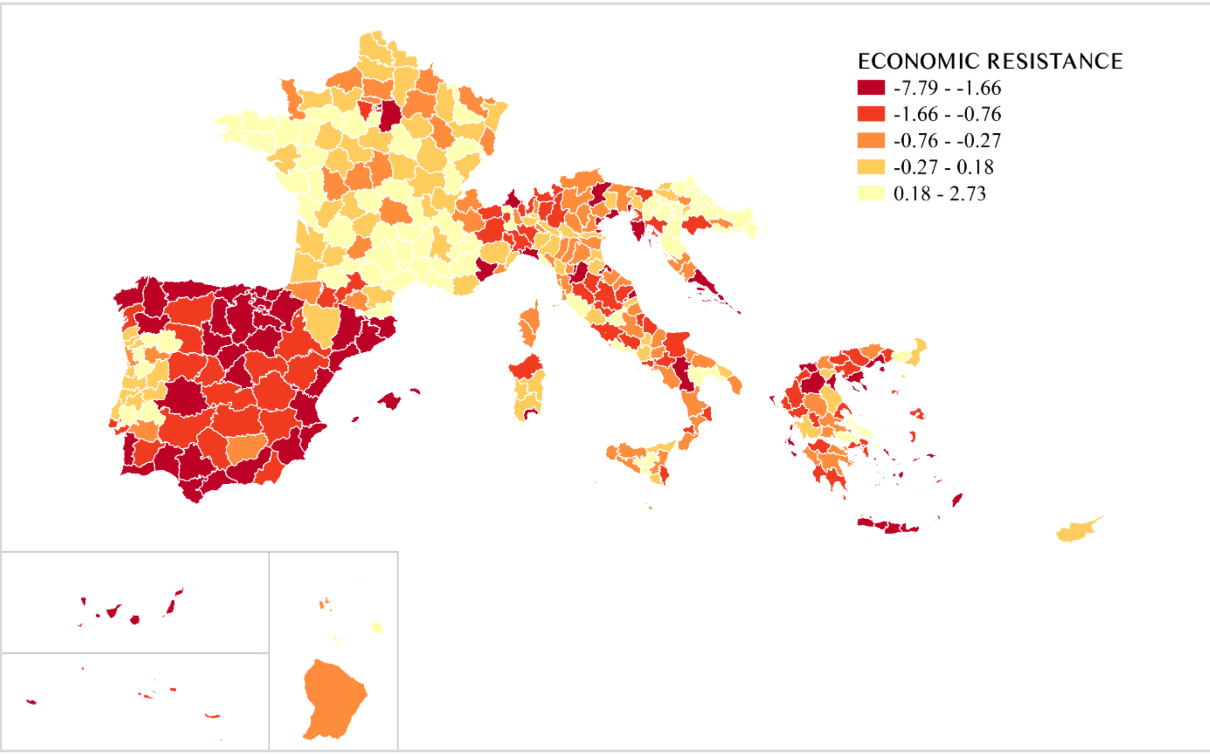

Figure 7. Economic Resistance Across the Study Sample
Source: Author’s compilation using Eurostat’s GISCO and ARDECO (2023)

Figure 7 highlights significant regional disparities in economic resistance across Southern European EU regions during the vulnerability period of 2020 compared to 2019. Regions shaded in red, especially dark red, indicate low economic resistance, primarily observed in Spain, Greece, Italy, and the southern part of Croatia, signaling widespread economic vulnerability. Regions with moderate to high economic resistance are depicted in shades from orange to light yellow. Most regions in France, Portugal, Slovenia, Malta, and Cyprus, as well as parts of northern Italy and northern Croatia, and some areas in Greece, are shown in these lighter colors, indicating better economic resistance.

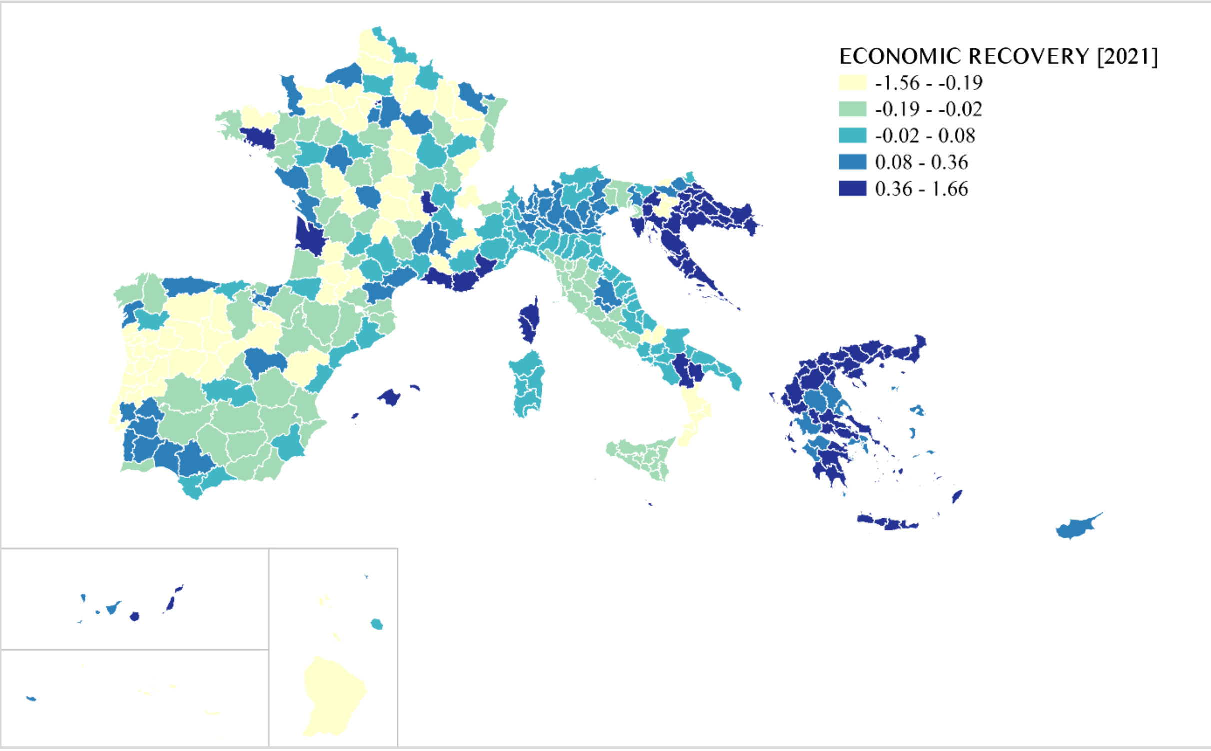

Figure 8. Economic Recovery in 2021 Across the Study Sample

Source: Author's compilation using Eurostat's GISCO and ARDECO

Figure 8 shows the short-term economic recovery in 2021 compared to 2020. The map illustrates that regions shaded in dark blue and blue indicate the highest levels of economic recovery in 2021. These regions are primarily located in Greece, Croatia, Cyprus, Malta, southern Spain, southern Portugal, and specific areas in France. In contrast, regions shaded in lighter blue, mainly in eastern and northern Italy and northern Slovenia, experienced more modest recovery. Areas colored in green and pale yellow represent regions with lower levels of recovery, predominantly situated in central Spain, central Portugal, central France, central Slovenia, and southern Italy.

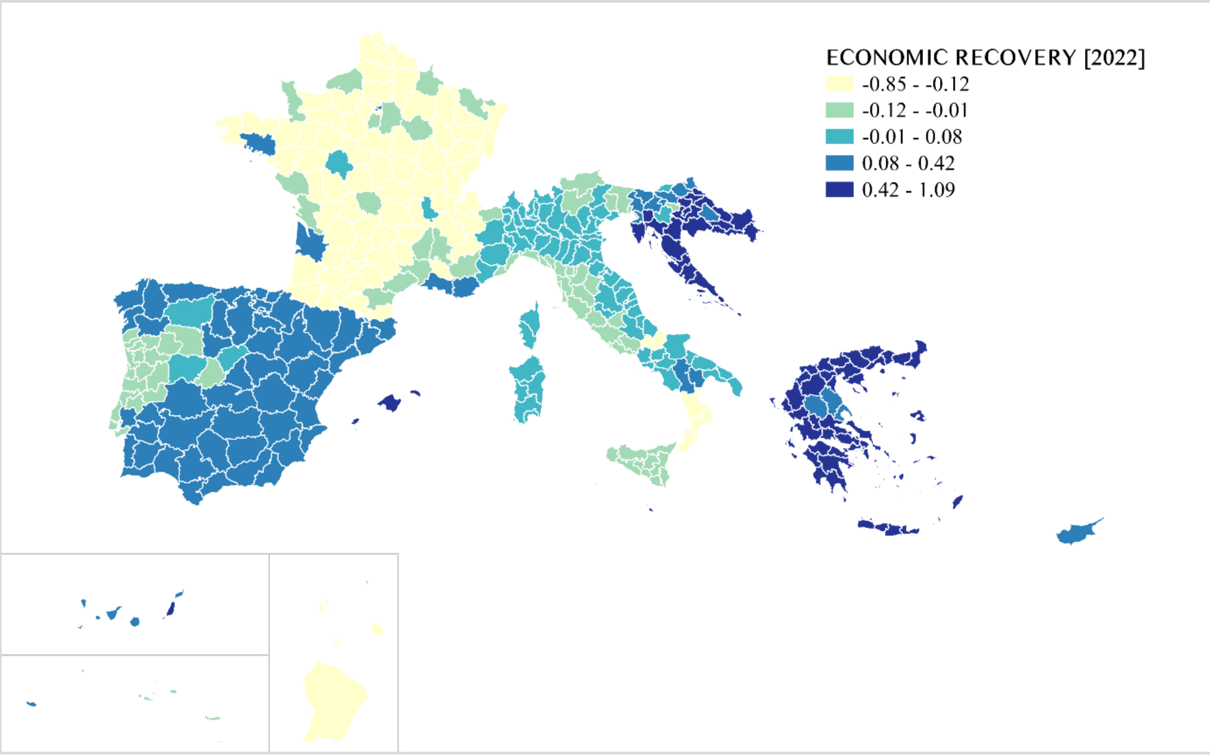

Figure 9. Economic Recovery in 2022 Across the Study Sample
Source: Author's compilation using Eurostat's GISCO and ARDECO

Figure 9 highlights regional economic recovery in 2022. Regions shaded in the darkest blue indicate the highest levels of economic recovery compared to 2020, primarily located in Croatia, Greece, Malta, and the region of Mallorca in Spain. Regions with high recovery, represented in blue, are predominantly found in Spain, Slovenia, and Cyprus. Regions with moderate recovery, shown in light blue, are mainly situated in northern and eastern parts of Italy. Regions with modest to the lowest levels of economic recovery (light green to pale yellow) are located in western and southern Italy, Portugal, and France, with France particularly characterized by extraordinarily low levels of recovery in 2022 in the most of its territory.

Descriptive statistics for economic resistance and short-term recovery indicators for both 2021 and 2022, including the number of observations, mean, standard deviation, minimum, and maximum values, are presented in Table 2.

Table 2. Descriptive Statistics for Regional Economic Resilience Indicators

Variable	N	Mean	Std. dev.	Min	Max
Economic Resistance	378	-0.8158324	1.37156	-7.793559	2.731236
Economic Recovery, 2021	378	0.0895945	0.4035096	-1.566842	1.655614
Economic Recovery, 2022	378	0.1024598	0.3149855	-0.8452959	1.085181

Source: Author's compilation

4.4.2. Cultural Tourism Indicators

The primary independent variable in this study is cultural tourism. This thesis employs cultural tourism indicators as delineated by the SmartCulTour project (Petrić et al., 2020). The SmartCulTour project, formally titled "Smart Cultural Tourism as a Driver of Sustainable Development of European Regions," was a four-year initiative from 2020 to 2023, funded by the EU under the Horizon 2020 program. The SmartCulTour project aimed to promote regional development, sustainability, and resilience across European regions with significant cultural assets, including both tangible and intangible heritage, particularly in rural and peri-urban areas, through the promotion of sustainable cultural tourism (Neuts et al., 2021).

Within the SmartCulTour framework, project Deliverable 4.1 by Petrić et al. (2020) focused on selecting cultural tourism-related indicators to create a framework indicating the level of cultural tourism development and its impact on the resilience of a destination. Identifying what constitutes the "level of cultural tourism development" (as an independent variable) posed a significant challenge. Drawing on the methodological approach of Sowińska-Świerkosz (2017), the authors conducted a search for research articles, proceedings papers, and reviews published between 2000 and 2020 in the Web of Science Core Collection database, using the keywords "cultural heritage indicator" and "cultural indicator." In addition to the identified documents, they utilized UNESCO's comprehensive framework of cultural development indicators presented in Culture 2030 Indicators (2019). Their analysis ultimately identified 45 cultural tourism indicators, which were categorized into four broad groups: i) spatial indicators, subdivided into cultural resources and cultural infrastructure; ii) prosperity and livelihood, including cultural businesses, employment, and cultural governance; iii) knowledge, focusing on education in culture and tourism; and iv) inclusion and participation.

In addition to belonging to broader categories, each indicator used to describe the level of cultural tourism development was classified as either a driver (D) or a response (R). Out of 45 indicators, 26 were identified as drivers and 19 as responses. This classification aligns with the understanding that culture acts both as a driver, directly contributing to economic and social benefits, and as an enabler (responses, i.e., policies), enhancing the effectiveness of development interventions. Given that this thesis focuses on the role of cultural tourism in shaping regional economic resilience, only driver indicators, which directly bring economic benefits, were considered.

Furthermore, from the potential 26 driver indicators, 6 key indicators of interest were ultimately selected:

- Number of World Heritage Sites
- Number of elements inscribed on the UNESCO Intangible Cultural Heritage Lists
- Number of monuments on national lists
- Number of intangible cultural heritage elements on national lists
- Number of museums
- Number of cultural (and creative) enterprises.

These indicators were selected based on their relevance and data availability. For instance, during the implementation of the SmartCulTour project, it was challenging to gather many indicators due to a lack of georeferenced data, which was identified as a significant obstacle in the pilot econometric analysis of the project conducted across 35 local administrative units in six EU countries (Petrić et al., 2021). As a result, only 27 indicators were retained for the final analysis, 11 of which were driver indicators (Neuts, 2022). In the final step, out of the 11 considered driver indicators, the aforementioned 6 were selected for the analysis. The other 5 indicators were omitted for several reasons. To start with, inclusion and participation indicators, such as the percentage of tourists very satisfied with cultural facilities and the degree of positive assessment of gender equality, would require primary data collection, which is impractical for 378 NUTS 3 regions. Data on the number of cultural jobs was excluded because only about 10% of possible observations were available from the Orbis database. Finally, among the indicators of cultural infrastructure, only museums were retained, while theaters and public libraries were omitted, as museums are considered the most relevant element due to their potential to attract tourist flows and expenditures (Cellini & Cuccia, 2013; Pompili et al., 2019).

The first two indicators in the analysis are UNESCO indicators, specifically related to material World Heritage Sites (WHS) and elements inscribed on the UNESCO Intangible Cultural Heritage Lists (ICH). UNESCO established the lists of tangible and intangible cultural heritage to promote the preservation and appreciation of cultural diversity around the world. The World Heritage List for tangible cultural heritage, established under the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1972, includes monuments, buildings, and sites of historical, aesthetic, archaeological, scientific, ethnological, or anthropological value. The goal of this list is to identify and protect sites of outstanding universal value, ensuring their conservation for future generations (UNESCO, 1972).

The intangible cultural heritage lists, comprising the Representative List of the Intangible Cultural Heritage of Humanity and the List of Intangible Cultural Heritage in Need of Urgent Safeguarding, were established in 2003 under the Convention for the Safeguarding of the Intangible Cultural Heritage. These lists encompass practices, representations, expressions, knowledge, and skills that communities, groups, and individuals recognize as part of their cultural heritage. The objectives of these lists are to safeguard intangible heritage, ensure respect for the intangible cultural heritage of communities, raise awareness at local, national, and international levels about the importance of intangible cultural heritage, and provide international cooperation and assistance (UNESCO, 2022a). Both lists aim to promote cultural diversity and understanding, encourage sustainable development through cultural tourism, and foster international solidarity by highlighting the significance of both tangible and intangible cultural assets. They reflect UNESCO's commitment to protecting cultural heritage in all its forms, recognizing that both tangible and intangible elements are essential to the identity and continuity of cultures worldwide.

The WHS indicator is frequently used in cultural heritage and tourism economics research, making it one of the most utilized indicators in the field (Bertacchini et al., 2024; Castillo-Manzano et al., 2021; Cellini & Cuccia, 2016; Culiuc, 2014; E. Panzera, 2022; E. Panzera et al., 2021; Pompili et al., 2019; Škrabić Perić et al., 2021; Van der Zee et al., 2024; Y. Wang et al., 2024; Yang et al., 2019). It has also been employed in studies, alongside the pilot research of the SmartCulTour project, to investigate the role of cultural tourism in regional economic resilience (Muštra, Škrabić Perić, et al., 2023). This indicator was sourced from UNESCO's new World Heritage Online Map Platform (UNESCO, 2024c).

In contrast, despite the growing importance of intangible heritage (Barile, 2015), the ICH indicator is rarely used in research within cultural heritage and tourism economics (Dalle Nogare & Devesa, 2023), with only a few exceptions (Bak et al., 2019; García del Hoyo & Jiménez de Madariaga, 2024; Roh et al., 2015). However, to the best of the author's knowledge, in the context of cultural tourism's role in shaping regional economic resilience, the ICH indicator has not been used as an independent variable except in the SmartCulTour project. Muštra, Škrabić Perić et al. (2023) suggested its application in future research to explore its impact on regional economic resilience. Therefore, this research adopts their suggestion. The ICH indicator is sourced from the UNESCO database (2024a), specifically from country-specific pages dedicated to UNESCO intangible heritage elements. Detailed hyperlinks are provided in Appendix Table A1.

The main advantage of both UNESCO indicators lies in their coherent and consistent nature, as the criteria defined by UNESCO for nomination must be met by each site or element, regardless of region or country (E. Panzera, 2022). Additionally, following standard procedures in the literature (Arezki et al., 2009; Backman & Nilsson, 2018; García del Hoyo & Jiménez de Madariaga, 2024; Pivčević et al., 2016),

UNESCO indicators are expressed per 100,000 inhabitants. The following maps (Figure 10, Figure 11) display the WHS and ICH indicators.

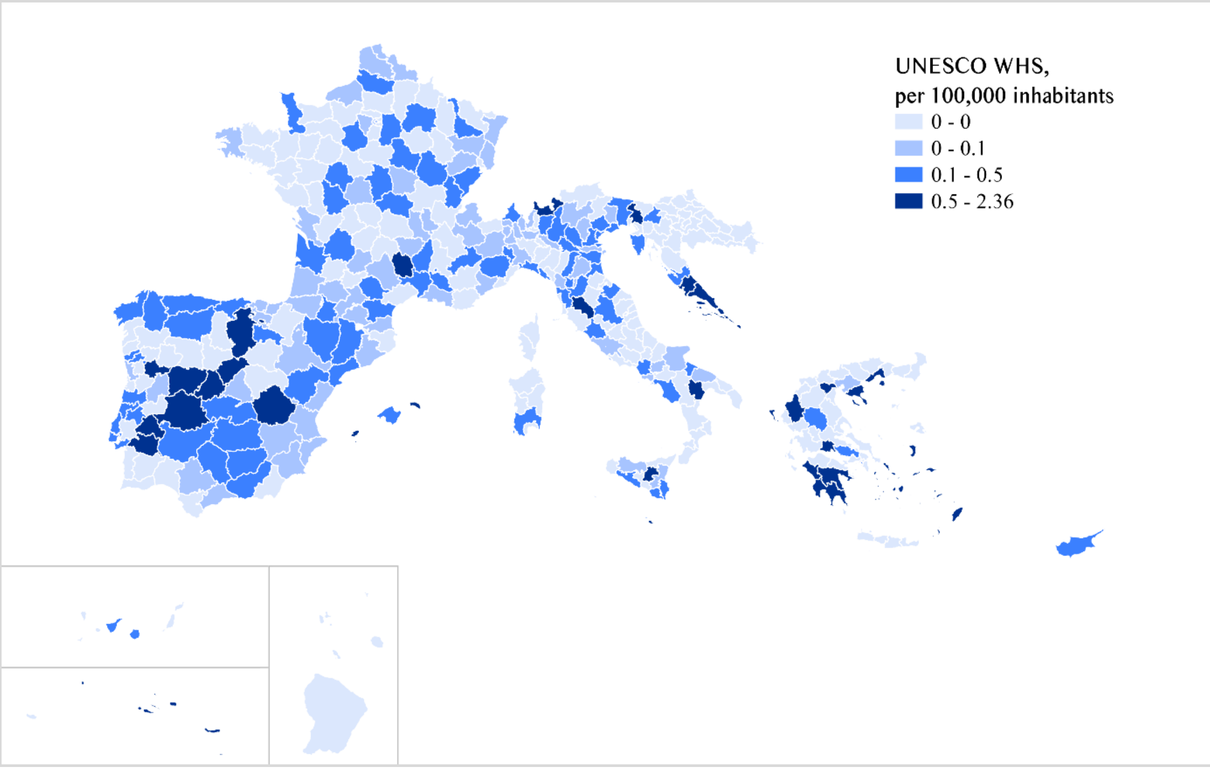

Figure 10. Number of World Heritage Sites per 100,000 inhabitants
Source: Author’s compilation using Eurostat’s GISCO and UNESCO’s data

The analysis of UNESCO World Heritage Sites per 100,000 inhabitants reveals significant regional disparities across the regions under study. Approximately half of the regions lack World Heritage Sites within their territories. The highest density of World Heritage Sites is observed in central Spain, the continental regions of Portugal, the southern Adriatic coast of Croatia, central Greece, its islands, the Peloponnese, and Malta. Moderate density is noticeable throughout Spain, France, northern Italy, and Cyprus.

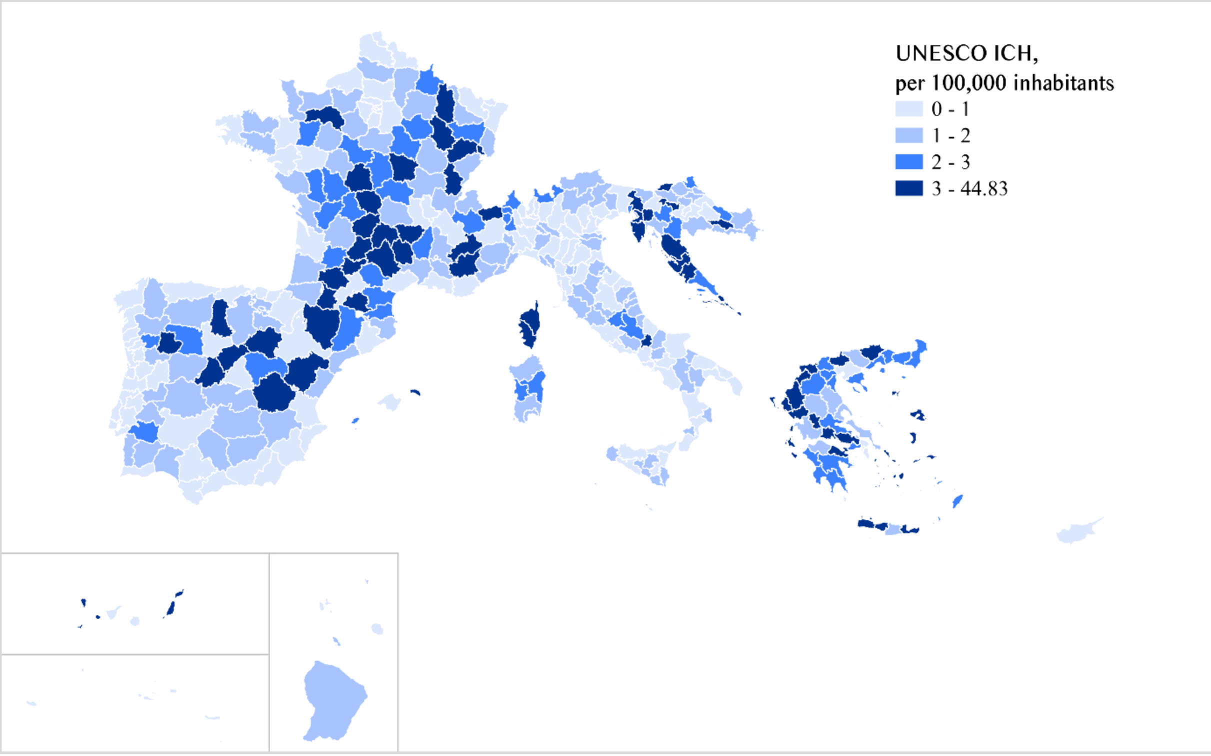

Figure 11. Number of UNESCO Intangible Cultural Heritage elements per 100,000 inhabitants

Source: Author's compilation using Eurostat's GISCO and UNESCO's data

The map depicting the number of UNESCO Intangible Cultural Heritage elements per 100,000 inhabitants across the South-European regions under study reveals distinct geographical patterns. Unlike material heritage sites, no region has a value of 0, as elements of intangible cultural heritage are common to entire countries and thus shared by all regions within them. The lowest density is observed throughout Italy, Portugal, Malta, Cyprus, the southern part of Spain, and the northern parts of France and Croatia. Conversely, high densities are found in the northeastern part of Spain, Adriatic Croatia, central Greece, the Greek islands, and the southwestern, central, and eastern parts of France.

While UNESCO sites and elements are of outstanding universal value, as E. Panzera (2022) explains, they should not be strictly considered indicators of the overall endowment of cultural heritage. The presence of WHS is more related to the exceptional quality and increased visibility conferred by the UNESCO label. If a region does not include a WHS, it does not imply a lack of tangible cultural heritage sites in that region. Therefore, important indicators of the spatial presence of cultural heritage include the number of monuments (MON) on national lists and the number of protected natural heritage sites on national lists (NIC).

Although national monuments are less frequently studied than UNESCO sites, they have been represented in research within the field of cultural and tourism economics (Backman & Nilsson, 2018; Cellini & Cuccia, 2013, 2019; Cerisola, 2019a; Cerisola & Panzera, 2024; García del Hoyo & Jiménez de Madariaga, 2024; Kuliš, 2023; E. Panzera, 2022; E. Panzera et al., 2021). In this thesis, national monuments are considered to include all immovable cultural goods protected at the national level. In contrast, intangible national elements have been extremely rarely used as indicators in the cultural and tourism economics literature. A few recent exceptions include studies by García del Hoyo and Jiménez de Madariaga (2024), Kuliš (2023), and Tan et al. (2023). In the context of this thesis, intangible elements cover all nationally protected intangible elements, such as traditions or living expressions inscribed in national cultural inventories of intangible heritage. These inventories are created in all countries to protect intangible cultural goods at the national level in line with UNESCO's (2022a) Convention for the Safeguarding of the Intangible Cultural Heritage, specifically its third part, "Safeguarding of the Intangible Cultural Heritage at the National Level," which encompasses Articles 11 to 15.

There are strong arguments for including national tangible monuments and intangible elements in research on the economic value of cultural heritage, as they provide a more comprehensive overview of cultural heritage endowment (Petrić et al., 2020, 2021). For example, Muštra, Škrabić Perić et al. (2023) suggested using not only UNESCO indicators but also other (national) tangible and intangible cultural heritage indicators to explore in more detail the role of culture in preserving regional economic resilience.

Data related to the regional supply of nationally protected monuments and intangible elements was collected from national cultural registers and inventories. The precise names of these registers and inventories, along with hyperlinks for access, are provided in Table A1 in the Appendix. Nevertheless, due to the heterogeneity of sources, this approach may produce inconsistencies across countries, arising from variations in regulations and data availability regarding cultural heritage. Thus, the observed heterogeneity in cultural heritage endowment across European regions might reflect differences in definitions or listing regulations rather than true variations in cultural heritage supply (E. Panzera et al., 2021).

Following the same logic as for the UNESCO indicators, nationally protected monuments and intangible elements are also expressed per 100,000 inhabitants. Their distribution across the regions under study is illustrated in the following figures (Figure 12, Figure 13).

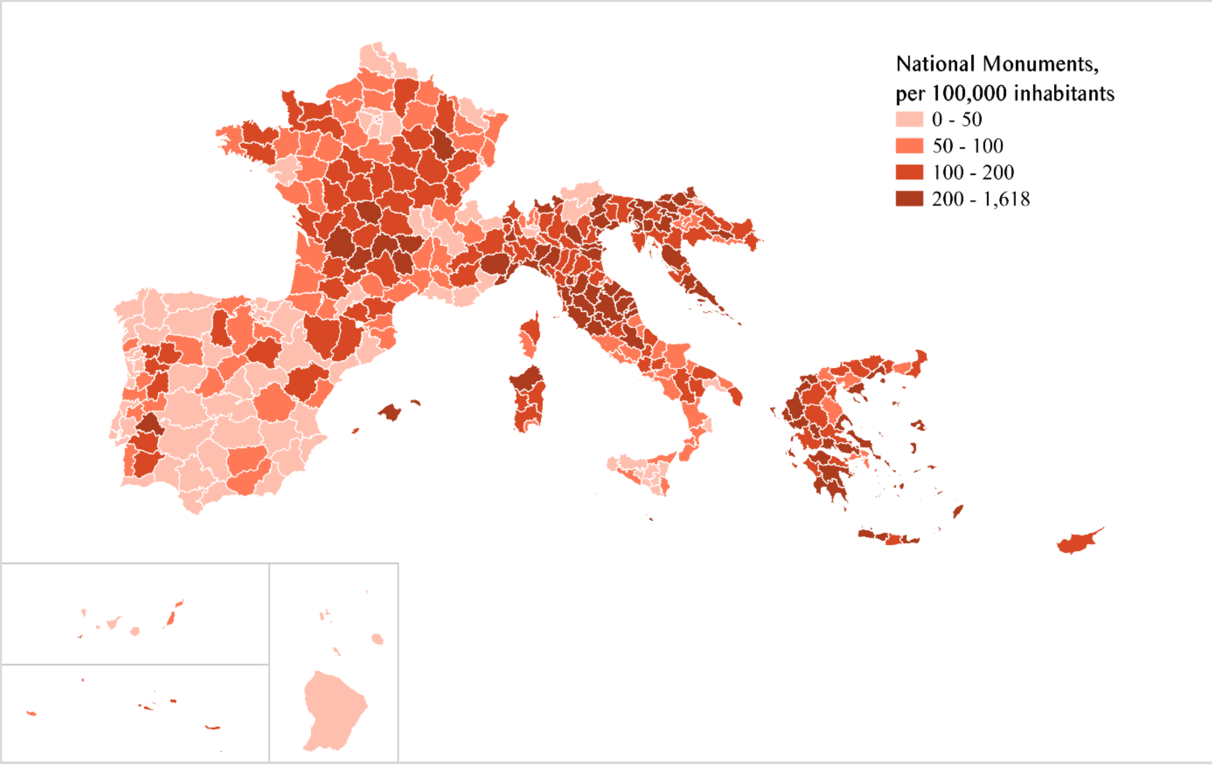

Figure 12. Number of national monuments per 100,000 inhabitants
Source: Author's compilation using Eurostat's GISCO and data from national cultural registers

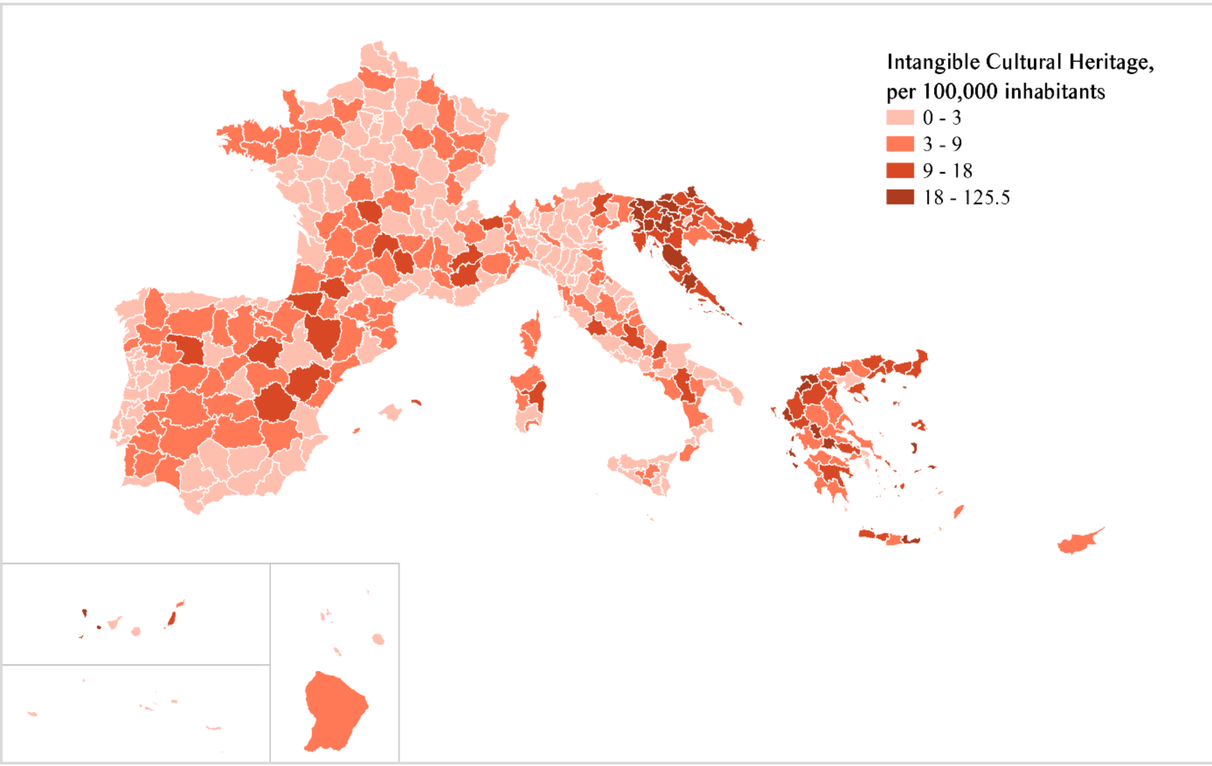

Figure 13. Number of national cultural heritage elements per 100,000 inhabitants
Source: Author's compilation using Eurostat's GISCO and data from national cultural inventories

Figure 12 indicates that the highest density of national monuments is found in northern Italy, the coastal regions of Croatia, Slovenia, Malta, and central and Peloponnesian Greece, including the Greek islands. Moderate to high density is observed throughout Cyprus, France, and the eastern parts of Portugal. In contrast, the lowest density is found in most of Spain, the western parts of Portugal, and Sicily in Italy.

Figure 13 reveals that the highest density of nationally protected intangible cultural heritage is present throughout Slovenia and Croatia, as well as in central Greece and the Greek islands. Conversely, very low to moderate density is noticeable in the regions of remaining countries, with most parts of France, Italy, Portugal, and Malta exhibiting very low density, while Spain has more regions with moderate density.

In addition to important indicators of the spatial presence of cultural heritage (*WHS, ICH, MON, NIC*), it is vital to incorporate indicators representing the infrastructure for cultural tourism, such as the number of museums and galleries (MUS) and cultural businesses, as proxied by the number of cultural and creative enterprises (BUS) (Petrić et al., 2020, 2021).

The role of museums in attracting tourists and creating economic value (Bertacchini et al., 2021; Cellini & Cuccia, 2013, 2019; ESPON, 2018; Mavrin et al., 2022; Piekkola et al., 2014; Sheppard, 2013; Škrabić Perić et al., 2021), as well as the role of cultural and creative industries in fostering regional innovation and competitiveness (Boix-Domenech et al., 2021; Boix-Domènech & Rausell-Köster, 2018; Cerisola, 2024; Cicerone et al., 2021; Dellisanti, 2023a; Piergiovanni et al., 2012), has been studied in cultural and tourism economics (Falk & Hagsten, 2022). However, these indicators are rarely explored concerning their role in regional economic resilience, despite their potential to provide adaptive responses to emerging needs from shocks (Capello & Dellisanti, 2023; Petrić et al., 2020). It is recommended that these indicators be included in research on the role of cultural tourism in shaping regional economic resilience (Muštra, Škrabić Perić, et al., 2023).

In line with Petrić et al. (2020, 2021) and García del Hoyo and Jiménez de Madariaga (2024), indicators per capita are used. Specifically, the number of museums per 100,000 inhabitants and the number of cultural and creative industries per 1,000 inhabitants.

The number of museums was obtained from national registers, with detailed information provided in Table A1 in the Appendix. Figure 14 illustrates the distribution of museums per 100,000 inhabitants across the regions under study.

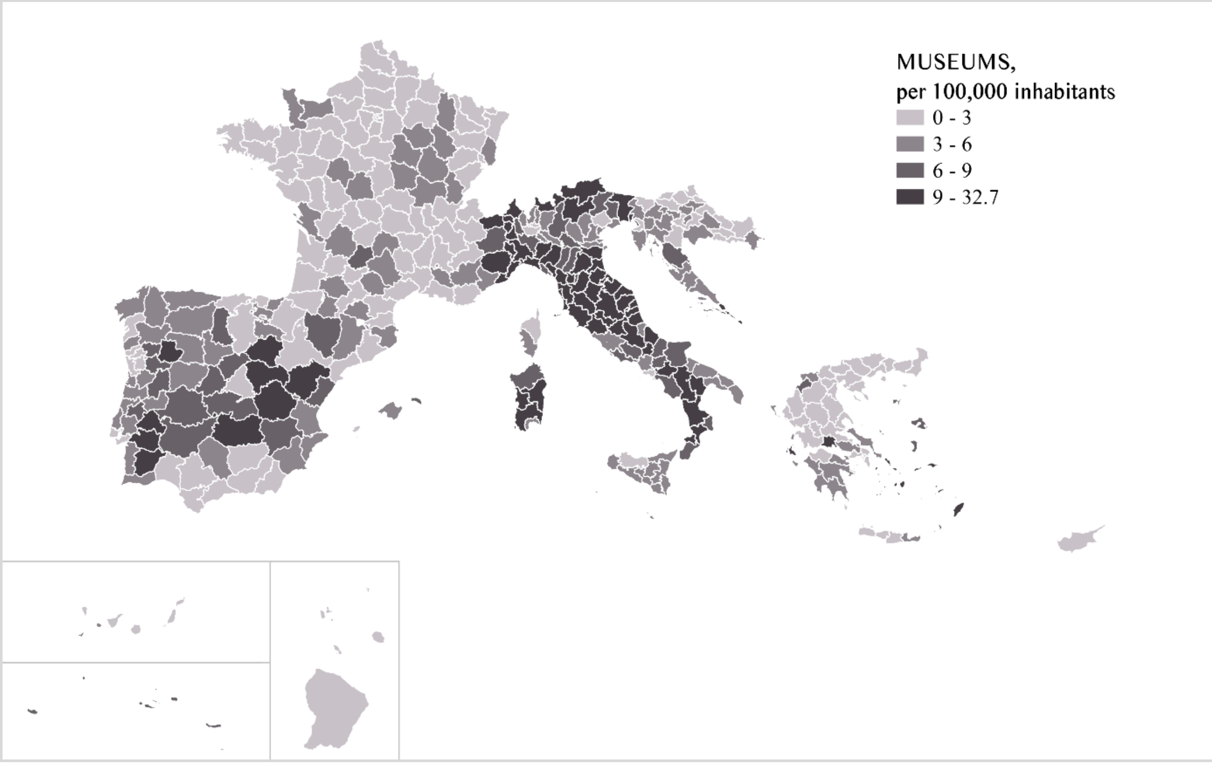

Figure 14. Number of museums per 100,000 inhabitants
Source: Author's compilation using Eurostat's GISCO and data from national museum registers

The map reveals that regions in Italy clearly dominate in museum density. There is a moderate to high density in Spain and Portugal, as well as in southern Greece. Slovenia, Malta, and the Adriatic part of Croatia exhibit moderate museum density, while very low density is observed throughout the majority of France, Greece, Cyprus, and continental Croatia.

The number of creative and cultural enterprises was sourced from the Orbis (Bureau van Dijk, 2024) database. Eurostat's (2024a) methodology for NACE Rev. 2 codes was used to identify all sectors within cultural and creative industries. The data focus on culture-related sectors of activity, as outlined by international experts in the final report of the European Statistical System Network on Culture (Bína et al., 2012).

In Figure 15 on the next page, the distribution of cultural and creative industries across South-European EU regions is illustrated. Due to a lack of data for certain regions in Italy, Greece, and Spain, totaling 18 regions, these areas are not represented on the map. The map shows that French and Slovenian regions dominate in the density of cultural and creative businesses, while there is moderate density in Portugal, northeastern Spain, Croatia, Cyprus, and central Italy. Most parts of Greece, Malta, and significant portions of Spain and Italy have low density.

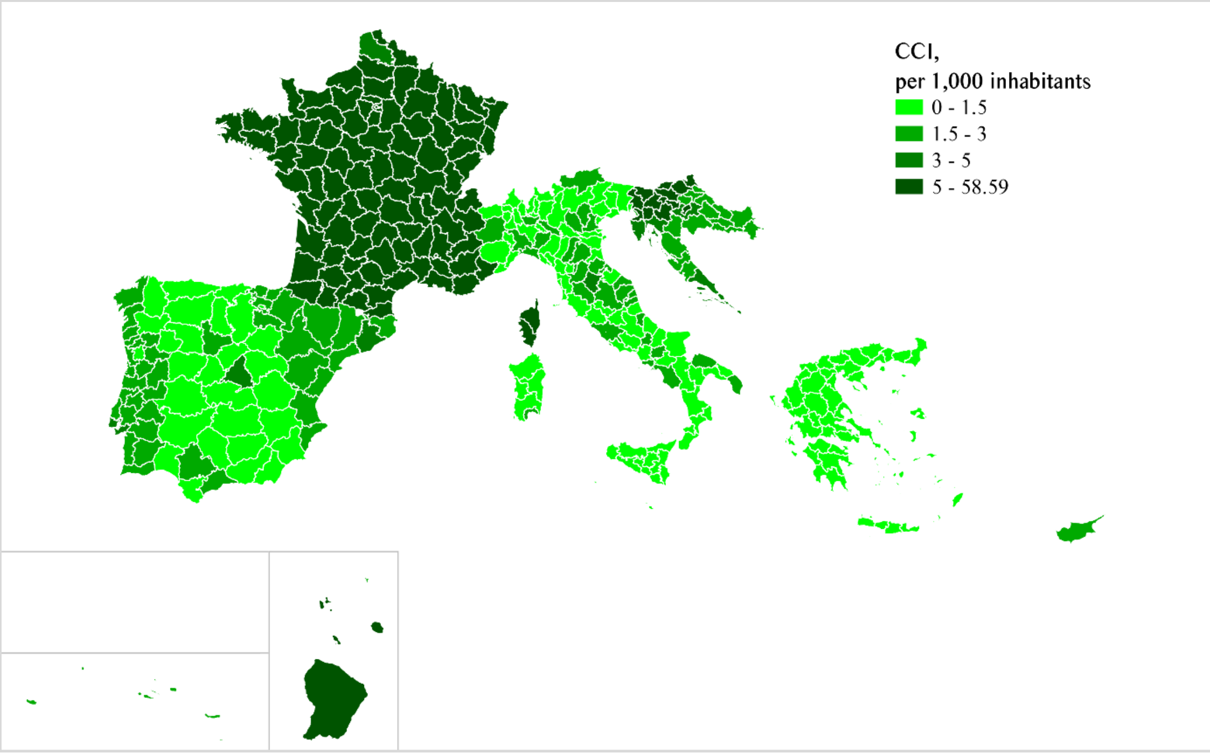

Figure 15. Number of cultural and creative businesses per 1,000 inhabitants
Source: Author's compilation using Eurostat's GISCO and data from the Orbis database

The following table (Table 3) provides descriptive statistics for all cultural tourism indicators, including the number of observations, average values, standard deviation, minimum, and maximum values.

Table 3. Descriptive Statistics for Cultural Tourism Indicators

Variable	N	Mean	Std. dev.	Min	Max
UNESCO WHS per 100,000 inhabitants	378	0.1459626	0.2917519	0	2.35649
UNESCO ICH elements per 100,000 inhabitants	378	2.252776	3.437402	0.0580594	44.82697
National monuments per 100,000 inhabitants	378	155.4734	167.7377	0	1618.475
National cultural heritage elements per 100,000 inhabitants	378	7.671206	13.3153	0.2167183	125.5155
Museums per 100,000 inhabitants	378	5.496228	5.211846	0	32.70271
Cultural and creative businesses per 1,000 inhabitants	360	4.04007	4.923899	0.0898526	58.58976

Source: Author's compilation

4.4.3. Tourism Demand Indicator

Tourism demand, broadly defined, includes the demand for tourism products across both macro and micro levels of the tourism industries (Song et al., 2023; Song & Li, 2008; Song & Witt, 2000). Thus, individual and aggregated tourism demand can be differentiated, with the latter comprising the aggregation of individual tourism demands (Fletcher et al., 2018; Hara, 2008; Vanhove, 2022).

Within the SmartCulTour resilience model, tourism demand was incorporated as a significant variable together with cultural tourism indicators. It demonstrated positive effects on economic resilience, underscoring the crucial role of tourism dynamics in fostering regional economic resilience (Petrić et al., 2021). Similarly, in the only other study focusing on the role of cultural tourism in regional economic resilience (Muštra, Škrabić Perić, et al., 2023), tourism demand was included as the main variable of interest, alongside cultural indicators, thereby affirming its importance in this specific research context.

Indicators commonly employed to proxy tourism demand in tourism economics include tourist arrivals, nights spent at tourist accommodations, and expenditures/receipts. Occasionally, other indicators such as travel exports and imports, occupancy rates, and length of stay are also considered (Dogru et al., 2021; Gunter et al., 2019; Lim, 1997, 1999; Peng et al., 2015; Rosselló Nadal & Santana Gallego, 2022). It is common practice to standardize the most commonly used indicators, like arrivals, nights spent, and expenditures, for example, on a per capita basis (Payne, Lee, et al., 2023; Rosselló-Nadal & He, 2020).

Recently, motivated by the limited spatial and temporal resolutions of data from available sources, which impede the fine-scale characterization of tourism, Batista e Silva et al. (2018) created more refined indicators, such as tourism density, specifically for the EU context. Tourism density refers to the number of arrivals or overnight tourists per given spatial reporting unit (for example, square kilometer), thereby increasing the geographical detail of existing statistics on the spatial distribution of tourism demand at the regional level. High tourism density values may signal economic dependence on tourism, overtourism, strain on resources, and susceptibility to demand shocks. In contrast, low values might suggest low tourism activity, possibly due to the destination's lack of attractiveness or unexploited potential for tourism development.

Thus, the tourism demand indicator (TOUR) employed in this study is tourism density, which is defined as the total number of nights spent (in thousands) over a year in each South-European EU region per square kilometer of the region's land area. This indicator is sourced from the EU Tourism Dashboard (2024) and is illustrated in the following map.

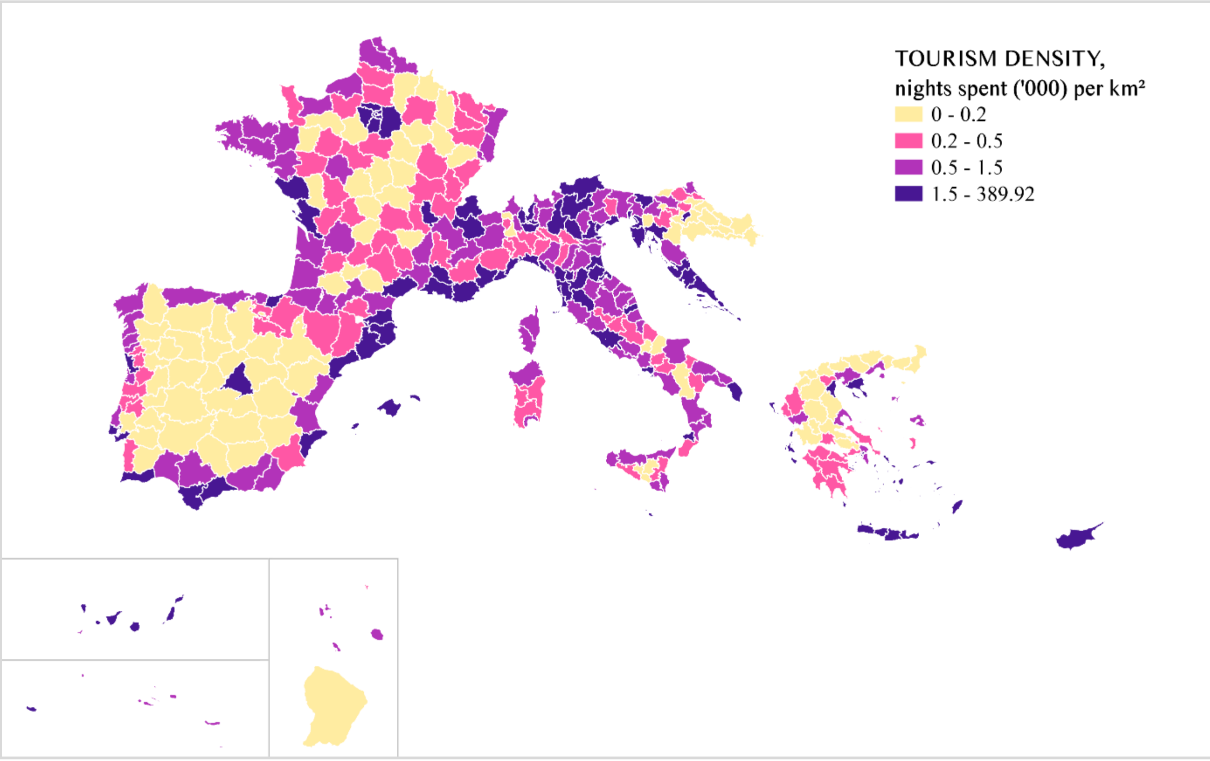

Figure 16. Number of nights spent (‘000) per square kilometer (tourism density)
Source: Author's compilation using Eurostat's GISCO and data from the EU Tourism Dashboard

The map reveals that, in general, the highest levels of tourism density are observed in Cyprus, Malta, and throughout Italy, particularly in its alpine regions. Similarly, coastal areas of Croatia, Spain, France, Portugal, and Greece exhibit high tourism density. In Slovenia, tourism density is moderate, whereas very low density is evident in the central regions of Spain, France, Greece, and the continental parts of Croatia.

Descriptive statistics are presented in the following table.

Table 4. Descriptive Statistics for Tourism Demand Indicator

Variable	N	Mean	Std. dev.	Min	Max
Number of nights spent per (‘000) per square kilometer (tourism density)	378	3.161576	20.65691	0.00541	389.9234

Source: Author’s compilation

4.4.4. Indicators of Control Variables

Based on the discussion in subchapter 2.2. about determinants of regional economic resilience, it is essential to include in the model other variables already recognized in the existing empirical literature as determinants of regional economic resilience. By incorporating these variables, it is possible to control for their influence, ensuring a more accurate estimation of the effects of the primary variables (cultural tourism, tourism demand) of interest. This approach enhances the robustness and validity of the findings, leading to a more comprehensive understanding of the dynamics within regional economic resilience (Gordon, 1968). The selection of control variables is based on theoretical foundations related to common determinants of regional economic resilience, combined with data availability at the NUTS-3 level (Ganau & Kilroy, 2023).

The first control variable included in this paper is the level of regional development (GDP), as initial economic conditions can influence a region’s capacity to endure and recover from external shocks (Giannakis, Bruggeman, et al., 2024; A. Kitsos & Bishop, 2018). However, past studies have shown inconclusive results regarding the link between the initial level of economic development and economic resilience (Artelaris et al., 2024). Some studies have found a positive relationship between regional economic development and the ability to react to and recover from external shocks, indicating that more advanced regions are better positioned to confront crises (Kuliš et al., 2022; Petrakos & Psycharis, 2016). In contrast, other studies have drawn different conclusions. For instance, Tupy et al. (2021) found that more developed regions were more severely impacted by nationwide recessions, implying that initial economic success does not necessarily guarantee resilience. Resilience is influenced by a region's ability to sustain its status over time and adapt to shock-induced changes. The indicator used is regional GDP per capita, expressed as a percentage of the EU average, specifically the volume index of GDP per capita in Purchasing Power Standards (PPS) relative to the EU average set at 100. Data is sourced from the Urban Data Platform Plus (European Commission, 2024c).

The level of governance, or the quality of institutions (EQI), is another important variable affecting economic resilience (Corodescu-Roșca et al., 2023; Pascariu, Iacobuta, et al., 2021). Moreover, the regional quality of government plays a crucial role as it is one of the most robust drivers of regional resilience, with higher quality of government being associated with greater regional resilience (Di Marcoberardino & Cucculelli, 2024; Rios & Gianmoena, 2020). Given the lack of data at the NUTS 3 level, the quality of governance is measured at the NUTS 2 level using the European Quality of Government Index as a proxy (Charron et al., 2014, 2019, 2022).

Next, sectoral diversity (HHI) is considered a crucial determinant of economic resilience, although its role remains ambiguous (Artelaris et al., 2024; Nijkamp et al., 2024). While specialization can foster growth by enhancing competitiveness and externalities, it may also expose local economies to the impacts of business cycles affecting specialized sectors (Di Caro, 2017; A. Kitsos & Bishop, 2018). In other words, regions with diverse economic structures may demonstrate lower sensitivity to external shocks, as more varied structures serve to distribute and thereby reduce risk concentration (Crescenzi et al., 2016). On the other hand, the benefits of a diversified regional economy can be offset by sectoral interrelatedness, which can spread shocks from one sector to another, leading to uncertain outcomes for regional economies (Artelaris et al., 2024; Martin, 2012).

Building on the adaptation by Giannakis et al. (2024), the Herfindahl–Hirschman Index (Herfindahl, 1950; Hirschman, 1964) is employed to quantify sectoral diversity across regions according to the following formula:

$$HHI_i = \sum_j^N S_{ij}^2 \qquad \textbf{(4)}$$

where $S_{i,j}$ reflects the gross value added share in region *i* across sector *j*. The index captures the distribution of gross value added across various sectors in region i. The evaluation of sectoral diversity incorporates six sectors according to the NACE Rev. 2 classification [1]. An index value closer to zero denotes a higher level of diversity in the regional economy j. The Herfindahl–Hirschman Index in this thesis was calculated using data from the ARDECO database (2023).

Transport performance is included as another control variable. Recent literature increasingly recognizes the role of transport, commonly measured as transport accessibility, in helping regions achieve regional economic resilience (Chacon-Hurtado, Losada-Rojas, et al., 2020; Lyu & Tong, 2021; Östh et al., 2023). Evidence shows that transport accessibility is related to higher levels of regional economic resilience, confirmed in several recent studies (Chacon-Hurtado,

[1] Agriculture, forestry and fishing [A]; industry, except construction [B-E]; construction [F]; wholesale and retail trade, transport, accommodation and food service activities, information and communication [G-J]; financial and insurance activities, real estate activities, professional, scientific and technical activities, administrative and support service activities [K-N]; public administration and defence, compulsory social securit, education, human health and social work activities, arts, entertainment and recreation, repair of household goods and other services [O-U].

Kumar, et al., 2020; Giannakis & Bruggeman, 2020; Östh et al., 2015). Nevertheless, this relationship may vary across different resilience phases. For instance, high accessibility may negatively impact regions during the resistance phase by propagating exogenous shocks but may also enhance competitive efficiency through reduced transportation costs, contributing to faster recovery (Giannakis & Papadas, 2021; Ibanescu et al., 2023; Östh et al., 2018). The indicator used is transport performance, instead of transport accessibility, because although accessibility indicators represent a significant improvement over indicators such as speed, capacity, or congestion, they often primarily reflect the spatial distribution of destinations rather than the performance of transport networks (Dijkstra et al., 2019). Transport performance is defined as the accessible population divided by the nearby population and refers to the LUISA reference scenario 2019 (Lavalle et al., 2020). The data for this indicator was obtained from the Urban Data Platform Plus (European Commission, 2024c).

Given the specific context of the COVID-19 shock, which began as a public health emergency in early 2020 and swiftly led to an economic recession, paralyzing business activities and reducing aggregate demand (Miocevic & Srhoj, 2023; Quaglia & Verdun, 2023a), it is crucial to consider policy response as a key factor in regional resilience. Research indicates that effective policy measures are essential for managing disasters like the COVID-19 pandemic to ensure economic resistance and recovery (Barbero et al., 2024; Bourdin, Moodie, et al., 2023; Bourdin & Levratto, 2023; Goniewicz et al., 2023). When the crisis emerged in 2020, many governments at all levels responded promptly (OECD, 2021), with the EU displaying a notable level of adaptability during this emergency (Quaglia & Verdun, 2023b; Wolff & Ladi, 2020). Even though policies are implemented at the sub-national level, the capacity of sub-national governments to manage the crisis differs between countries (Ahmad, 2021). In many cases, especially in highly centralized countries, regional and local actors had limited influence over developing local policies in response to the pandemic (Amdaoud et al., 2020; Bourdin et al., 2022). Notably, various countries imposed lockdowns on a national scale in reaction to localized outbreaks (Caselli et al., 2022). Also, effective national policies related to economic measures were crucial and of paramount importance in the COVID-19 response (ILO, 2023; IMF, 2021; Lacey et al., 2022; World Bank, 2020, 2022). Across the globe, including in the EU, most countries implemented a careful balance of policy stringency and economic support in response to the COVID-19 pandemic to ensure public health, social security, and a vibrant economy (Bajra et al., 2023). Therefore, the situational index related to the shock and government response is essential, as it impacts resistance and recovery (Jiao et al., 2024). As highlighted by Charlton and Castillo (2021), the stringency measures enacted by most countries, such as restrictions on the movement of people and goods, state of emergency declarations, travel bans, and work prohibitions, effectively led to a reduction in aggregate demand, decreased capacity, business closures, and job losses across many sectors and economies. Thus, the final control variable included in the model is the stringency index (SI) from the Oxford COVID-19 Government Response Tracker (OxCGRT) developed by Hale et al. (2021). This situational indicator takes into account measures such as school and workplace closures, cancellation of public events, gathering restrictions, public transport closures, stay-at-home requirements, internal movement restrictions, international travel restrictions, and public information campaigns at different times. The index ranges from 0 to 100, where a higher score reflects a more stringent response.

Descriptive statistics for control variable indicators are presented in the following table.

Table 5. Descriptive Statistics for Control Variable Indicators

Variable	N	Mean	Std. dev.	Min	Max
GDP per capita (in PPS, EU=100)	378	79.6746	29.66591	29	339
European quality of government index	378	-0.415	0.7676325	-2.075	0.886
The Herfindahl-Hirschman index	378	0.2323586	0.0300601	0.1852656	0.3858046
Transport performance	378	70.96886	24.91192	0	125.08
COVID policy stringency index, 2020	378	56.75873	5.703987	43.37227	64.64533
COVID policy stringency index, 2021	378	59.01037	8.094658	40.75468	72.27019
COVID policy stringency index, 2022	378	23.97944	5.11247	16.558	32.41573

Source: Author's compilation

Additionally, recognizing that regional resilience in the EU is heavily influenced by national patterns, the empirical analysis incorporates country dummies. This ensures that the observed relationship between various factors and resilience does not merely capture the underlying influence of national-level institutional, economic, financial, and historical factors or other unspecified country-specific attributes affecting regional resilience (Ezcurra & Rios, 2019; Giannakis & Papadas, 2021; Hundt & Holtermann, 2020; Rios & Gianmoena, 2020). This consideration is particularly important in the context of the economic shock produced by

COVID-19, as responses varied across countries, leading to different impacts on their economies and growth prospects (Barišić & Kovač, 2022).

Finally, the necessity of incorporating spatial spillovers into the model is supported by numerous studies demonstrating their influence on regions' resistance and recovery from exogenous shocks (Annoni et al., 2019; Cainelli et al., 2019). The subsequent chapter, dedicated to econometric methods, provides a more detailed discussion of the role of spatial spillovers in investigating regional economic resilience.

4.4.5. Summary of Variables, Indicators, and Data Sources

In the table below, an overview of all variables, their labels, indicators, and data sources is provided.

Table 6. Overview of Variables, Labels, Indicators, and Data Sources

Variable	Label	Indicator	Source
Dependent variable			
Regional economic resilience	**RES**	Economic resistance, change in GVA in 2020 compared to 2019 relative to the EU	ARDECO
		Economic recovery, change in GVA in 2021 (and 2022) compared to 2020 relative to the EU	
Cultural tourism and tourism demand			
Spatial cultural resources	**WHS**	Number of World Heritage Sites (per 100,000 inhabitants)	UNESCO
	ICH	Number of elements inscribed on the UNESCO Intangible Cultural Heritage Lists (per 100,000 inhabitants)	
	MON	Number of monuments in national lists (per 100,000 inhabitants)	National cultural registers and inventories
	NIC	Number of protected intangible cultural heritage sites in national lists (per 100,000 inhabitants)	
Cultural infrastructure	**MUS**	Number of museums per 1,000 inhabitants	
Cultural businesses	**BUS**	Number of cultural (and creative) enterprises (per 100,000 inhabitants)	Orbis, Bureau van Djk
Tourism demand	**TOUR**	Number of tourist overnights per 1,000 m^2	EU Tourism Dashboard
Control variables			
Regional development	**GDP**	GDP per capita (in PPS, EU=100)	ARDECO
Governance	**EQI**	European quality of government index (NUTS 2)	Charron et al. (2019)
Sectoral diversity	**HHI**	The Herfindahl-Hirschman index	ARDECO
Transport performance	**TP**	Transport performance is defined as the accessible population divided by the nearby population	Urban Data Platform Plus
Stringency index	**SI**	COVID policy stringency index (national)	Hale et al. (2021)
Country dummies	**CD**	1 if the specified country is present, 0 if it is not	Eurostat

Source: Author's compilation

As per Martin and Sunley (2015, 2020), the economic resilience of a region is tied to its past growth characteristics. Following this reasoning, for all independent variables, pre-COVID-19 data, specifically from 2019, were used where feasible. For cultural heritage spatial and infrastructure indicators, data were collected from February to May 2024, based on the inventory at the time of collection (Petrić et al., 2020). Nevertheless, as noted by E. Panzera (2022), considering the time-invariant nature of cultural heritage, it can be reasonably assumed that these figures have not changed significantly over time, thus the current numbers are nearly equivalent to those of 2019. Apart from the exception related to cultural heritage variables,

Apart from the cultural heritage variables, it is evident that the stringency index is the sole variable using data from the respective years, specifically the resistance phase of 2020 and the subsequent recovery phases of 2021 and 2022.

4.5. Econometric Methods

4.5.1. Ordinary Least Squares

As simply explained by Sampaio (2023), linear regression is an essential statistical tool that enables the identification of patterns, prediction-making, and data-driven insights. At the core of this method lies Ordinary Least Squares (OLS), which is used to estimate the parameters of a linear regression model. OLS systematically fits a line that best represents the relationship between one or more independent variables (regressors) and the dependent variable (regressand) by minimizing the sum of squared residuals, the differences between observed and predicted values. For OLS to provide unbiased and efficient estimates, five assumptions must hold: normality (errors are normally distributed), linearity (relationship between variables is linear), homoscedasticity (constant error variance), independence (observations are independent), and non-multicollinearity (independent variables are not highly correlated) (Pivac, 2010; Rozga, 2006).

The general form of a multiple regression model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \varepsilon \quad \textbf{(5)}$$

where Y is the dependent variable, β_0 is the intercept, β_1, β_2, ..., β_k are the coefficients of the independent variables, X_1, X_2, ..., X_k are the independent variables and ε is the error term (Stock & Watson, 2020).

It can be also written down in matrix/vector notation (Burkey, 2018; Le Gallo, 2021):

$$Y = X\beta + \varepsilon \qquad \textbf{(6)}$$

where N refers to the total number of observation (in this case regions); K is the total count of parameters to be estimated; Y represents the $(N \times 1)$ vector of observations on the dependent variable; X denotes the $(N \times K)$ matrix of explanatory variable observations, usually including an intercept; β is the $(K \times 1)$ vector of parameters to be estimated; and ε is the $(N \times 1)$ vector of error terms.

4.5.2. Spatial Econometrics

Spatial dependence

The integration of regional economies within the global economy occurs through complex networks of trade, labor mobility, capital flows, technology transfer, and knowledge diffusion (Cartone et al., 2022; Dall'erba & Llamosas-Rosas, 2021; Storper, 1997). This interconnectivity indicates that regional economies are not isolated but influenced by their neighboring regions, demonstrating spatial dependence (Sutton & Sutton, 2024). As articulated by Tobler's first law of geography (1970, p. 236), "everything is related to everything else, but near things are more related than distant ones" (Miller, 2004). Spatial dependence generally refers to the tendency for proximate locations to influence each other and exhibit similar characteristics (Anselin, 1990, 2022; Anselin & Rey, 1991; DiBiase, 2014; Goodchild, 1992; LeSage, 2015). In regional economics, this implies that activities in one region impact those in another, with the strength of these effects diminishing with increasing distance (Andersson & Gråsjö, 2009; LeSage & Pace, 2008).

Spatial dependence is reflected in geospatial data, where data values from nearby locations tend to be more similar than those from locations farther apart, demonstrating positive spatial autocorrelation (Haining & Li, 2021). Sutton and Sutton (2024) observe that Florax et al. (2003) highlight spatial dependence as the rule rather than the exception in spatial datasets. Since traditional regression models and associated estimation methods presume independence between observations, addressing spatial dependence requires the application of spatial econometrics, focusing on modifications necessary for estimating and interpreting regression models with spatially dependent outcomes (Fischer & Nijkamp, 2021; Le Gallo, 2021). In addition, spatial analysis facilitates a deeper understanding of the true characteristics of phenomena by incorporating geographical aspects, revealing previously hidden patterns, and providing insights into the spatial dependence and interactions between variables in different locations (Kopczewska, 2020).

Accordingly, it is not surprising that spatial econometrics has experienced exponential growth in interest within the social sciences over recent years. This interest is fueled by the recognition of the role of space and spatial interactions in economic theory, the availability of geo-referenced data, and the advancements in geographical information systems and spatial data analysis software. The field has matured and is now generally accepted as a mainstream methodology (Anselin, 2010; Le Gallo, 2021). As a result, in the last two decades, the significance of spatial externalities has been increasingly acknowledged in regional studies and economic geography, especially in relation to economic growth theory and empirical findings (Basile, 2008; Dall'erba & Llamosas-Rosas, 2021; Fischer, 2011). Hence, examining spatial dependence is crucial for understanding the underlying dynamics of regional economies, including their economic resilience (Sutton et al., 2023; Sutton & Sutton, 2024).

De Siano et al. (2020) emphasize the importance of recognizing spatial effects in regional economic resilience studies. Neglecting them could lead to model misspecification, stemming from the omission of variables. This oversight could further alter the accurate representation and comprehension of the underlying causal mechanisms. A potential outcome might be biased estimation results, yielding potentially misguided policy directives. In a recent study, Sutton and Sutton (2024) argue that the literature on regional economic resilience has largely overlooked the impact of spatial dependence on regions' resilience. Furthermore, while the significance of spatial analysis is also acknowledged, its limited application within the fields of tourism economics (Romão & Nijkamp, 2018) and cultural studies (Dalle Nogare & Devesa, 2023) is evident. Likewise, in the specific context of investigating the nexus of regional economic resilience and cultural tourism, there is a clear recommendation to adopt a spatial econometrics approach (Muštra, Škrabić Perić, et al., 2023).

As described by Elhorst (2014), different spatial regression model specifications are available to address spatial dependence issues, which rely on three types of interaction effects in spatial econometric models: endogenous interaction effects among the dependent variable (Y), exogenous interaction effects among the independent variables (X), and interaction effects among the error terms (e). In his research, Rüttenauer (2022) discusses a range of spatial model specifications available for explicitly modeling and addressing spatial dependence issues. The author explains that the spatial autoregressive (SAR) model is employing the spatial weights matrix W and introducing an endogenous spatially lagged dependent variable Wy to the conventional regression equation. On the other hand, the spatial error model (SEM) captures spatial dependence among error terms $u = Wu + \varepsilon$, while the spatial lag of X (SLX) model includes the spatial lags of exogenous covariates WX. Advanced specifications combine these fundamental models. The spatial autoregressive combined (SAC) model incorporates autocorrelation in both the dependent variable and error term (Wy and Wu), and the spatial Durbin model (SDM) merges an autoregressive dependent variable with spatially lagged covariates (Wy and WX). The spatial Durbin error model (SDEM) combines a spatial error term with spatially lagged covariates (Wu and WX), and the general nesting spatial (GNS) model encompasses all three spatial terms (Wy, Wu, and WX) in its specification.

When deciding among the different options and selecting the appropriate spatial regression model, researchers may adopt either a *specific-to-general* or a *general-to-specific* approach (Burridge, 2011; Elhorst, 2010, 2014; Mur & Angulo, 2009). Burkey (2018) outlines that the *specific-to-general* approach begins with a non-spatial model (OLS) to assess whether the SAR or SEM is better suited to the data. As he notes, Anselin (Anselin, 1988; Anselin et al., 1996) preferred the Lagrange Multiplier (LM) approach for specification searches, beginning with the OLS model and deriving five LM statistics to determine if the OLS model suggests the SAR or SEM model. This approach excludes the consideration of the Spatial Lag of X (SLX) model (Halleck Vega & Elhorst, 2015)

On the other hand, the *general-to-specific* approach starts with the most complex model and employs the likelihood-ratio (LR) test to sequentially eliminate non-significant variables (Herrera-Gómez, 2022; Le Gallo, 2021; LeSage & Pace, 2009). According to Rüttenauer (2024), one theoretically begins with a GNS specification and progressively restricts the model to simpler forms based on the significance of parameters, as illustrated in Table 7.

Table 7. Overview of Spatial Regression Models: GNS, SAC, SDM, SDEM

Model	Specification	Restricted parameters	Spillo-vers	Eq. no.
GNS	$Y = \beta_0 + \rho WY + X\beta + WX\boldsymbol{\theta} + u, u = \boldsymbol{\lambda} Wu + e$		Global	**(7)**
SAC	$Y = \beta_0 + \rho WY + X\beta + u, u = \lambda Wu + e$	$\theta = 0$	Global	**(8)**
SDM	$Y = \beta_0 + \rho WY + X\beta + WX\theta + e$	$\lambda = 0$	Global	**(9)**
SDEM	$Y = \beta_0 + X\beta + WX\theta + u, u = \lambda Wu + e$	$\rho = 0$	Local	**(10)**

Source: Author’s compilation based on Elhorst (2014) and Kopczewska (2022)

However, the parameters of the GNS model, while estimable, frequently either inflate each other or become insignificant. As a result, the GNS model does not offer better performance than the SDM and SDEM models, making it unsuitable for selecting among simpler models with fewer spatial lags (Burridge et al., 2016; Halleck Vega & Elhorst, 2017). Given its weak identification and overparameterization, the GNS model provides little guidance in choosing the correct restrictions. Therefore, a more intuitive starting point would be one of the simpler models, such as SDM, SDEM, or SAC (Rüttenauer, 2022, 2024).

Despite the literature's focus on the SAC specification for its theoretical econometric relevance, practitioners can safely disregard it due to its numerous applied drawbacks, as noted by LeSage (2014b) and corroborated by Halleck Vega and Elhorst (2017). According to Rüttenauer (2024), models like SAC, which estimate a single spatial parameter for all covariates, place considerable constraints on indirect impacts, potentially leading to biased estimates in the presence of multiple covariates. Additionally, Rüttenauer (2022) demonstrated through Monte Carlo simulations that SAC specifications are outperformed by the more flexible SDM, SDEM, and SLX models.

As a result, regional science practitioners are left with a narrowed choice, focusing on the SDM and SDEM specifications when adopting a *general-to-specific approach* (LeSage, 2014b). Table 8 provides an example of using the SDM as a starting point, allowing for the derivation of simpler, nested models by imposing parameter restrictions, and Table 9 outlines the possible variants for the SDEM. Furthermore, LeSage (2014b, 2014a) states that the choice between the SDM and SDEM specifications for regional science practitioners depends on the nature of spillover effects. If the spillover effects are global, the SDM specification is appropriate, whereas if the effects are local, the SDEM specification is more suitable.

Table 8. Overview of Spatial Regression Models: SDM, SAR, SLX, SEM

Model	Specification	Restricted parameters	Spillo-vers	Eq. no.
SDM	$Y = \beta_0 + \rho WY + X\beta + WX\theta + e$		Global	**(11)**
SAR	$Y = \beta_0 + \rho WY + X\beta + e$	$\theta = 0$	Global	**(12)**
SLX	$Y = \beta_0 + X\beta + WX\theta + e$	$\rho = 0$	Local	**(13)**
SEM	$Y = \beta_0 + X\beta + u, u = \lambda Wu + e$	$\theta = -\rho\beta$	None	**(14)**

Source: Author's compilation based on Elhorst (2014) and Kopczewska (2022)

Table 9. Overview of Spatial Regression Models: SDEM, SLX, SEM

Model	Specification	Restricted parameters	Spillo-vers	Eq. no.
SDEM	$Y = \beta_0 + X\beta + WX\theta + u, u = \lambda Wu + e$		Local	**(15)**
SLX	$Y = \beta_0 + X\beta + WX\theta + e$	$\lambda = 0$	Local	**(16)**
SEM	$Y = \beta_0 + X\beta + u, u = \lambda Wu + e$	$\theta = 0$	None	**(17)**

Source: Author's compilation based on Sutton and Sutton (2024), Elhorst (2014) and Kopczewska (2022)

LeSage and Pace (2021) highlight that a major topic in regional science is the concept of spatial spillovers. Broadly defined, spatial spillovers occur when changes in one region influence other regions. Global spillovers happen when changes in a region have effects that extend beyond immediate neighbors, extending to neighbors of neighbors and further. Local spillovers, in contrast, affect only nearby regions, with their influence fading before reaching regions beyond the immediate neighbors. Additionally, a distinction is that global spillovers involve feedback effects or loops between neighbors, whereas local spillovers do not exhibit such feedback mechanisms. As explained by Rüttenauer (2024), local spillover effects are straightforward to interpret: they denote the impact of a change in x_j among local neighbors on the outcome of the focal unit y_i. In contrast, global spillover effects are more complex, reflecting the effect of a change in one unit x_j on the whole system of neighbors, resulting in a new equilibrium outcome for y.

At this point, the question arises of whether to examine regional economic resilience through global or local spillover effects, specifically using the SDM or SDEM model specifications. To make an accurate decision, the theoretical underpinnings of regional economic resilience must be considered. Building on this, Sutton and Sutton (2024) recently developed a roadmap to assist researchers in examining regions' resilience and associated determinants through the necessary steps for a robust spatial regression model of spatial dependence: i) assessing the appropriateness of a spatial model; ii) selecting the suitable spatial model; and iii) optimizing the spatial weight matrix (Kopczewska & Elhorst, 2024). This process is illustrated in Figure 17.

As detailed by Sutton and Sutton (2024), the first step in investigating the suitability of spatial data analysis for an empirical study involves checking for spatial autocorrelation in a model's residuals. The process typically starts with OLS estimates. Following the guidelines of Le Gallo (2021), Moran's I test (Moran, 1950) is then performed to detect spatial autocorrelation in the residuals of the standard linear model. If the null hypothesis of independence is rejected, indicating the presence of omitted spatial autocorrelation, additional explanatory variables should be incorporated. If, after retesting, the null hypothesis remains rejected, a spatial model should be considered. If the null hypothesis is not rejected, a standard linear regression is appropriate. The creation of a spatial weight matrix, essential for conducting Moran's I, is discussed later in the text, specifically in step 3.

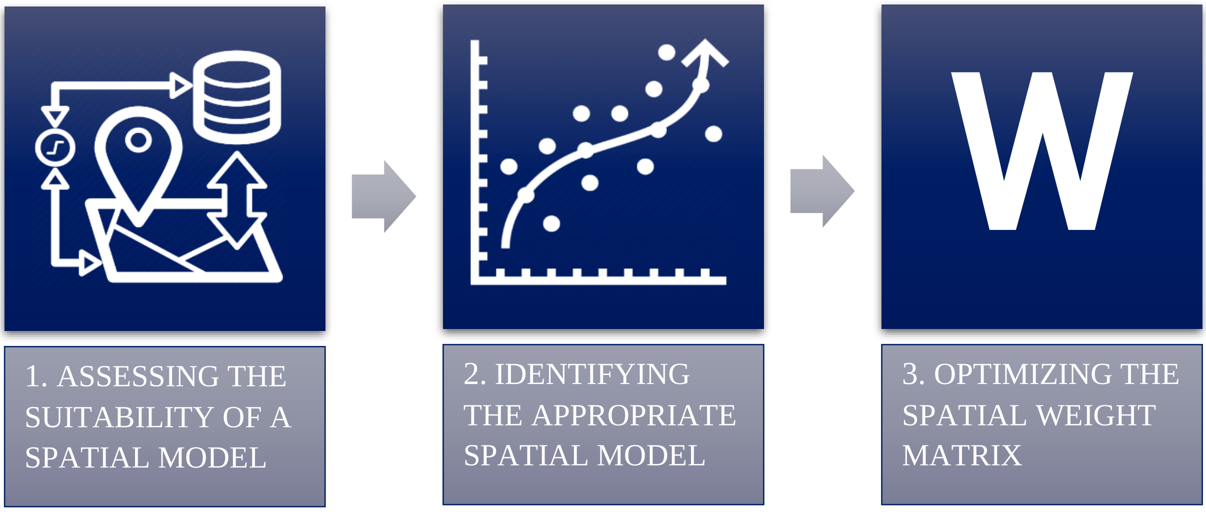

Figure 17. Process of Spatial Modelling in Regional Economic Resilience Research
Source: Author's compilation based on Sutton and Sutton (2024)

Upon confirming the appropriateness of a spatial model, the second step is to identify the suitable type of spatial model. Adopting a *general-to-specific* approach narrows the options to the SDM, which accounts for global spillovers, and the SDEM, which addresses local spillovers. LeSage (2014b, p. 14), in his discussion on what regional scientists need to know about spatial econometrics, posits that "most spatial spillovers are local," suggesting that global spillover phenomena are less common than local spillovers in applied regional science modeling. He explains that, in most applied regional modeling scenarios, theoretical considerations indicate that a local spillover specification is appropriate. A distinguishing feature of local spillovers is the absence of endogenous interaction and feedback effects. Endogenous interactions lead to a situation where changes in one region trigger adjustments in all regions in the sample, leading to a new long-term equilibrium. Halleck Vega and Elhorst (2015) support the view that justifying the inclusion of endogenous interaction effects is difficult without a strong theoretical basis, even though they may be statistically apparent. Thus, unless there is a strong theoretical rationale, models with endogenous interaction effects are challenging to support.

In line with these arguments, Sutton and Sutton (2024) advocate for the use of local spatial models to examine regional economic resilience, as it is difficult to theoretically justify regional characteristics producing global effects in times of crisis. Regional attributes such as developmental trajectories, governance, and sectoral diversity are more likely to generate local spillovers during shocks and recovery phases rather than global spillovers. Thus, of the three types of interaction effects in spatial econometric models identified by Elhorst (2014), only exogenous interaction effects among the independent variables and interaction effects among the error terms are relevant for studying regional economic resilience.

Reflecting the preceding arguments, it is recommended to focus on local spillovers rather than global spillovers when studying regional economic resilience. Therefore, one should start with the SDEM model specification. Then, following the *general-to-specific* approach, the likelihood-ratio (LR) test should be applied to systematically remove non-significant variables and evaluate the suitability of a nested, simpler model, such as the SLX or SEM (Burkey, 2018)

Finally, in the third step, an appropriate spatial weight matrix must be selected. A spatial weight matrix is a non-negative $N \times N$ matrix with zeros on the diagonal, as no region can be a neighbor to itself. It consists of two parts: i) neighborhood structures, which identify the neighbors of regions, and ii) spatial weights, quantifying the influence of these neighbors (Elhorst, 2014; Sutton & Sutton, 2024). Spatial weights matrices typically employed in applied research include: i) p-order binary contiguity matrices, where only immediate neighbors are included for p = 1, both first and second-order neighbors are included for p = 2, etc.; ii) inverse distance matrices, which may be configured with or without a threshold distance; iii) *k*-nearest neighbor matrices (*knn*), where k is a defined positive integer; and iv) block diagonal matrices, where each block consists of spatial units that interact internally but not with units outside the group (Elhorst, 2014).

The determination of the spatial weights matrix is a debated topic in the literature, with its appropriate selection still an open question and often assumed to be arbitrary at the outset of spatial analysis (Anselin, 2002; Kubara & Kopczewska, 2024). Sutton and Sutton (2024) highlight LeSage's (2014b) argument that much of the controversy originates from the incorrect belief that minor adjustments in the weight matrix specification result in major changes in spatial regression model outcomes. Furthermore, LeSage recommends using sparse connectivity structures such as *knn* or contiguous spatial weights matrices. Although the contiguity weight matrix is the most commonly used, where neighbors are those directly touching, it can lead to isolated regions or "islands." Rüttenauer (2024) observes that these islands create issues in the estimation process. If there are only a few such regions, they can be excluded. Alternatively, distance or *knn* weight matrices may be used to ensure all regions have neighbors. Given that 29 regions in this thesis's sample are island regions with valuable information, the *knn* weight matrix was chosen.

More precisely, weight matrix where *knn* = 1 is selected, meaning that only the nearest neighbor is taken into account. This selection is based on the theoretical underpinning of investigating spatial dependencies of regional economic resilience and its determinants from the perspective of local spillovers (Sutton & Sutton, 2024). LeSage and Pace (2021) state that local spillovers occur when impacts are confined to immediate neighbors. Rüttenauer (2024) clarifies that higher-order neighbors are excluded unless higher-order processes are explicitly specified.

Therefore, a *knn* weight matrix that accounts only for the immediate neighbor of each region is chosen. In this spatial-weighting matrix, the nearest neighbor of each spatial unit is weighted by their inverse distances, while all other units receive zero weights (Drukker et al., 2013). Given the selection of a small number of neighbors (*knn* = 1), the selection of such a weight matrix should not alter the results. As Kubara and Kopczewska (2024) indicate, the number of nearest neighbors in *W* affects model estimates and quality, but this impact is minimal when fine-tuning *W* with a few *knn*. In other words, only significant changes in *W* affect the direct and indirect effects, while small adjustments do not (Elhorst, 2018; LeSage & Pace, 2014). To ensure robustness, Appendix 1 includes results for the spatial regression

Despite the significant lack of spatial regression models in the research on regional economic resilience, as noted by Sutton and Sutton (2024), there has recently been a noticeable trend towards their increased use in studies (Annoni et al., 2019; Dubé & Polèse, 2016b; Ezcurra & Rios, 2019; Giannakis, Bruggeman, et al., 2024; Giannakis, Tsiotas, et al., 2024; Pontarollo & Serpieri, 2020).

Spatial heterogeneity

In addition to spatial dependencies, another fundamental aspect of spatial econometrics is spatial heterogeneity (Anselin, 1989). Loosely defined, spatial heterogeneity refers to the tendency for different areas of the Earth's surface to differ from one another (Goodchild & Longley, 2021). In the context of spatial statistics and data, Haining and Li (2021) explain that when all spatial subsets of a database exhibit the same statistical properties, the data are said to display spatial homogeneity with respect to that property. When this condition is not met, the data exhibit spatial heterogeneity. Le Gallo (2021) argues that in the context of spatial regression models, spatial heterogeneity pertains to structural relations that vary over space, and addressing spatial heterogeneity does not necessarily require specific econometric tools.

As Piras and Sarrias (2023) highlight, there are several practical methods for addressing unobserved heterogeneity, including spatial heteroscedasticity control (Kyriacou et al., 2023), spatial regimes models (Anselin & Amaral, 2023; Vidoli et al., 2022), geographically weighted regressions (Wheeler, 2021), and hierarchical (or multilevel) models (Arcaya et al., 2012). Anselin and Amaral (2023) note that while the estimation of spatial regime regressions is well understood, the identification of the regimes continues to be of interest. There are three primary approaches: i) exogenous regimes, defined a priori such as administrative regions; ii) data-driven regimes, resulting from clustering; and iii) endogenous regimes, where coefficients and regime allocation are jointly estimated.

In this thesis, spatial clusters are created through two approaches: i) exogenous clusters, defined a priori by Eurostat's territorial typologies (2019); and ii) endogenous spatial regimes. The process of forming exogenous regimes is outlined in the subsection discussing criteria for subsample classification. Regarding endogenous spatial regimes, the methodology provided by Vidoli et al. (2022) is employed. This approach involves the endogenous determination of homogeneous spatial regimes using a spatially constrained, non-overlapping cluster-wise regression algorithm, which identifies geographically connected areas that are homogeneous in functional terms. Essentially, this involves grouping regions with analogous attributes into clusters. These clusters are formed by aggregating neighboring units that function similarly or exhibit a consistent relationship between the dependent and independent variables.

Within this context, the focus is on the relationship between economic resilience indicators and cultural tourism indicator, estimated using OLS. This approach favors a more parsimonious model over a complex one, particularly when dividing geographical space into various regimes. The identification of homogeneous areas and regression estimation are carried out in a single stage to ensure maximum functional homogeneity within local areas. The SkaterF function is applied, allowing for the estimation of territorially defined areas where production units are functionally homogeneous, thus defining spatial regimes distinct from others (Vidoli & Benedetti, 2022). The Spatial Regimes web app (Vidoli, 2024) was used for the implementation (Vidoli & Benedetti, 2024).

4.6. Model Specifications Overview

Finally, the model specifications can be outlined as follows, beginning with the baseline OLS model:

$$RES_i = \beta_0 + \beta_1 CUL_i + CD_i \gamma + \varepsilon_i \quad \textbf{(18)}$$

Then, the augmented OLS model is defined:

$$RES_i = \beta_0 + \beta_1 CUL_i + \beta_2 TOUR_i + \beta_3 GDP_i + \beta_4 EQI_i + \beta_5 HHI_i + \beta_6 TP_i + \beta_7 SI_i + CD_i \gamma + \varepsilon_i \quad \textbf{(19)}$$

The initial variant of the SDEM model is specified:

$$RES_i = \beta_0 + \beta_1 CUL_i + CD_i \gamma + \theta_1 \sum_{j=1, j \neq i}^{n} w_{ij}\, CUL_j + u_i,\ u_i = \lambda \sum_{j=1, j \neq i}^{n} w_{ij}\, \varepsilon_j + \varepsilon_i \quad \textbf{(20)}$$

Ultimately, the SDEM model specification including the cultural tourism indicator and all control variables can be presented as:

$$RES_i = \beta_0 + \beta_1 CUL_i + \beta_2 TOUR_i + \beta_3 GDP_i + \beta_4 EQI_i + \beta_5 HHI_i + \beta_6 TP_i + \beta_7 SI_i + CD_i \gamma + \theta_1 \sum_{j=1, j \neq i}^{n} w_{ij}\, CUL_j + \theta_2 \sum_{j=1, j \neq i}^{n} w_{ij}\, TOUR_j + \theta_3 \sum_{j=1, j \neq i}^{n} w_{ij}\, GDP_j + \theta_4 \sum_{j=1, j \neq i}^{n} w_{ij}\, EQI_j + \theta_5 \sum_{j=1, j \neq i}^{n} w_{ij}\, HHI_j + \theta_6 \sum_{j=1, j \neq i}^{n} w_{ij}\, TP_j + \theta_7 \sum_{j=1, j \neq i}^{n} w_{ij}\, SI_j + u_i,\ u_i = \lambda \sum_{j=1, j \neq i}^{n} w_{ij}\, u_j + \varepsilon_i \quad \textbf{(21)}$$

Where:

- RES_i is the regional economic resilience of region i.
- β_0 is the intercept term.
- $\beta_1, \beta_2, \dots, \beta_7$ are the coefficients for the independent and control variables.
- CUL_i is the cultural tourism indicator ($WHS, ICH, MON, NIC, MUS, BUS$), for region i.
- $TOUR_i$ is the tourism demand (tourist overnights per 1,000 m^2) for region i.
- GDP_i is the GDP per capita (in PPS, EU=100) for region i.
- EQI_i is the European quality of government index (NUTS 2) for region i.
- HHI_i is the Herfindahl-Hirschman index for sectoral diversity in region i.
- TP_i is the transport performance for region i.
- SI_i is the COVID policy stringency index (national) for region i.
- CD_i is the *(1 × K)* vector of country dummies, where each element is a dummy variable representing a country (with one dummy omitted as the reference category), for region i.
- γ is the *(K × 1)* vector of coefficients for country dummy variables.
- $\sum_{j=1,j\neq i}^{n} w_{ij}\, CUL_j, \sum_{j=1,j\neq i}^{n} w_{ij}\, TOUR_j, \dots, \sum_{j=1,j\neq i}^{n} w_{ij}\, SI_j$ are the spatially lagged independent variables, where w_{ij} represents the *ij*-th element of the W weights matrix.
- The weights matrix W is a 378×378 spatial weights matrix in which the nearest neighbor (or the two or three nearest neighbors) of each spatial unit is weighted by their inverse distances, and all others receive zero weights.
- $\theta_1, \theta_2, \dots, \theta_7$ are the coefficients for the spatially lagged independent variables.
- λ is the coefficient for the spatially lagged error term.
- u_i is spatially lagged error term.
- $\sum_{j=1,j\neq i}^{n} w_{ij}\, u_j$ is the spatially autocorrelated component of the error term.
- ε_i is the error term for region i.

5. EMPIRICAL ANALYSIS

The empirical analysis includes non-spatial (OLS) and spatial (SDEM) regression estimates across different model specifications. The dependent variable variants include economic resistance and economic recovery for 2021 and 2022. A baseline model with only the cultural tourism indicator is first run, followed by an augmented model with additional controls. OLS and SDEM estimations are conducted for the full sample of 378 regions under study. To capture spatial heterogeneity, regression analysis is also performed on predefined and newly estimated spatial regimes. Standard errors are provided in parentheses for all models, with significance levels indicated as follows: * p < 0.1, ** p < 0.05, *** p < 0.01. Stata 18.5 was used for all model estimates, and the Spatial Regimes app was used for identifying spatial regimes.

Prior to model estimation, it is necessary to ensure that there is no multicollinearity among the independent variables. For this purpose, a pairwise correlation matrix is generated among the regressors to detect possible multicollinearity issues (Gujarati & Porter, 2009).

Table 10. Correlation Matrix

Variable	WHS	ICH	MON	NIC	MUS	BUS	TOUR
WHS	1.0000						
ICH	0.1453*	1.0000					
MON	0.3500*	0.2587*	1.0000				
NIC	0.0807	0.7359*	0.4209*	1.0000			
MUS	0.1751*	0.0430	0.3426*	0.0022	1.0000		
BUS	-0.1183*	-0.0311	-0.1483*	-0.0361	-0.3251*	1.0000	
TOUR	-0.0022	-0.0331	-0.0032	-0.0259	-0.0461	0.5929*	1.0000
GDP	-0.1012*	-0.2165*	-0.1245*	-0.2314*	0.0899	0.4999*	0.5280*
EQI	-0.0504	-0.0321	-0.1949*	-0.1143*	-0.3025*	0.5805*	0.0616
HHI	0.0467	0.1570*	0.1991*	0.1256*	-0.1141*	0.1280*	0.2756*
TP	-0.1539*	-0.4093*	-0.1335*	-0.2969*	-0.0884	0.1923*	0.0890
SI20	-0.1088*	-0.1663*	-0.0814	-0.3071*	0.4975*	-0.2895*	-0.0333
SI21	0.0746	0.0405	0.2223*	-0.0347	0.2562*	-0.4768*	-0.0317
SI22	0.0795	0.0932	0.1938*	-0.0408	0.2415*	-0.5127*	-0.0226
Variable	**GDP**	**EQI**	**HHI**	**TP**	**SI20**	**SI21**	**SI22**
GDP	1.0000						
EQI	0.3385*	1.0000					
HHI	0.2097*	-0.1849*	1.0000				
TP	0.3480*	0.1040*	-0.1087*	1.0000			
SI20	0.2339*	-0.3091*	-0.0160	0.1763*	1.0000		
SI21	-0.0898	-0.5369*	0.2409*	-0.0383	0.6073*	1.0000	
SI22	-0.0854	-0.6373*	0.2301*	-0.0655	0.5581*	0.8817*	1.0000

* p < 0.05

According to Gujarati and Porter (2009), multicollinearity is a serious concern when the pairwise correlation coefficient between two regressors exceeds 0.8. Some authors, such as Dormann et al. (2013) and Duda (2022), recommend avoiding predictor variables that exhibit correlations of 0.7 or higher in regression analysis as a rule of thumb. In research on regional economic resilience using SDEM, Giannakis, Bruggeman et al. (2024) applied a threshold of 0.65 for correlation coefficients among explanatory variables. As shown in Table 10, multicollinearity should not be problematic, as no pairwise correlation coefficients exceed 0.65, with the exception of two cases (*NIC* and *ICH*, and *SI21* and *SI22*), but these variables are included in different model specifications.

Finally, before starting model estimations, it is essential to consider the criteria for the quality assessment of the models. In OLS regression, the coefficient of determination, known as R^2, is typically used. This metric measures the proportion of the variation in the dependent variable that can be explained by the independent variables. The R^2 value ranges from 0 to 1, and generally, an econometric model is considered to have higher predictive power if the R^2 is closer to 1 (Gujarati & Porter, 2009). In the context of social sciences, Ozili (2023) suggests that an R^2 value as low as 0.10 can be considered acceptable in social science empirical modeling, as long as some or most of the explanatory variables are statistically significant. According to some authors (Hair et al., 2011; Sarstedt & Mooi, 2019), R^2 values of 0.75, 0.50, and 0.25 can be roughly interpreted as substantial, moderate, and weak, respectively, as a rule of thumb. While OLS relies on R^2 as the dominant measure of model fit, more general linear models do not have a singular dominant measure (T. E. Smith, 2014). As Kopczewska (2020) points out, the quality assessment of spatial models is guided by slightly different criteria than other econometric models. With maximum likelihood estimators (MLE) or generalized least squares (GLS), a pseudo-R^2 can be calculated, but it is less commonly used compared to other measures. More commonly, the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and log-likelihood criterion (LogLik) are used. The preferred model is the one with the lowest AIC and/or BIC values, even if they are negative. Conversely, when assessing log LogLik, the model with the highest value is favored. Typically, the model with the highest LogLik or the lowest information criterion (AIC) is chosen. For pseudo-R^2, as with traditional R^2, the model with the highest value is preferred. These criteria allow for the comparison of models with the same dependent variable and sample size.

As observed by Hession and Moore (2011), pseudo- R^2 cannot be interpreted similarly to OLS R^2 and is not directly comparable. They suggest that AIC values are more appropriate for comparing OLS and spatial regression models. In the context of spatial regression, Kopczewska and Elhorst (2024) highlight the benefits of AIC (Akaike, 1998), noting its preference due to the penalty for the number of parameters, which eliminates the need to consider differences in degrees of freedom across models. Also, AIC is a widely used metric available in most econometric software and is applicable across numerous empirical applications. Therefore, AIC serves as the initial metric for evaluating model performance in this thesis.

5.1. Results of Testing Hypotheses One (H1) and Two (H2)

5.1.1. OLS Estimation Results

Initially, baseline OLS estimation results are presented with regional economic resilience as the dependent variable, specifically focusing on the resistance phase (Table 11) and the recovery phases for 2021 (Table 12) and 2022 (Table 13). Each cultural tourism indicator is included as an independent variable in separate model specifications. To mitigate potential issues of heteroscedasticity, robust standard errors are employed (Verardi & Croux, 2009). Moran's I test is conducted to determine whether the residuals of an OLS model estimation are correlated with nearby residuals. The null hypothesis posits that the residuals are independent and identically distributed, indicating no spatial autocorrelation, while the alternative hypothesis suggests that the residuals are correlated with nearby residuals as defined by *W* (*knn* = 1).

Table 11. Resistance Phase: Baseline OLS Model Estimates

	(1a1.1)	(1a1.2)	(1a1.3)	(1a1.4)	(1a1.5)	(1a1.6)
WHS	-0.380					
	(0.306)					
ICH		-0.0394^{*}				
		(0.0211)				
MON			-0.00186^{***}			
			(0.000425)			
NIC				-0.0116^{*}		
				(0.00615)		
MUS					-0.0171	
					(0.0133)	
BUS						-0.0450^{***}
						(0.0161)
Cons	-0.0584	-0.157^{***}	0.0986	-0.128^{***}	-0.157^{***}	-0.108^{***}
	(0.105)	(0.0169)	(0.0656)	(0.0323)	(0.0242)	(0.0288)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
R^2	0.369	0.372	0.397	0.371	0.366	0.324
AIC	1154.237	1152.597	1137.06	1153.467	1156.341	1018.452
Moran's I test	7.51^{***}	6.97^{***}	6.05^{**}	6.25^{**}	6.72^{***}	7.64^{*}

In Table 11, the basic OLS model estimates for the resistance phase of regional economic resilience are presented. *WHS* and *MUS* have a negative sign but are not significant, indicating no notable impact on economic resistance. Both intangible cultural heritage indicators, ICH and NIC, demonstrate marginal significance at the 10% level and negatively affect economic resistance. Finally, *MON* and *BUS* are highly significant at the 1% level and also have a negative impact. R^2 values indicate moderate explanatory power, ranging from 0.324 to 0.397. The results of the Moran's I test demonstrate significant spatial autocorrelation for all models, with special attention needed for the last model (1a1.6), which is significant at the 10% level.

Table 12. Recovery Phase (2021): Baseline OLS Model Estimates

	(1a2.1)	(1a2.2)	(1a2.3)	(1a2.4)	(1a2.5)	(1a2.6)
WHS	0.148**					
	(0.0708)					
ICH		0.0114**				
		(0.00562)				
MON			0.000597***			
			(0.000139)			
NIC				0.00344**		
				(0.00173)		
MUS					0.00541	
					(0.00342)	
BUS						0.0202***
						(0.00585)
Cons	0.0872***	0.129***	0.0457**	0.120***	0.128***	0.102***
	(0.0242)	(0.00449)	(0.0214)	(0.00911)	(0.00625)	(0.0104)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
R^2	0.463	0.461	0.493	0.460	0.456	0.546
AIC	168.3517	169.8286	146.6982	170.5281	173.7125	89.73428
Moran's I test	11.92***	11.74***	9.54***	10.51***	13.43***	7.68***

Table 13. Recovery Phase (2022): Baseline OLS Model Estimates

	(1a3.1)	(1a3.2)	(1a3.3)	(1a3.4)	(1a3.5)	(1a3.6)
WHS	0.0708**					
	(0.0338)					
ICH		0.00554**				
		(0.00271)				
MON			0.000287***			
			(0.0000662)			
NIC				0.00167**		
				(0.000834)		
MUS					0.00263	
					(0.00163)	
BUS						0.00920***
						(0.00269)
Cons	0.128***	0.148***	0.108***	0.144***	0.148***	0.136***
	(0.0116)	(0.00217)	(0.0102)	(0.00438)	(0.00299)	(0.00480)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
R^2	0.808	0.808	0.820	0.807	0.806	0.839
AIC	-408.3634	-406.9806	-431.5488	-406.189	-402.7645	-461.3622
Moran's I test	12.58***	12.32***	9.93***	11.01***	14.21***	8.11***

The basic OLS model estimates for the recovery phase in 2021 are shown in Table 12. *WHS*, *ICH*, *MON*, *NIC*, and *BUS* are all statistically significant at least at the 5% level, indicating positive contributions to economic recovery. *MUS*, despite having a positive sign, is not significant. The R^2 values, which range from 0.456 to 0.546, are mostly moderate. The Moran's I test indicates strong spatial autocorrelation across all models, with all being statistically significant at the 1% level. The same conclusions apply to the OLS model estimates for the recovery phase in 2022, as detailed in Table 13. The notable difference is that the R^2 values are very high, all above 0.8, ranging from 0.806 to 0.839, suggesting substantial explanatory power.

The empirical analysis proceeds with testing OLS estimates for augmented regional economic resilience models, incorporating both cultural tourism and control variables as independent variables. The results of the estimations are presented for the resistance phase of regional economic resilience (Table 14) and the recovery phases for 2021 (Table 15) and 2022 (Table 16). Again, to prevent potential heteroscedasticity problems, robust standard errors are used (Verardi & Croux, 2009).

Table 14. Resistance Phase: OLS Model Estimates Including Control Variables

	(1b1.1)	(1b1.2)	(1b1.3)	(1b1.4)	(1b1.5)	(1b1.6)	(1b1.7)
TOUR	-0.0000666	0.0000393	0.000185	0.000159	0.000345	-0.000395	0.000728
	(0.00376)	(0.00374)	(0.00383)	(0.00376)	(0.00383)	(0.00378)	(0.00518)
GDP	-0.00263	-0.00278	-0.00335	-0.00336	-0.00334	-0.00175	-0.00736
	(0.00428)	(0.00426)	(0.00447)	(0.00411)	(0.00447)	(0.00419)	(0.00489)
EQI	-0.0280	0.000246	0.00873	0.103	-0.00108	-0.0168	0.0318
	(0.133)	(0.134)	(0.139)	(0.132)	(0.136)	(0.131)	(0.148)
HHI	-16.02***	-15.98***	-15.53***	-15.08***	-15.68***	-16.72***	-10.34**
	(4.954)	(4.917)	(4.982)	(4.885)	(4.940)	(5.034)	(5.034)
TP	0.00116	0.000666	-0.000442	-0.00114	-0.000251	-0.000720	0.000318
	(0.00303)	(0.00308)	(0.00335)	(0.00313)	(0.00325)	(0.00340)	(0.00281)
SI	-0.0702***	-0.0747***	-0.0618***	-0.0508***	-0.0660***	-0.0444**	-0.0563***
	(0.0173)	(0.0175)	(0.0193)	(0.0183)	(0.0177)	(0.0210)	(0.0176)
WHS		-0.378					
		(0.241)					
ICH			-0.0319				
			(0.0230)				
MON				-0.00168***			
				(0.000487)			
NIC					-0.0101		
					(0.00634)		
MUS						-0.0283**	
						(0.0130)	
BUS							0.0154
							(0.0402)
Cons	7.679***	8.075***	7.287***	6.862***	7.566***	6.548***	5.994***
	(1.715)	(1.745)	(1.782)	(1.730)	(1.710)	(1.688)	(1.715)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
R^2	0.487	0.493	0.492	0.513	0.492	0.493	0.403
AIC	1084.185	1081.783	1082.609	1068.924	1082.557	1081.615	983.4029
Moran's I test	7.76***	6.88***	7.55***	4.73**	6.95***	6.47**	7.55***

The results of the model estimates shown in Table 14 evaluate the impact of cultural tourism indicators on economic resistance, including other control variables. *WHS*, *ICH* and *NIC* are negatively linked to economic resistance but are not statistically significant. Conversely, *MON* and *MUS* show significant negative impacts on regional economic resilience during the resistance phase. The *BUS* variable is positive yet non-significant. Among the control variables, *HHI* and *SI* display highly significant impacts on resilience, frequently at the 1% level, reflecting a negative relationship. *GDP* shows a negative but non-significant effect on economic resistance. Variables such as *TOUR*, *GDP* and *TP* have mixed signs across models, but none achieve statistical significance. The model's R^2 values, ranging from 0.403 to 0.513, indicate moderate explanatory power. The Moran’s I test reveals significant spatial correlation among the residuals in all models.

Table 15. Recovery Phase (2021): OLS Model Estimates Including Control Variables

	(1b2.1)	(1b2.2)	(1b2.3)	(1b2.4)	(1b2.5)	(1b2.6)	(1b2.7)
TOUR	0.00179**	0.00175**	0.00171**	0.00171**	0.00166**	0.00188***	-0.00228
	(0.000698)	(0.000682)	(0.000710)	(0.000688)	(0.000709)	(0.000707)	(0.00167)
GDP	-0.00102	-0.000962	-0.000794	-0.000783	-0.000800	-0.00127	-0.000661
	(0.000970)	(0.000952)	(0.000985)	(0.000926)	(0.000991)	(0.000976)	(0.000938)
EQI	0.128***	0.118**	0.117**	0.0861*	0.120**	0.125***	0.115***
	(0.0470)	(0.0464)	(0.0463)	(0.0444)	(0.0464)	(0.0459)	(0.0444)
HHI	3.396***	3.380***	3.244***	3.092***	3.291***	3.597***	2.503***
	(0.835)	(0.802)	(0.831)	(0.762)	(0.824)	(0.844)	(0.801)
TP	0.0000313	0.000210	0.000521	0.000768	0.000461	0.000576	0.0000487
	(0.000870)	(0.000877)	(0.000922)	(0.000858)	(0.000922)	(0.000948)	(0.000763)
SI	-0.0391***	-0.0395***	-0.0375***	-0.0355***	-0.0369***	-0.0371***	-0.0358***
	(0.00472)	(0.00439)	(0.00474)	(0.00457)	(0.00493)	(0.00461)	(0.00487)
WHS		0.138**					
		(0.0681)					
ICH			0.00980*				
			(0.00552)				
MON				0.000540***			
				(0.000135)			
NIC					0.00309*		
					(0.00181)		
MUS						0.00822**	
						(0.00346)	
BUS							0.0309**
							(0.0132)
Cons	1.719***	1.683***	1.604***	1.435***	1.555***	1.531***	1.662***
	(0.299)	(0.283)	(0.301)	(0.296)	(0.317)	(0.313)	(0.267)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
R^2	0.518	0.527	0.523	0.548	0.523	0.524	0.577
AIC	135.9762	130.7114	133.8392	113.4403	133.8139	133.2299	74.11295
Moran’s I test	16.89***	14.53***	15.99***	11.67***	14.67***	17.28***	9.37***

In the 2021 recovery phase model (Table 15), *WHS* positively and significantly affects recovery at the 5% level, a conclusion that also applies to the *MUS* and *BUS* variables. Both intangible cultural heritage indicators, *ICH* and *NIC*, are positive and significant at the 10% level. *MON* shows a significant positive impact on recovery at the 1% level. *TOUR* exhibits a statistically positive influence in five out of six models, though it is non-significant in one model. Among the control variables, *EQI* and *HHI* significantly positively impact recovery. *SI* is negative and significant in all model specifications. *GDP* is negative but non-significant in all models, while *TP* varies in sign and is non-significant in all models. The R^2 values, ranging from 0.518 to 0.577, indicate moderate explanatory power. The Moran's I test indicates significant spatial correlation among the residuals in all models at the 1% level.

Table 16. Recovery Phase (2022): OLS Model Estimates Including Control Variables

	(1b3.1)	(1b3.2)	(1b33)	(1b3.4)	(1b3.5)	(1b3.6)	(1b3.7)
TOUR	0.000803**	0.000784**	0.000766**	0.000768**	0.000743**	0.000849**	-0.00104
	(0.000325)	(0.000316)	(0.000330)	(0.000319)	(0.000330)	(0.000328)	(0.000757)
GDP	-0.000482	-0.000456	-0.000376	-0.000370	-0.000379	-0.000605	-0.000290
	(0.000450)	(0.000442)	(0.000458)	(0.000429)	(0.000460)	(0.000453)	(0.000439)
EQI	0.0597***	0.0547**	0.0543**	0.0395*	0.0558***	0.0581***	0.0529**
	(0.0217)	(0.0214)	(0.0214)	(0.0204)	(0.0214)	(0.0211)	(0.0205)
HHI	1.629***	1.622***	1.557***	1.483***	1.579***	1.726***	1.211***
	(0.397)	(0.381)	(0.395)	(0.361)	(0.391)	(0.402)	(0.380)
TP	-0.0000114	0.0000742	0.000223	0.000343	0.000194	0.000250	-0.0000047
	(0.000408)	(0.000411)	(0.000431)	(0.000400)	(0.000432)	(0.000443)	(0.000354)
SI	-0.0650***	-0.0654***	-0.0630***	-0.0607***	-0.0624***	-0.0626***	-0.0613***
	(0.00549)	(0.00509)	(0.00551)	(0.00531)	(0.00574)	(0.00535)	(0.00565)
WHS		0.0662**					
		(0.0325)					
ICH			0.00469*				
			(0.00265)				
MON				0.000260***			
				(0.0000638)			
NIC					0.00148*		
					(0.000868)		
MUS						0.00394**	
						(0.00163)	
BUS							0.0139**
							(0.00602)
Cons	1.368***	1.350***	1.313***	1.231***	1.290***	1.278***	1.343***
	(0.141)	(0.134)	(0.142)	(0.140)	(0.150)	(0.148)	(0.125)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
R^2	0.828	0.832	0.830	0.840	0.830	0.831	0.851
AIC	-441.9394	-447.6344	-444.3125	-466.1702	-444.3227	-444.977	-478.3886
Moran's I test	18.34***	15.78***	17.37***	12.68***	15.93***	18.81***	9.89***

Regarding the 2022 recovery phase model, the results for the signs of both cultural tourism and control variable indicators are consistent with those observed in the 2021 recovery phase model. However, all the models demonstrate better explanatory power, with R^2 values ranging from 0.828 to 0.851. In all models, at the 1% level of significance, the Moran's I test confirms significant spatial correlation among the residuals.

5.1.2. SDEM Estimation Results

The results of Moran's I test for spatial correlation among residuals confirm the existence of spatial autocorrelation in 38 out of 39 model specifications at a significance level of 5% or below, and in one case at a 10% significance level. Thus, the appropriateness of the spatial model is confirmed. Hence, spatial regression is estimated, specifically using the spatial Durbin error model (SDEM), based on the theoretical underpinnings of local spillover effects in studying regional economic resilience (Sutton & Sutton, 2024) as discussed in subchapter 4.5.2.

Although the typical procedure after estimating the SDEM model involves using the likelihood-ratio (LR) test to determine if a nested, simpler model such as SLX or SEM is more appropriate (Burkey, 2018), this step is skipped in this thesis for two main reasons. Firstly, LeSage (2014b, p. 19) claim that "if one can narrow down the relationship being investigated as reflecting a local spillover situation, then the SDEM model is the only model one needs to estimate." Secondly, following 39 OLS regression model estimations, repeating the process for SDEM adds another 39 estimations. Estimating SEM and SLX models would be impractical, leading to redundancy with an additional 78 estimations, and there are further model estimations in subsamples to test spatial heterogeneity in the relationship between regional economic resilience and cultural tourism. For these reasons, SDEM model specifications are the only ones used in the spatial regression analysis conducted in this thesis.

As elaborated by LeSage and Pace (2021), since the work of Ord (1975), maximum likelihood estimation (MLE) has become the standard approach for estimating spatial econometric models. As explained by Ren and Wang (2023), MLE is a statistical method used to estimate the parameters of a probability distribution by maximizing a likelihood function. The value in the parameter space that achieves the highest likelihood is referred to as the maximum likelihood estimate.

In order to evaluate the validity of the SDEM model specifications, Wald (1943) tests are used. As defined by Hayashi et al.(2011), the Wald test is a multivariate approach that permits the simultaneous testing of a set of parameters to determine if they are collectively insignificant and can be eliminated. In other words, it assesses whether a set of independent variables are collectively significant for a model. The Wald test statistic for overall model fit and the Wald test for spatial terms to check if the error term and spatially lagged explanatory variables are jointly equal to zero (Wald $\lambda = \theta = 0$), are applied. Accordingly, as defined in equation (20), the baseline SDEM model specifications of regional economic resilience and cultural tourism indicators are estimated using MLE. Estimations are conducted using robust standard errors (L.-F. Lee, 2004). This process is first applied to the resistance phase of regional economic resilience (Table 17), and subsequently to the recovery phases in 2021 (Table 18) and 2022 (Table 19). The results of the robustness check for the SDEM baseline estimates, using different weights matrices (*knn* = 2 and *knn* = 3), are presented in Annex 1.

Table 17. Resistance Phase: Baseline SDEM Model Estimates

	(2a1.1)	(2a1.2)	(2a1.3)	(2a1.4)	(2a1.5)	(2a1.6)
WHS	-0.366*					
	(0.197)					
ICH		-0.0344**				
		(0.0172)				
MON			-0.00181***			
			(0.000405)			
NIC				-0.00926*		
				(0.00543)		
MUS					-0.00747	
					(0.0140)	
BUS						-0.0418**
						(0.0186)
Cons	-0.430	-0.382	-0.0499	-0.366	-0.429	-0.355
	(0.262)	(0.262)	(0.265)	(0.281)	(0.264)	(0.231)
W*WHS	-1.380					
	(9.700)					
W*ICH		-0.825				
		(0.957)				
W*MON			-0.0254*			
			(0.0149)			
W*NIC				-0.0116		
				(0.166)		
W*MUS					-0.890**	
					(0.397)	
W*BUS						-0.187*
						(0.112)
λ	3.894***	3.705***	3.271***	3.705***	4.115***	3.043**
	(0.922)	(0.968)	(1.031)	(0.966)	(0.887)	(1.329)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.3683	0.3734	0.4030	0.3696	0.3682	0.3252
AIC	1150.182	1148.415	1132.223	1150.732	1148.112	1018.66
Wald	206.58***	210.14***	238.18***	206.54***	208.98***	161.34***
Wald ($\lambda=\theta=0$)	17.87***	15.25***	12.47***	14.70***	25.60***	7.35**

The baseline SDEM model estimates for the role of cultural tourism indicators during the resistance phase of regional economic resilience are displayed in Table 17. The Wald tests confirm the SDEM specification's validity. Both the Wald test for overall model fit and the Wald test for spatial terms are highly significant across all models. *WHS* negatively affects economic resistance, significant at the 10% level. *ICH* shows a significant negative effect at the 5% level, and *MON* exhibits a highly significant negative impact at the 1% level. *NIC* has a negative effect significant at the 10% level, and *BUS* is negatively significant at the 5% level.

While the direct effect of *MUS* is negative but not significant, its indirect effects are significant and negative at the 5% level. Other indirect effects show marginal significance at 10%, such as *MON* and *BUS*, or no significance at all (*WHS*, *ICH*, *NIC*). Lambda (λ) is highly significant at the 1% level, indicating strong spatial dependence among the error terms.

Table 18. Recovery Phase (2021): Baseline SDEM Model Estimates

	(2a2.1)	(2a2.2)	(2a2.3)	(2a2.4)	(2a2.5)	(2a2.6)
WHS	0.132**					
	(0.0537)					
ICH		0.00953**				
		(0.00470)				
MON			0.000573***			
			(0.000110)			
NIC				0.00302**		
				(0.00147)		
MUS					0.00576	
					(0.00383)	
BUS						0.0267***
						(0.00678)
Cons	0.655***	0.652***	0.563***	0.601***	0.671***	0.642***
	(0.0713)	(0.0715)	(0.0725)	(0.0764)	(0.0721)	(0.0721)
W*WHS	1.241					
	(2.637)					
W*ICH		0.248				
		(0.261)				
W*MON			0.00438			
			(0.00403)			
W*NIC				0.0912**		
				(0.0449)		
W*MUS					-0.0492	
					(0.109)	
W*BUS						0.0860*
						(0.0516)
λ	3.871***	3.841***	3.629***	3.804***	3.997***	8.156***
	(0.900)	(0.923)	(0.948)	(0.930)	(0.881)	(0.575)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.4581	0.4577	0.4900	0.4606	0.4510	0.5209
AIC	165.3873	165.8746	144.569	164.0843	169.0645	92.00006
Wald	295.35***	294.71***	335.48***	298.18***	287.94***	355.61***
Wald ($\lambda=\theta=0$)	18.75***	18.13***	15.71***	20.75***	20.92***	204.53***

In Table 18, the estimates for the recovery phase in 2021 are provided. The validity of the SDEM specification is affirmed by the Wald tests. For direct effects, *WHS* is significant at the 5% level, suggesting a positive influence on economic recovery. *ICH* and *MON* are also positively significant at the 5% and 1% levels, respectively, while *NIC* shows positive significance at the 5% level. *BUS* is highly significant at the 1% level, indicating a robust positive effect. *MUS*, despite having a positive sign, is not significant. In terms of indirect effects, only *NIC* exhibits positive and statistically significant spillover effects at the 5% level. *BUS* shows statistically significant spillover effects at the 10% level, while the remaining indirect effects lack statistical significance. The lambda parameter (λ) is highly significant across all models, indicating positive and statistically significant spatial dependence.

Table 19. Recovery Phase (2022): Baseline SDEM Model Estimates

	(2a3.1)	(2a3.2)	(2a3.3)	(2a3.4)	(2a3.5)	(2a3.6)
WHS	0.0628**					
	(0.0252)					
ICH		0.00468**				
		(0.00220)				
MON			0.000276***			
			(0.0000515)			
NIC				0.00151**		
				(0.000690)		
MUS					0.00285	
					(0.00180)	
BUS						0.0124***
						(0.00318)
Cons	0.539***	0.537***	0.494***	0.511***	0.546***	0.532***
	(0.0335)	(0.0336)	(0.0340)	(0.0358)	(0.0339)	(0.0338)
W*WHS	0.604					
	(1.238)					
W*ICH		0.123				
		(0.122)				
W*MON			0.00218			
			(0.00189)			
W*NIC				0.0451**		
				(0.0210)		
W*MUS					-0.0228	
					(0.0510)	
W*BUS						0.0410*
						(0.0242)
λ	3.913***	3.872***	3.661***	3.831***	4.034***	8.161***
	(0.890)	(0.917)	(0.940)	(0.923)	(0.871)	(0.573)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.8040	0.8041	0.8163	0.8053	0.8014	0.8262
AIC	-406.3478	-406.2556	-428.5824	-408.3961	-402.7639	-453.1102
Wald	1380.61***	1382.03***	1499.40***	1393.86***	1358.75***	1441.31***
Wald (λ=θ=0)	19.58***	18.75***	16.36***	21.68***	21.75***	205.84***

For the recovery phase in 2022, as shown in Table 19, the positive influence of the direct impact of cultural tourism variables continues. *WHS*, *ICH*, *MON*, *NIC*, and *BUS* are all positively significant at least at the 5% level, while *MUS* remains non-significant. Among the spatially lagged variables, only *NIC* shows significance at the 5% level, highlighting positive spatial spillovers. The positive indirect effects of *BUS* are marginally significant at the 10% level. The remaining cultural tourism indicators do not exhibit statistically significant spillover effects. The lambda parameter (λ), significant at the 1% level, confirms the spatial autocorrelation of the error term. Next, the analysis extends to the augmented SDEM model specification, where economic resistance is the dependent variable, and alongside cultural tourism, other explanatory variables are incorporated (Table 20).

Table 20. Resistance Phase: SDEM Model Estimates Including Control Variables

	(2b1.1)	(2b1.2)	(2b1.3)	(2b1.4)	(2b1.5)	(2b1.6)	(2b1.7)
TOUR	-0.0114*	-0.0109*	-0.0117*	-0.00566	-0.0117*	-0.0125**	-0.00497
	(0.00635)	(0.00633)	(0.00633)	(0.00532)	(0.00632)	(0.00629)	(0.00709)
GDP	-0.00585*	-0.00588*	-0.00669**	-0.00542*	-0.00674**	-0.00460	-0.00931***
	(0.00314)	(0.00313)	(0.00317)	(0.00303)	(0.00317)	(0.00316)	(0.00323)
EQI	0.00752	0.0398	0.0321	0.0455	0.0284	0.00621	-0.0575
	(0.207)	(0.208)	(0.207)	(0.194)	(0.207)	(0.206)	(0.194)
HHI	-15.61***	-15.58***	-15.20***	-15.11***	-15.38***	-15.91***	-10.84***
	(1.996)	(1.989)	(2.007)	(1.970)	(1.997)	(2.003)	(2.061)
TP	-0.00808***	-0.00826***	-0.00905***	-0.00881***	-0.00865***	-0.00898***	-0.00509*
	(0.00276)	(0.00275)	(0.00286)	(0.00276)	(0.00284)	(0.00285)	(0.00280)
SI	0.130	0.125	0.126	0.0970	0.130	0.118	0.130
	(0.100)	(0.100)	(0.100)	(0.0992)	(0.100)	(0.0998)	(0.0955)
WHS		-0.295*					
		(0.174)					
ICH			-0.0249				
			(0.0163)				
MON				-0.00146***			
				(0.000373)			
NIC					-0.00600		
					(0.00508)		
MUS						-0.0161	
						(0.0132)	
BUS							0.0227
							(0.0360)
Cons	-2.175	-1.839	-1.944	-0.349	-2.098	-1.528	-3.294
	(4.472)	(4.462)	(4.466)	(4.411)	(4.486)	(4.467)	(4.254)
W*TOUR	-0.0775*	-0.0744*	-0.0806*	-0.0359	-0.0823*	-0.0833**	-0.114
	(0.0427)	(0.0425)	(0.0426)	(0.0352)	(0.0426)	(0.0422)	(0.134)
W*GDP	-0.0909	-0.0840	-0.0875	-0.0459	-0.0656	-0.0282	-0.109*
	(0.0561)	(0.0564)	(0.0576)	(0.0579)	(0.0616)	(0.0629)	(0.0653)
W*EQI	4.217	3.741	4.555	6.870	3.275	0.907	8.281
	(8.040)	(8.035)	(8.025)	(6.305)	(8.065)	(8.096)	(7.558)
W*HHI	-64.12	-74.30	-70.45	-57.92	-94.51	-135.5*	24.73
	(60.66)	(61.09)	(64.80)	(63.02)	(69.73)	(70.36)	(98.09)
W*TP	0.660***	0.654***	0.656***	0.592***	0.659***	0.542***	0.419***
	(0.146)	(0.146)	(0.152)	(0.143)	(0.146)	(0.156)	(0.153)
W*SI	-0.333	-0.311	-0.295	-0.335	-0.253	0.123	-0.418
	(0.286)	(0.286)	(0.287)	(0.275)	(0.294)	(0.372)	(0.378)
W*WHS		-6.246					
		(8.585)					
W*ICH			0.492				
			(0.937)				
W*MON				-0.0155			
				(0.0145)			
W*NIC					0.178		
					(0.163)		
W*MUS						-1.055**	
						(0.514)	
W*BUS							0.800
							(1.069)
λ	6.043***	6.040***	6.045***	3.717***	6.045***	6.015***	4.314***
	(0.377)	(0.370)	(0.376)	(1.019)	(0.375)	(0.359)	(1.283)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.4131	0.4190	0.4112	0.5283	0.4149	0.4356	0.4102
AIC	1073.423	1074.43	1074.755	1058.665	1074.033	1071.193	981.8801
Wald	374.91***	380.92***	380.23***	416.56***	381.67***	387.67***	251.64***
Wald ($\lambda=\theta=0$)	284.47***	293.28***	285.70***	35.71***	288.62***	312.56***	26.01***

In Table 20, the SDEM model estimates for the resistance phase of regional economic resilience as the dependent variable are presented, with cultural tourism indicators, tourism demand, and other control variables as explanatory variables.

The Wald tests confirm the validity of the SDEM specification in all models. The Wald test for overall model fit is highly significant at the 1% level. Additionally, the hypothesis that the spatial lag of the error term and the spatially lagged explanatory variables are jointly equal to zero ($\lambda = \theta = 0$) is rejected at the 1% significance level.

Among cultural tourism indicators, *WHS* has a marginally significant negative direct effect on economic resilience during the resistance phase at the 10% level, while *MON* shows a significant negative impact at the 1% level. *ICH*, *NIC*, and *MUS* have negative but non-significant effects, and *BUS*, although positive, is also non-significant. Only *MUS* shows positive and significant local spatial spillover effects on regional economic resistance at the 5% level.

TOUR has a negative sign in all model specifications, with significance at the 5% level in one model (2b1.6) and marginal significance at the 10% level in four additional models.

GDP has a consistent negative sign, with significant direct effects at the 5% level in three models and marginal significance at the 10% level in three others, while its indirect effects are non-significant. *HHI* shows significantly negative direct effects at the 1% level in all models but non-significant, mostly negative, spillover effects. *TP* is consistently significant at the 1% level in six models and at the 10% level in one, with negative direct effects. Its positive spatial spillover effects are consistently significant at the level of 1%. *EQI* and *SI* have positive but non-significant direct effects, and their spillover effects, which are positive for *EQI* but negative for *SI*, are also non-significant.

The spatial error parameter, lambda (λ), is positive and statistically significant, indicating the global diffusion of shocks through spatial dependence in the disturbances.

The robustness check findings for the SDEM augmented estimates with varying weight matrices (knn=2 and knn=3) for the resistance phase are validated in Table A 8 and Table A 11.

The analysis proceeds to the augmented SDEM model specifications for regional economic recovery phases, featuring cultural tourism and other control explanatory variables, as detailed in the subsequent tables (Table 21 and Table 22).

Table 21. Recovery Phase (2021): SDEM Model Estimates Including Control Variables

	(2b2.1)	(2b2.2)	(2b2.3)	(2b2.4)	(2b2.5)	(2b2.6)	(2b2.7)
TOUR	0.00617***	0.00600***	0.00486***	0.00480***	0.00475***	0.00506***	-0.0000374
	(0.00183)	(0.00182)	(0.00156)	(0.00152)	(0.00155)	(0.00158)	(0.00204)
GDP	-0.000264	-0.000250	-0.000171	-0.000391	-0.000269	-0.000718	-0.000555
	(0.000895)	(0.000889)	(0.000891)	(0.000863)	(0.000888)	(0.000894)	(0.000916)
EQI	0.142**	0.129**	0.142**	0.116**	0.150***	0.139**	0.133**
	(0.0594)	(0.0593)	(0.0566)	(0.0557)	(0.0564)	(0.0568)	(0.0555)
HHI	3.338***	3.329***	3.282***	3.102***	3.351***	3.608***	2.402***
	(0.570)	(0.566)	(0.569)	(0.561)	(0.565)	(0.573)	(0.591)
TP	0.00160**	0.00167**	0.00201**	0.00203***	0.00199**	0.00201**	0.000504
	(0.000787)	(0.000782)	(0.000817)	(0.000783)	(0.000811)	(0.000821)	(0.000793)
SI	-0.0457***	-0.0448***	-0.0439***	-0.0412***	-0.0423***	-0.0432***	-0.0421***
	(0.0150)	(0.0149)	(0.0150)	(0.0147)	(0.0150)	(0.0150)	(0.0142)
WHS		0.110**					
		(0.0496)					
ICH			0.00952**				
			(0.00467)				
MON				0.000464***			
				(0.000107)			
NIC					0.00308**		
					(0.00146)		
MUS						0.00795**	
						(0.00380)	
BUS							0.0355***
							(0.0102)
Cons	1.960***	1.858***	1.835***	1.663***	1.727***	1.753***	2.017***
	(0.654)	(0.652)	(0.652)	(0.642)	(0.654)	(0.657)	(0.621)
W*TOUR	0.0317**	0.0304**	0.0220**	0.0215**	0.0203**	0.0233**	0.0148
	(0.0124)	(0.0123)	(0.0103)	(0.0101)	(0.0103)	(0.0104)	(0.0358)
W*GDP	-0.00649	-0.00951	-0.00740	-0.0115	0.00228	-0.0164	-0.0146
	(0.0162)	(0.0162)	(0.0172)	(0.0165)	(0.0182)	(0.0180)	(0.0187)
W*EQI	-1.692	-1.473	-2.056	-1.818	-2.652	-1.157	0.127
	(2.318)	(2.308)	(1.970)	(1.893)	(1.988)	(1.984)	(2.191)
W*HHI	21.02	25.23	5.330	9.877	-7.256	16.32	-0.183
	(17.94)	(18.04)	(20.07)	(18.88)	(21.16)	(21.05)	(28.30)
W*TP	-0.0384	-0.0361	-0.0181	-0.0411	-0.0240	-0.0366	0.0131
	(0.0417)	(0.0415)	(0.0429)	(0.0399)	(0.0410)	(0.0418)	(0.0430)
W*SI	-0.106	-0.114	-0.0912	-0.0495	-0.0525	-0.0734	-0.0521
	(0.0820)	(0.0819)	(0.0796)	(0.0795)	(0.0786)	(0.0930)	(0.101)
W*WHS		2.794					
		(2.448)					
W*ICH			0.280				
			(0.271)				
W*MON				0.00458			
				(0.00416)			
W*NIC					0.0968**		
					(0.0477)		
W*MUS						0.0494	
						(0.128)	
W*BUS							0.0201
							(0.283)
λ	6.144***	6.137***	4.178***	3.975***	4.029***	4.291***	4.962***
	(0.348)	(0.343)	(0.813)	(0.862)	(0.848)	(0.774)	(1.049)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.4660	0.4751	0.5384	0.5595	0.5434	0.5359	0.5769
AIC	125.7579	124.4439	122.3232	108.213	120.5871	122.6321	75.78215
Wald	400.58***	411.65***	423.56***	455.72***	428.42***	422.10***	461.36***
Wald (λ=θ=0)	323.81***	332.51***	38.88***	31.36***	37.86***	41.17***	27.42***

Table 22. Recovery Phase (2022): SDEM Model Estimates Including Control Variables

	(2b3.1)	(2b3.2)	(2b3.3)	(2b3.4)	(2b3.5)	(2b3.6)	(2b3.7)
TOUR	0.00286***	0.00277***	0.00287***	0.00220***	0.00216***	0.00291***	-0.000569
	(0.000852)	(0.000846)	(0.000846)	(0.000706)	(0.000718)	(0.000848)	(0.000862)
GDP	-0.000103	-0.0000981	0.0000110	-0.000179	-0.000137	-0.000241	-0.000354
	(0.000418)	(0.000415)	(0.000421)	(0.000402)	(0.000415)	(0.000421)	(0.000416)
EQI	0.0669**	0.0608**	0.0626**	0.0530**	0.0676**	0.0617**	0.0731***
	(0.0279)	(0.0279)	(0.0278)	(0.0265)	(0.0266)	(0.0280)	(0.0255)
HHI	1.604***	1.599***	1.531***	1.497***	1.618***	1.693***	1.117***
	(0.265)	(0.263)	(0.266)	(0.260)	(0.263)	(0.267)	(0.274)
TP	0.000728**	0.000761**	0.000945**	0.000933**	0.000923**	0.000962**	0.000217
	(0.000366)	(0.000363)	(0.000378)	(0.000364)	(0.000378)	(0.000380)	(0.000363)
SI	-0.0727***	-0.0717***	-0.0710***	-0.0675***	-0.0688***	-0.0697***	-0.0713***
	(0.0170)	(0.0169)	(0.0170)	(0.0168)	(0.0171)	(0.0170)	(0.0160)
WHS		0.0527**					
		(0.0230)					
ICH			0.00445**				
			(0.00215)				
MON				0.000224***			
				(0.0000494)			
NIC					0.00147**		
					(0.000680)		
MUS						0.00384**	
						(0.00177)	
BUS							0.0172***
							(0.00473)
Cons	1.481***	1.435***	1.433***	1.342***	1.371***	1.379***	1.596***
	(0.303)	(0.302)	(0.302)	(0.297)	(0.303)	(0.304)	(0.287)
W*TOUR	0.0147**	0.0141**	0.0148***	0.00993**	0.00913*	0.0150***	0.0141
	(0.00574)	(0.00570)	(0.00570)	(0.00467)	(0.00476)	(0.00571)	(0.0185)
W*GDP	-0.00113	-0.00234	0.000790	-0.00461	0.00204	-0.00211	-0.00835
	(0.00734)	(0.00734)	(0.00754)	(0.00750)	(0.00836)	(0.00786)	(0.00780)
W*EQI	-0.955	-0.860	-1.081	-0.859	-1.129	-0.803	-0.352
	(1.151)	(1.146)	(1.144)	(0.956)	(0.978)	(1.147)	(1.098)
W*HHI	7.241	8.883	3.924	3.083	-6.079	7.100	3.831
	(7.414)	(7.424)	(8.096)	(7.801)	(9.353)	(8.094)	(11.05)
W*TP	-0.0207	-0.0200	-0.0138	-0.0211	-0.0145	-0.0202	0.0110
	(0.0186)	(0.0184)	(0.0192)	(0.0180)	(0.0184)	(0.0192)	(0.0200)
W*SI	-0.0957	-0.101	-0.110	-0.0342	-0.0172	-0.0821	-0.135
	(0.0743)	(0.0739)	(0.0742)	(0.0716)	(0.0765)	(0.0931)	(0.102)
W*WHS		1.231					
		(1.131)					
W*ICH			0.0730				
			(0.124)				
W*MON				0.00186			
				(0.00187)			
W*NIC					0.0454*		
					(0.0233)		
W*MUS						0.00887	
						(0.0653)	
W*BUS							-0.0779
							(0.150)
λ	6.151***	6.143***	6.126***	4.020***	3.976***	6.150***	9.473***
	(0.344)	(0.339)	(0.339)	(0.843)	(0.853)	(0.341)	(0.821)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.8029	0.8068	0.8049	0.8440	0.8383	0.8047	0.8490
AIC	-453.9544	-455.5303	-454.4519	-472.3685	-458.6828	-454.7861	-478.3938
Wald	1633.74***	1664.04***	1659.08***	1847.51***	1770.72***	1659.68***	1633.98***
Wald ($\lambda=\theta=0$)	330.78***	341.10***	338.92***	32.86***	37.30***	335.65***	139.98***

Table 21 details the SDEM model estimates for the short-term recovery phase of 2021, with regional economic resilience as the dependent variable. Cultural tourism, tourism demand, and other control variables are included as explanatory variables.

All cultural tourism indicators (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS*) show positive and significant direct effects at a significance level of at least 5%, suggesting that cultural tourism has a positive impact on economic recovery. While the indirect effects of cultural tourism indicators are generally positive but non-significant, *NIC* shows significant positive spillover effects at the 5% level, indicating positive spatial spillovers from nationally protected intangible cultural heritage.

TOUR consistently exhibits a significant positive direct effect at the 1% level in six out of seven models, with its indirect effects also being positive and significant at the 5% level.

Examining the direct impacts of other explanatory variables, only *GDP* is non-significant, though it is noteworthy that it has a negative sign. *EQI* is significant at the 5% level with a positive impact. *HHI* is highly significant at the 1% level, indicating a strong positive effect. *TP* exhibits statistical significance at the 5% level in six out of seven cases. Finally, *SI* is negative and statistically significant at the 1% level across all model specifications. Regarding indirect or spillover effects, none of these control variables exhibit statistical significance. Although not significant, *EQ*I, *TP*, and *SI* produce negative spillovers, while *GDP* and *HHI* show mixed results.

The spatial error parameter (λ) is positive and statistically significant, indicating spatial dependence in the disturbances.

Table 22 outlines the SDEM estimates for the 2022 short-term recovery phase, showing results almost identical to those of the 2021 recovery phase, with minor differences. Specifically, the positive indirect effects of *NIC* are marginally significant at the 10% level instead of 5%. Additionally, in one model, the positive indirect effects of *TOUR* are significant at the 10% level instead of 5%, while in the other five models, they remain significant at the 5% level. Hence, the conclusions for the 2022 recovery phase are consistent with those for 2021.

In Annex 1, the robustness check findings of SDEM augmented estimates for the recovery phases, using weight matrices (*knn* = 2 and *knn* = 3), are reported in Table A 9, Table A 10, Table A 12, and Table A 13. The only minor difference from the main results is the absence of the indirect spillover impact of tourism demand.

5.1.3. Conclusion on Research Hypothesis One (H1)

According to **H1**, cultural tourism affects regional economic resilience negatively during the resistance phase and positively during the recovery phase. The following table provides an overview of the impact of cultural tourism indicators (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS*) on short-term regional economic resilience during the resistance and recovery phases in 2021 and 2022. This summary includes all model specifications and their corresponding estimations (baseline and augmented OLS and SDEM). This examination takes into account only the direct effects of cultural tourism indicators, since the model estimation results lack sufficient evidence to confirm the influence of indirect (spillover) effects of cultural tourism on regional economic resilience.

As discussed in subchapters 3.3 and 4.1, cultural tourism is expected to have a negative impact on economic resilience during the resistance phase and a positive impact during the recovery phases. In the table, a "✓" denotes statistical significance in line with the expected sign. A dark blue color indicates significance at the 5% level or better, while a lighter blue color indicates marginal significance at the 10% level. Conversely, an "✗" signifies that the indicator was not statistically significant during hypothesis testing.

Table 23. Hypothesis One (H1) Conclusion Analysis

Model	WHS	ICH	MON	NIC	MUS	BUS
H1a: Resistance phase, expected sign (-)						
OLS, Baseline	✗	✓	✓	✓	✗	✓
OLS, Augmented	✗	✗	✓	✗	✓	✗
SDEM, Baseline	✓	✓	✓	✓	✗	✓
SDEM, Augmented	✓	✗	✓	✗	✗	✗
H1b: Recovery phase (2021), expected sign (+)						
OLS, Baseline	✓	✓	✓	✓	✗	✓
OLS, Augmented	✓	✓	✓	✓	✓	✓
SDEM, Baseline	✓	✓	✓	✓	✗	✓
SDEM, Augmented	✓	✓	✓	✓	✓	✓
H1b: Recovery phase (2022), expected sign (+)						
OLS, Baseline	✓	✓	✓	✓	✗	✓
OLS, Augmented	✓	✓	✓	✓	✓	✓
SDEM, Baseline	✓	✓	✓	✓	✗	✓
SDEM, Augmented	✓	✓	✓	✓	✓	✓

H1a analysis

The evidence provides only partial support for **H1a**. Overall, the results for all cultural tourism indicators align with the expected negative impact during the resistance phase, with the exception of the *BUS* indicator, which was positive, but non-significant in the augmented model variants.

MON consistently shows a negative impact at the 5% significance level, supporting the hypothesis that cultural tourism negatively affects economic resilience during the resistance phase. However, other indicators do not provide such consistent evidence. *ICH* is significant at the 5% level in the SDEM baseline model, and *MUS* is significant in the OLS augmented model, though it is worth noting that *MUS* shows statistically significant indirect effects in both SDEM model specifications at the 5% level. *BUS* is significant in the baseline variants, while WHS, *NIC*, and *ICH* show marginal significance at the 10% level in some models.

Overall, there is statistical significance at the 5% level in 8 out of 24 models (or 10 out of 24 if the strong indirect effects of *MUS* are considered). An additional 5 models demonstrate marginal significance, while all other models lack significance entirely, leaving the remaining models without robust statistical evidence of negative impacts of cultural tourism on regional economic resilience during the resistance phase.

While the overall evidence leans towards a negative impact of cultural tourism on economic resilience during the resistance phase, the extent and consistency of this impact vary across different indicators and model specifications. Therefore, it can be concluded that cultural tourism does have a tendency to negatively affect economic resilience during the resistance phase, but this impact is mixed and context dependent. **Finally, given the variability in the results and the lack of consistent, robust evidence across all indicators and models, the sub-hypothesis that cultural tourism negatively impacts economic resilience during the resistance phase of the regions under study (H1a) cannot be conclusively supported.**

H1b analysis

The results strongly support **H1b**. All cultural tourism indicators consistently show a statistically significant positive impact on economic resilience during the recovery phases in 2021 and 2022, with minor exceptions. Intangible cultural heritage indicators, specifically *ICH* and *NIC*, exhibit marginal significance in the OLS augmented model specifications, but they are statistically significant at the 5% level in all other models. *MUS* is another exception, being non-significant in the baseline model variants but becoming significant with the inclusion of additional controls.

Overall, there is significance in 22 out of 24 model variants for each phase, economic recovery in 2021 and economic recovery in 2022, totaling 44 out of 48 models with supportive statistical evidence. **Ultimately, this strong and consistent evidence supports sub-hypothesis H1b, which posits that cultural tourism positively impacts economic resilience during the recovery phase in the regions under study.**

H1 overall conclusion

After evaluating the two sub-hypotheses, a final verdict on the first research hypothesis, **H1**, is established. **Conclusively, H1, which posits that cultural tourism affects the economic resilience of the regions under study, is supported.**

The rationale for supporting H1 lies in the empirical findings from the analysis of cultural tourism indicators (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS*) across different phases of economic resilience (resistance and recovery). These findings offer a comprehensive understanding of the role of cultural tourism in regional economic resilience. It is important to note that the impact of cultural tourism is phase-specific, showing mixed statistical evidence with only partial indications of a negative influence during the resistance phase, which should be interpreted with caution. Nevertheless, the consistently positive impacts during the recovery phase indicate that the importance and role of cultural tourism in achieving economic resilience for regions cannot be overlooked.

5.1.4. Conclusion on Research Hypothesis Two (H2)

H2 posits that spatial dependencies influence the relationship between cultural tourism and regional economic resilience. To assess this hypothesis, three sets of evidence are analyzed: Moran's I test results (Table 24), Wald test of spatial terms (Table 25), and AIC comparison for different model specifications (Table 26).

Moran's I test examines the presence of spatial autocorrelation in the residuals of the OLS models. The Wald test assesses the joint significance of spatial lag terms and spatially lagged explanatory variables ($\lambda = \theta = 0$) in the SDEM models. AIC (Akaike Information Criterion) values are utilized to compare model fit, with lower AIC values indicating a superior fit.

Table 24. Moran's I Test Results Overview

Model	No CUL	WHS	ICH	MON	NIC	MUS	BUS
Resistance phase							
OLS, Baseline	-	7.51^{***}	6.97^{***}	6.05^{**}	6.25^{**}	6.72^{***}	7.64^{*}
OLS, Augmented	7.76^{***}	6.88^{***}	7.55^{***}	4.73^{**}	6.95^{***}	6.47^{**}	7.55^{***}
Recovery phase (2021)							
OLS, Baseline	-	11.92^{***}	11.74^{***}	9.54^{***}	10.51^{***}	13.43^{***}	7.68^{***}
OLS, Augmented	16.89^{***}	14.53^{***}	15.99^{***}	11.67^{***}	14.67^{***}	17.28^{***}	9.37^{***}
Recovery phase (2022)							
OLS, Baseline	-	12.58^{***}	12.32^{***}	9.93^{***}	11.01^{***}	14.21^{***}	8.11^{***}
OLS, Augmented	18.34^{***}	15.78^{***}	17.37^{***}	12.68^{***}	15.93^{***}	18.81^{***}	9.89^{***}

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The significant Moran's I values across all phases and models reveal spatial dependencies in the relationship between cultural tourism and economic resilience. All cultural tourism indicators have significant Moran's I values at the 1% level in both baseline and augmented models, indicating strong spatial autocorrelation. The only exception is the OLS baseline model with the cultural tourism indicator *BUS*, where Moran's I is significant at the 10% level. However, in the OLS augmented version, it reaches statistical significance at the 1% level. Sutton and Sutton (2024) explain that additional explanatory variables can capture spatial autocorrelation, thus, if the null hypothesis of Moran's I test is still rejected after introducing additional variables, a spatial model is necessary, as is the case with the *BUS* indicator.

Table 25. Summary of Wald Test Results for Spatial Terms

Model	No CUL	WHS	ICH	MON	NIC	MUS	BUS
Resistance phase							
SDEM, Baseline	-	17.87^{***}	15.25^{***}	12.47^{***}	14.70^{***}	25.60^{***}	7.35^{**}
SDEM, Augmented	284.47^{***}	293.28^{***}	285.70^{***}	35.71^{***}	288.62^{***}	312.56^{***}	26.01^{***}
Recovery phase (2021)							
SDEM, Baseline	-	18.75^{***}	18.13^{***}	15.71^{***}	20.75^{***}	20.92^{***}	204.53^{***}
SDEM, Augmented	323.81^{***}	332.51^{***}	38.88^{***}	31.36^{***}	37.86^{***}	41.17^{***}	27.42^{***}
Recovery phase (2022)							
SDEM, Baseline	-	19.58^{***}	18.75^{***}	16.36^{***}	21.68^{***}	21.75^{***}	205.84^{***}
SDEM, Augmented	330.78^{***}	341.10^{***}	338.92^{***}	32.86^{***}	37.30^{***}	335.65^{***}	139.98^{***}

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The significant Wald test results for spatial terms, consistently at the 1% level across all phases and cultural tourism indicators in both baseline and augmented models, indicate the joint significance of spatial lag terms and spatially lagged explanatory variables ($\lambda = \theta = 0$) in the

SDEM models. This confirms the validity of the SDEM model estimations and underscores the importance of spatial dependencies in understanding the relationship between cultural tourism and regional economic resilience.

Table 26. AIC Comparison for All Model Specifications

Model	No CUL	WHS	ICH	MON	NIC	MUS	BUS
Resistance phase							
OLS, Baseline	-	1154.237	1152.597	1137.06	1153.467	1156.341	1018.452
OLS, Augmented	1084.185	1081.783	1082.609	1068.924	1082.557	1081.615	983.4029
SDEM, Baseline	-	1150.182	1148.415	1132.223	1150.732	1148.112	1018.66
SDEM, Augmented	1073.423	1074.43	1074.755	1058.665	1074.033	1071.193	981.8801
Recovery phase (2021)							
OLS, Baseline	-	168.3517	169.8286	146.6982	170.5281	173.7125	89.73428
OLS, Augmented	135.9762	130.7114	133.8392	113.4403	133.8139	133.2299	74.11295
SDEM, Baseline	-	165.3873	165.8746	144.569	164.0843	169.0645	92.00006
SDEM, Augmented	125.7579	124.4439	122.3232	108.213	120.5871	122.6321	75.78215
Recovery phase (2022)							
OLS, Baseline	-	-408.3634	-406.9806	-431.5488	-406.189	-402.7645	-461.3622
OLS, Augmented	-441.9394	-447.6344	-444.3125	-466.1702	-444.3227	-444.977	-478.3886
SDEM, Baseline	-	-406.3478	-406.2556	-428.5824	-408.3961	-402.7639	-453.1102
SDEM, Augmented	-453.9544	-455.5303	-454.4519	-472.3685	-458.6828	-454.7861	-478.3938

When comparing baseline and augmented models, it is persistently observed that augmented models have lower AIC values than baseline models for both OLS and SDEM. This indicates a better model fit for the augmented models. AIC penalizes models with more parameters (independent variables) to prevent overfitting, thus, if a model with additional variables has a lower AIC, it implies that these variables enhance the model's fit sufficiently to justify their inclusion. Additionally, the consistently lower AIC values for SDEM models compared to OLS models suggest that accounting for spatial dependencies, despite adding complexity, provides a better fit. This underscores the importance of spatial dependencies in the analysis.

Another aspect of spatial analysis is the examination of local spatial spillovers of cultural tourism indicators on regional economic resilience. The SDEM model estimates confirmed that, in general, there are no statistically significant indirect (spillover) effects of cultural tourism indicators. Only direct effects on regional economic resilience are observed, primarily during the recovery phases.

The final verdict on hypothesis **H2**, asserting that the relationship between cultural tourism and regional economic resilience is influenced by spatial dependencies, is supported. Although the indirect spatial effects of cultural tourism on neighboring regions' resilience are not statistically significant, evidence from Moran's I test for spatial autocorrelation in the residuals, the Wald test for the significance of spatial terms, and AIC comparisons for better model fit confirm the presence of spatial dependencies. The coefficients' stability and significance across both OLS and SDEM models confirm the robustness of the nexus between cultural tourism and economic resilience. But, the improved model fit and corrected residuals in SDEM, indicate that accounting for spatial dependencies through SDEM provides a more accurate and reliable estimation of this relationship.

Thus, the rationale **to support H2 is the premise that accounting for spatial dependencies improves the understanding of the relationship between cultural heritage and regional economic resilience.**

5.2. Results of Hypothesis Three Testing

To assess spatial heterogeneity, the relationship between cultural tourism and regional economic resilience across all phases is examined for different subsamples. The initial test focuses on exogenous regimes, using groups predefined by Eurostat's territorial typologies (2019), such as coastal, mountain, urban, and rural regions, as detailed in subchapter 4.3.3. Estimates for these groups are obtained using OLS, while SDEM estimates are included in the Appendix (Tables A 14 to A 25).

Next, the methodology by Vidoli et al. (2022) is applied to define endogenous regimes by clustering regions with similar attributes. These clusters aggregate neighboring units that either function similarly or show a consistent relationship between the dependent variable and the independent variables, specifically economic resilience indicators and cultural tourism indicators, along with tourism demand, favoring a parsimonious model for this purpose. The identification of homogeneous areas and the OLS regression estimation are conducted in a single stage.

The thesis focuses on identifying heterogeneity among cultural tourism indicators rather than deeply analyzing implications for several groups based on subsamples. Thus, the results for each subsample are briefly discussed in terms of cultural tourism indicators only. An overview and conclusion on the hypothesis are provided after estimating all results. For all models, standard errors are in parentheses, with statistical significance denoted as follows: * p < 0.1, ** p < 0.05, *** p < 0.01.

5.2.1. Estimation Results for Predetermined Subsamples

To begin, the estimation results for the resistance phase in coastal regions are outlined in the subsequent table.

Table 27. Resistance Phase: OLS Model Estimates with Controls, Coastal Regions

	(3a1.1)	(3a1.2)	(3a1.3)	(3a1.4)	(3a1.5)	(3a1.6)
TOUR	-0.0594***	-0.0627***	-0.0655***	-0.0620***	-0.0641***	-0.150***
	(0.0172)	(0.0172)	(0.0168)	(0.0173)	(0.0173)	(0.0289)
GDP	-0.00417	-0.00428	-0.00263	-0.00430	-0.00147	-0.0114*
	(0.00556)	(0.00557)	(0.00541)	(0.00559)	(0.00563)	(0.00607)
EQI	-0.0465	-0.0432	0.0841	-0.0490	-0.0364	0.330
	(0.219)	(0.219)	(0.217)	(0.219)	(0.219)	(0.217)
HHI	-13.12***	-12.79***	-11.47***	-13.06***	-13.33***	-5.951**
	(2.807)	(2.827)	(2.787)	(2.819)	(2.798)	(2.827)
TP	0.00280	0.00123	0.00109	0.00149	0.000884	0.00210
	(0.00327)	(0.00343)	(0.00323)	(0.00344)	(0.00345)	(0.00349)
SI	-0.0787	-0.0649	-0.0481	-0.0687	-0.0351	-0.0279
	(0.0952)	(0.0953)	(0.0931)	(0.0954)	(0.0973)	(0.0863)
WHS	-0.396					
	(0.241)					
ICH		-0.0318				
		(0.0197)				
MON			-0.00171***			
			(0.000486)			
NIC				-0.00912		
				(0.00668)		
MUS					-0.0396*	
					(0.0216)	
BUS						-0.0423
						(0.0620)
Cons	7.719	6.891	5.775	7.172	5.249	4.072
	(6.145)	(6.146)	(6.004)	(6.154)	(6.230)	(5.559)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
R^2	0.592	0.592	0.612	0.590	0.593	0.530

As observed from the table, *MON* has a statistically significant negative impact at the 1% level, while *MUS* shows a marginal significance at the 10% level. The remaining cultural tourism indicators, while negative, are not statistically significant. Interestingly, coastal regions were heavily impacted during the resistance phase due to *TOUR*, which exhibits a negative sign and significance at the 1% level across all model specifications.

The analysis proceeds with the estimation results for coastal regions during the recovery phases of 2021 and 2022.

Table 28. Recovery Phase (2021): OLS Model Estimates with Controls, Coastal Regions

	(3a2.1)	(3a2.2)	(3a2.3)	(3a2.4)	(3a2.5)	(3a2.6)
TOUR	0.00598	0.00714	0.00838*	0.00720	0.00807*	0.0112
	(0.00462)	(0.00465)	(0.00437)	(0.00461)	(0.00459)	(0.00763)
GDP	-0.00111	-0.00109	-0.00170	-0.000937	-0.00229	0.000139
	(0.00150)	(0.00150)	(0.00141)	(0.00149)	(0.00150)	(0.00160)
EQI	0.172***	0.171***	0.118**	0.167***	0.163***	0.0979*
	(0.0588)	(0.0590)	(0.0565)	(0.0586)	(0.0582)	(0.0572)
HHI	3.464***	3.354***	2.795***	3.393***	3.535***	2.694***
	(0.755)	(0.762)	(0.724)	(0.753)	(0.744)	(0.745)
TP	-0.000100	0.000444	0.000589	0.000597	0.000805	-0.000465
	(0.000879)	(0.000925)	(0.000839)	(0.000920)	(0.000917)	(0.000920)
SI	-0.0593***	-0.0592***	-0.0520***	-0.0570***	-0.0542***	-0.0542***
	(0.0165)	(0.0165)	(0.0156)	(0.0165)	(0.0164)	(0.0147)
WHS	0.145**					
	(0.0648)					
ICH		0.0111**				
		(0.00531)				
MON			0.000682***			
			(0.000126)			
NIC				0.00469***		
				(0.00179)		
MUS					0.0184***	
					(0.00576)	
BUS						0.0508***
						(0.0163)
Cons	2.864***	2.888***	2.551***	2.713***	2.612***	2.602***
	(0.743)	(0.743)	(0.701)	(0.746)	(0.741)	(0.665)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
R^2	0.617	0.615	0.660	0.620	0.627	0.704

Table 29. Recovery Phase (2022): OLS Model Estimates with Controls, Coastal Regions

	(3a3.1)	(3a3.2)	(3a3.3)	(3a3.4)	(3a3.5)	(3a3.6)
TOUR	0.00277	0.00332	0.00392*	0.00335	0.00376*	0.00540
	(0.00217)	(0.00218)	(0.00205)	(0.00216)	(0.00216)	(0.00357)
GDP	-0.000542	-0.000531	-0.000823	-0.000460	-0.00110	0.000104
	(0.000702)	(0.000704)	(0.000658)	(0.000701)	(0.000703)	(0.000749)
EQI	0.0805***	0.0804***	0.0549**	0.0786***	0.0766***	0.0444*
	(0.0276)	(0.0277)	(0.0264)	(0.0275)	(0.0273)	(0.0268)
HHI	1.671***	1.620***	1.350***	1.638***	1.705***	1.304***
	(0.355)	(0.358)	(0.339)	(0.354)	(0.349)	(0.349)
TP	-0.0000733	0.000182	0.000257	0.000257	0.000356	-0.000245
	(0.000413)	(0.000435)	(0.000393)	(0.000432)	(0.000431)	(0.000431)
SI	0.0653***	0.0625***	0.0548***	0.0624***	0.0597***	0.0711***
	(0.0168)	(0.0169)	(0.0159)	(0.0167)	(0.0166)	(0.0148)
WHS	0.0691**					
	(0.0304)					
ICH		0.00520**				
		(0.00249)				
MON			0.000327***			
			(0.0000591)			
NIC				0.00222***		
				(0.000838)		
MUS					0.00873***	
					(0.00270)	
BUS						0.0228***
						(0.00765)
Cons	-1.815***	-1.730***	-1.502***	-1.750***	-1.652***	-1.937***
	(0.546)	(0.548)	(0.516)	(0.544)	(0.540)	(0.485)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
R^2	0.858	0.858	0.875	0.860	0.862	0.893

As evidenced by Table 28 and Table 29, all cultural tourism indicators (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS*) exhibit a positive sign and are statistically significant at least at the 5% level, onfirming the importance of cultural tourism in achieving regional economic resilience during the short-term recovery phases in 2021 and 2022.

The analysis continues with the estimation of models for the resistance phase in mountain regions.

Table 30. Resistance Phase: OLS Model Estimates with Controls, Mountain Regions

	(3b1.1)	(3b1.2)	(3b1.3)	(3b1.4)	(3b1.5)	(3b1.6)
TOUR	-0.228^{***}	-0.243^{***}	-0.231^{***}	-0.241^{***}	-0.230^{***}	-0.329^{***}
	(0.0325)	(0.0324)	(0.0322)	(0.0324)	(0.0324)	(0.0470)
GDP	-0.00890^{**}	-0.00989^{**}	-0.00833^{*}	-0.0104^{**}	-0.00761^{*}	-0.00509
	(0.00435)	(0.00428)	(0.00431)	(0.00431)	(0.00442)	(0.00513)
EQI	0.0750	0.0831	0.105	0.0836	0.0589	0.0790
	(0.211)	(0.206)	(0.209)	(0.207)	(0.210)	(0.226)
HHI	-6.410^{**}	-5.097^{**}	-5.532^{**}	-5.500^{**}	-6.655^{***}	-4.143
	(2.547)	(2.546)	(2.555)	(2.528)	(2.543)	(2.750)
TP	-0.0000323	-0.00371	-0.00131	-0.00320	-0.00128	0.00211
	(0.00324)	(0.00347)	(0.00326)	(0.00342)	(0.00338)	(0.00348)
SI	0.253^{***}	0.260^{***}	0.274^{***}	0.325^{***}	0.254^{***}	0.262^{***}
	(0.0794)	(0.0759)	(0.0766)	(0.0794)	(0.0774)	(0.0942)
WHS	-0.121					
	(0.188)					
ICH		-0.0451^{***}				
		(0.0166)				
MON			-0.000863^{**}			
			(0.000415)			
NIC				-0.0137^{**}		
				(0.00528)		
MUS					-0.0202	
					(0.0147)	
BUS						-0.0692
						(0.0632)
Cons	-9.923^{**}	-10.06^{***}	-10.75^{***}	-12.64^{***}	-9.857^{***}	-10.75^{**}
	(3.824)	(3.636)	(3.663)	(3.727)	(3.720)	(4.294)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
R^2	0.600	0.615	0.608	0.613	0.603	0.587

Table 30 indicates that intangible cultural heritage indicators (*ICH*, *NIC*), along with tangible indicators of national importance (*MON*), are statistically significant at the 5% level. The other cultural tourism indicators exhibit negative values, but they are not statistically significant. Comparable to coastal regions, tourism significantly impacted mountain regions' vulnerability during the shock, with *TOUR* having a negative sign and statistical significance at the 1% level in all model specifications.

The next step in the analysis is to focus on model estimations for the short-term recovery phases of the same subsample of mountain regions.

Table 31. Recovery Phase (2021): OLS Model Estimates with Controls, Mountain Regions

	(3b2.1)	(3b2.2)	(3b2.3)	(3b2.4)	(3b2.5)	(3b2.6)
TOUR	0.0291***	0.0313***	0.0299***	0.0312***	0.0297***	0.0402***
	(0.00991)	(0.0100)	(0.00982)	(0.00998)	(0.00987)	(0.0144)
GDP	0.000974	0.00113	0.000813	0.00123	0.000588	0.000111
	(0.00132)	(0.00132)	(0.00131)	(0.00133)	(0.00135)	(0.00157)
EQI	0.00121	0.000269	-0.00818	0.0000399	0.00503	-0.00812
	(0.0642)	(0.0638)	(0.0637)	(0.0638)	(0.0638)	(0.0692)
HHI	2.304***	2.093***	2.054***	2.150***	2.378***	2.313***
	(0.776)	(0.786)	(0.779)	(0.779)	(0.774)	(0.842)
TP	-0.00106	-0.000474	-0.000669	-0.000527	-0.000655	-0.00162
	(0.000986)	(0.00107)	(0.000995)	(0.00106)	(0.00103)	(0.00107)
SI	-0.0734***	-0.0741***	-0.0758***	-0.0794***	-0.0730***	-0.0837***
	(0.0116)	(0.0113)	(0.0112)	(0.0118)	(0.0113)	(0.0139)
WHS	0.0238					
	(0.0572)					
ICH		0.00726				
		(0.00514)				
MON			0.000246*			
			(0.000126)			
NIC				0.00231		
				(0.00163)		
MUS					0.00607	
					(0.00447)	
BUS						0.0365*
						(0.0194)
Cons	3.402***	3.411***	3.465***	3.585***	3.341***	3.765***
	(0.610)	(0.586)	(0.582)	(0.590)	(0.593)	(0.652)
Ctr. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
R^2	0.622	0.625	0.629	0.625	0.625	0.647

Table 32. Recovery Phase (2022): OLS Model Estimates with Controls, Mountain Regions

	(3b3.1)	(3b3.2)	(3b3.3)	(3b3.4)	(3b3.5)	(3b3.6)
TOUR	0.0140***	0.0150***	0.0144***	0.0150***	0.0142***	0.0195***
	(0.00461)	(0.00465)	(0.00456)	(0.00464)	(0.00459)	(0.00669)
GDP	0.000455	0.000531	0.000376	0.000577	0.000267	0.0000596
	(0.000616)	(0.000615)	(0.000610)	(0.000618)	(0.000627)	(0.000729)
EQI	0.000826	0.000395	-0.00376	0.000278	0.00270	-0.00449
	(0.0299)	(0.0297)	(0.0296)	(0.0297)	(0.0297)	(0.0321)
HHI	1.114***	1.011***	0.991***	1.038***	1.149***	1.107***
	(0.361)	(0.366)	(0.362)	(0.363)	(0.360)	(0.391)
TP	-0.000499	-0.000217	-0.000310	-0.000242	-0.000305	-0.000773
	(0.000459)	(0.000499)	(0.000463)	(0.000491)	(0.000479)	(0.000496)
SI	-0.966***	-0.975***	-0.996***	-1.039***	-0.961***	-1.083***
	(0.136)	(0.132)	(0.131)	(0.138)	(0.132)	(0.162)
WHS	0.0119					
	(0.0266)					
ICH		0.00353				
		(0.00239)				
MON			0.000121**			
			(0.0000587)			
NIC				0.00113		
				(0.000757)		
MUS					0.00295	
					(0.00208)	
BUS						0.0170*
						(0.00899)
Cons	16.42***	16.56***	16.90***	17.61***	16.31***	18.33***
	(2.296)	(2.222)	(2.211)	(2.309)	(2.235)	(2.700)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
R^2	0.862	0.864	0.865	0.864	0.864	0.870

As outlined in Table 31 and Table 32, among cultural tourism indicators, *MON* shows a positive and statistically significant role during the recovery phase in 2022, with significance at the 10% level during the recovery phase in 2021. *BUS* also exhibits marginal significance at the 10% level in both phases. All other indicators are positive but not statistically significant. It is worth noting that *TOUR* has a positive and statistically significant effect in all model specifications at the 1% level, underscoring the importance of tourism for economic recovery in mountain regions.

The analysis continues with model estimation for the resistance phase of urban regions.

Table 33. Resistance Phase: OLS Model Estimates with Controls, Urban Regions

	(3c1.1)	**(3c1.2)**	**(3c1.3)**	**(3c1.4)**	**(3c1.5)**	**(3c1.6)**
TOUR	-0.000379	0.0000205	0.000326	0.000663	-0.00124	0.00138
	(0.00300)	(0.00322)	(0.00296)	(0.00329)	(0.00296)	(0.00679)
GDP	0.000442	-0.000721	-0.000299	-0.000908	0.00287	-0.00412
	(0.00513)	(0.00544)	(0.00498)	(0.00552)	(0.00506)	(0.00467)
EQI	-0.0347	0.0223	0.0956	-0.00415	-0.0826	0.00300
	(0.176)	(0.183)	(0.173)	(0.180)	(0.173)	(0.165)
HHI	-18.67***	-18.79***	-18.50***	-18.90***	-20.74***	-7.675
	(6.385)	(6.214)	(6.133)	(6.225)	(6.763)	(6.061)
TP	-0.00203	-0.00403	-0.00362	-0.00399	-0.00440	-0.00257
	(0.00399)	(0.00421)	(0.00387)	(0.00415)	(0.00429)	(0.00333)
SI	0.0926	0.0599	0.0726	0.0491	0.0822	0.0951
	(0.0606)	(0.0635)	(0.0603)	(0.0621)	(0.0659)	(0.0801)
WHS	-0.983**					
	(0.489)					
ICH		-0.200**				
		(0.0883)				
MON			-0.00327***			
			(0.000689)			
NIC				-0.0632***		
				(0.0200)		
MUS					-0.0506***	
					(0.0177)	
BUS						-0.00473
						(0.0567)
Cons	-0.103	1.701	1.241	2.490	0.620	-2.824
	(3.116)	(3.349)	(3.067)	(3.279)	(3.399)	(3.901)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
R^2	0.501	0.508	0.544	0.513	0.500	0.344

Unlike coastal and mountain regions, Table 33 shows that cultural tourism indicators in urban regions generally exhibit negative signs and are statistically significant in nearly all cases. Five out of six indicators (*WHS*, *ICH*, *MON*, *NIC*, *MUS*) are significant at the 5% level (or better), with BUS being the only non-significant indicator, though still negative. This suggests that cultural tourism significantly increased the vulnerability of urban regions during the shock.

The analysis now focuses on model estimations for the recovery phases of urban regions.

Table 34. Recovery Phase (2021): OLS Model Estimates with Controls, Urban Regions

	(3c2.1)	(3c2.2)	(3c2.3)	(3c2.4)	(3c2.5)	(3c2.6)
TOUR	0.00217***	0.00221***	0.00205***	0.00212***	0.00242***	-0.00247
	(0.000541)	(0.000571)	(0.000547)	(0.000570)	(0.000582)	(0.00204)
GDP	-0.00228***	-0.00228**	-0.00217**	-0.00225**	-0.00290***	-0.00226***
	(0.000861)	(0.000895)	(0.000851)	(0.000901)	(0.000973)	(0.000711)
EQI	0.140***	0.146***	0.115***	0.149***	0.158***	0.152***
	(0.0432)	(0.0455)	(0.0424)	(0.0455)	(0.0440)	(0.0371)
HHI	3.927***	4.001***	3.914***	4.015***	4.415***	2.514*
	(1.052)	(1.181)	(1.048)	(1.181)	(1.249)	(1.332)
TP	0.00214**	0.00230*	0.00247**	0.00231**	0.00260**	0.00179*
	(0.00102)	(0.00117)	(0.00100)	(0.00114)	(0.00117)	(0.000911)
SI	-0.0384***	-0.0378***	-0.0367***	-0.0369***	-0.0382***	-0.0365***
	(0.00557)	(0.00690)	(0.00560)	(0.00702)	(0.00645)	(0.00709)
WHS	0.332***					
	(0.119)					
ICH		0.0267				
		(0.0225)				
MON			0.000791***			
			(0.000198)			
NIC				0.00878		
				(0.00593)		
MUS					0.0111***	
					(0.00413)	
BUS						0.0386**
						(0.0161)
Cons	1.435***	1.466***	1.299***	1.380**	1.428***	1.739***
	(0.449)	(0.531)	(0.431)	(0.545)	(0.498)	(0.447)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
R^2	0.510	0.484	0.529	0.486	0.490	0.555

Table 35. Recovery Phase (2022): OLS Model Estimates with Controls, Urban Regions

	(3c3.1)	(3c3.2)	(3c3.3)	(3c3.4)	(3c3.5)	(3c3.6)
TOUR	0.000986***	0.00100***	0.000926***	0.000960***	0.00110***	-0.00113
	(0.000249)	(0.000263)	(0.000252)	(0.000262)	(0.000269)	(0.000922)
GDP	-0.00107***	-0.00107**	-0.00102**	-0.00105**	-0.00136***	-0.00103***
	(0.000398)	(0.000415)	(0.000393)	(0.000417)	(0.000453)	(0.000327)
EQI	0.0649***	0.0671***	0.0528***	0.0688***	0.0734***	0.0698***
	(0.0199)	(0.0211)	(0.0195)	(0.0211)	(0.0204)	(0.0171)
HHI	1.862***	1.897***	1.856***	1.904***	2.093***	1.193*
	(0.497)	(0.560)	(0.495)	(0.561)	(0.593)	(0.628)
TP	0.000982**	0.00106*	0.00114**	0.00106**	0.00120**	0.000813*
	(0.000476)	(0.000547)	(0.000465)	(0.000532)	(0.000544)	(0.000416)
SI	-0.0641***	-0.0633***	-0.0621***	-0.0623***	-0.0639***	-0.0621***
	(0.00645)	(0.00800)	(0.00651)	(0.00815)	(0.00750)	(0.00821)
WHS	0.158***					
	(0.0562)					
ICH		0.0131				
		(0.0106)				
MON			0.000377***			
			(0.0000945)			
NIC				0.00420		
				(0.00281)		
MUS					0.00525***	
					(0.00196)	
BUS						0.0175**
						(0.00728)
Cons	1.236***	1.248***	1.172***	1.210***	1.234***	1.385***
	(0.213)	(0.250)	(0.204)	(0.258)	(0.236)	(0.211)
Ctry. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
R^2	0.820	0.809	0.827	0.810	0.812	0.837

During the recovery phases in urban regions, all cultural tourism indicators display positive signs. However, indicators related to physical cultural heritage resources (*WHS*, *MON*), infrastructure (*MUS*), and business (*BUS*) are statistically significant at the 5% level, while intangible cultural heritage indicators (*ICH*, *NIC*) do not show significance. *TOUR* is statistically significant in 5 out of 6 models, indicating a positive role in the regional recovery of urban regions.

The analysis now shifts to the estimation model results for the resistance phase of regional economic resilience in rural regions.

Table 36. Resistance Phase: OLS Model Estimates with Controls, Rural Regions

	(3d1.1)	**(3d1.2)**	**(3d1.3)**	**(3d1.4)**	**(3d1.5)**	**(3d1.6)**
TOUR	-0.362***	-0.361***	-0.358***	-0.360***	-0.358***	-0.358***
	(0.113)	(0.109)	(0.114)	(0.111)	(0.115)	(0.119)
GDP	-0.00769	-0.0106	-0.00664	-0.0101	-0.00833	-0.00860
	(0.0113)	(0.0112)	(0.0114)	(0.0112)	(0.0118)	(0.0118)
EQI	0.117	0.104	0.145	0.112	0.136	0.116
	(0.345)	(0.346)	(0.339)	(0.338)	(0.341)	(0.346)
HHI	-0.453	1.165	-0.0231	0.542	-0.616	-0.518
	(7.538)	(7.675)	(7.572)	(7.539)	(7.567)	(7.598)
TP	0.000983	-0.00339	-0.000308	-0.00236	0.00142	0.000697
	(0.00387)	(0.00355)	(0.00376)	(0.00354)	(0.00401)	(0.00399)
SI	0.0572	0.0766	0.0798	0.134*	0.0596	0.0387
	(0.0724)	(0.0716)	(0.0653)	(0.0804)	(0.0733)	(0.0756)
WHS	0.170					
	(0.174)					
ICH		-0.0411**				
		(0.0182)				
MON			-0.000570			
			(0.000451)			
NIC				-0.0114**		
				(0.00481)		
MUS					0.0132	
					(0.0199)	
BUS						0.0390
						(0.0379)
Cons	-1.594	-2.266	-2.500	-4.590	-1.682	-0.810
	(3.047)	(3.105)	(3.049)	(3.616)	(3.065)	(3.169)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
R^2	0.630	0.640	0.632	0.638	0.629	0.607

As seen in Table 36, cultural tourism indicators show mixed signs during the resistance phase of regional economic resilience. But, only the intangible cultural heritage indicators (WHS, NIC) are significant at the 5% level, and both have negative signs. Tourism significantly affected the vulnerability of rural regions during the shock, with TOUR showing a negative sign and statistical significance at the 1% level in all model specifications.

The next tables provide model estimation results for the recovery phases of rural regions.

Table 37. Recovery Phase (2021): OLS Model Estimates with Controls, Rural Regions

	(3d2.1)	(3d2.2)	(3d2.3)	(3d2.4)	(3d2.5)	(3d2.6)
TOUR	0.0763***	0.0763***	0.0758***	0.0761***	0.0753***	0.0762***
	(0.0169)	(0.0160)	(0.0172)	(0.0163)	(0.0168)	(0.0164)
GDP	0.00321	0.00404*	0.00283	0.00394*	0.00312	0.00293
	(0.00226)	(0.00234)	(0.00220)	(0.00229)	(0.00232)	(0.00221)
EQI	-0.126	-0.122	-0.135	-0.124	-0.129	-0.116
	(0.116)	(0.115)	(0.117)	(0.116)	(0.117)	(0.114)
HHI	-0.302	-0.764	-0.488	-0.611	-0.259	-0.432
	(1.156)	(1.244)	(1.139)	(1.190)	(1.146)	(1.181)
TP	-0.00245**	-0.00124	-0.00200	-0.00147	-0.00232*	-0.00186
	(0.00121)	(0.00132)	(0.00125)	(0.00134)	(0.00131)	(0.00123)
SI	-0.0382***	-0.0408***	-0.0423***	-0.0491***	-0.0381***	-0.0464***
	(0.0111)	(0.0106)	(0.0114)	(0.0116)	(0.0111)	(0.0116)
WHS	-0.0388					
	(0.0659)					
ICH		0.0115**				
		(0.00465)				
MON			0.000213			
			(0.000154)			
NIC				0.00338*		
				(0.00175)		
MUS					0.00151	
					(0.00674)	
BUS						0.0267
						(0.0249)
Cons	2.025***	2.087***	2.173***	2.381***	1.996***	2.303***
	(0.572)	(0.562)	(0.589)	(0.591)	(0.575)	(0.560)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
R^2	0.706	0.713	0.709	0.713	0.705	0.712

Table 38. Recovery Phase (2022): OLS Model Estimates with Controls, Rural Regions

	(3d3.1)	(3d3.2)	(3d3.3)	(3d3.4)	(3d3.5)	(3d3.6)
TOUR	0.0365***	0.0365***	0.0362***	0.0364***	0.0360***	0.0364***
	(0.00794)	(0.00750)	(0.00808)	(0.00762)	(0.00786)	(0.00771)
GDP	0.00151	0.00190*	0.00132	0.00186*	0.00146	0.00138
	(0.00106)	(0.00109)	(0.00102)	(0.00107)	(0.00108)	(0.00104)
EQI	-0.0601	-0.0581	-0.0643	-0.0590	-0.0615	-0.0558
	(0.0532)	(0.0527)	(0.0538)	(0.0530)	(0.0539)	(0.0522)
HHI	-0.111	-0.329	-0.203	-0.258	-0.0900	-0.169
	(0.546)	(0.588)	(0.537)	(0.562)	(0.541)	(0.558)
TP	-0.00116**	-0.000583	-0.000936	-0.000690	-0.00109*	-0.000888
	(0.000565)	(0.000615)	(0.000581)	(0.000622)	(0.000606)	(0.000575)
SI	-0.545***	-0.576***	-0.595***	-0.676***	-0.543***	-0.637***
	(0.131)	(0.125)	(0.134)	(0.137)	(0.131)	(0.136)
WHS	-0.0184					
	(0.0317)					
ICH		0.00544**				
		(0.00221)				
MON			0.000105			
			(0.0000730)			
NIC				0.00161*		
				(0.000830)		
MUS					0.000839	
					(0.00318)	
BUS						0.0119
						(0.0113)
Cons	9.472***	9.964***	10.30***	11.59***	9.431***	10.97***
	(2.190)	(2.097)	(2.251)	(2.293)	(2.192)	(2.260)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
R^2	0.900	0.902	0.902	0.902	0.900	0.902

Throughout the short-term recovery phases in rural regions, most cultural tourism indicators do not reach statistical significance. However, intangible cultural heritage indicators stand out: WHS is positively significant at the 5% level, while NIC shows a positive sign and is significant at the 10% level. TOUR is significant for the recovery of rural regions, achieving statistical significance at the 1% level in all model specifications.

5.2.2. Estimation Results for Spatial Regimes

After conducting the analysis on predetermined clusters, new spatial regimes were formed based on data on regional economic resilience, cultural tourism, and tourism demand, as discussed in subchapter 4.5.2 on spatial heterogeneity. The *SkaterF* function by Vidoli et al. (2022) allows for the estimation of territorially defined areas where production units are maximally homogeneous in functional terms, while being heterogeneous with others. The relationship examined is specifically between economic resilience indicators and cultural tourism, as well as tourism demand, estimated using OLS to ensure a more parsimonious model for this analysis. The process of identifying homogeneous areas and conducting regression estimation is integrated into a single stage to maximize the functional homogeneity of local areas.

Clusters obtained through spatial regimes analysis, as well as OLS estimation results, are generated using the Spatial Regimes web app. It is crucial to note that for each combination of dependent variables (economic resistance, economic recovery 2021, economic recovery 2022) and independent variables (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS* combined with *TOUR*), different clusters (spatial regimes) are estimated.

As a result, the number and structure of regions in each spatial regime change depending on the combination. For example, the combination of economic resistance and *WHS* versus economic recovery and *WHS* leads to different regions in the first spatial regime. Similarly, the combinations of economic resistance and ICH compared to economic resistance and NIC result in distinct spatial regimes. To illustrate this, maps for each combination of estimated spatial regimes are presented.

For the spatial regimes analysis, specific parameters were set: the desired number of estimated clusters, was established at $k = 3$, and the minimum criterion for a group (spatial regime) was to include at least 90 regions. The connectivity graphs are provided in Annex 1, spanning Figure A 1 through Figure A 6.

Spatial regimes analysis starts with the estimation of clusters for *WHS* and *ICH* during the resistance phase, as depicted in Figure 18 and Figure 19.

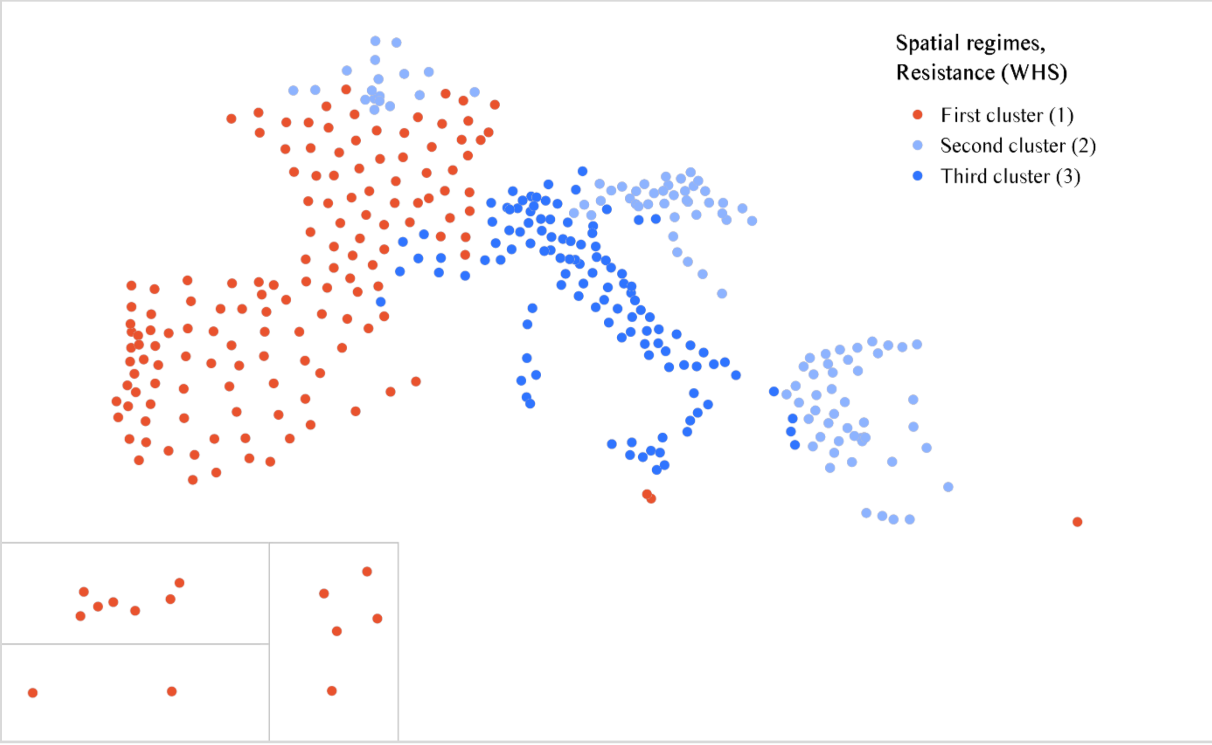

Figure 18. Estimated clusters (spatial regimes): WHS in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

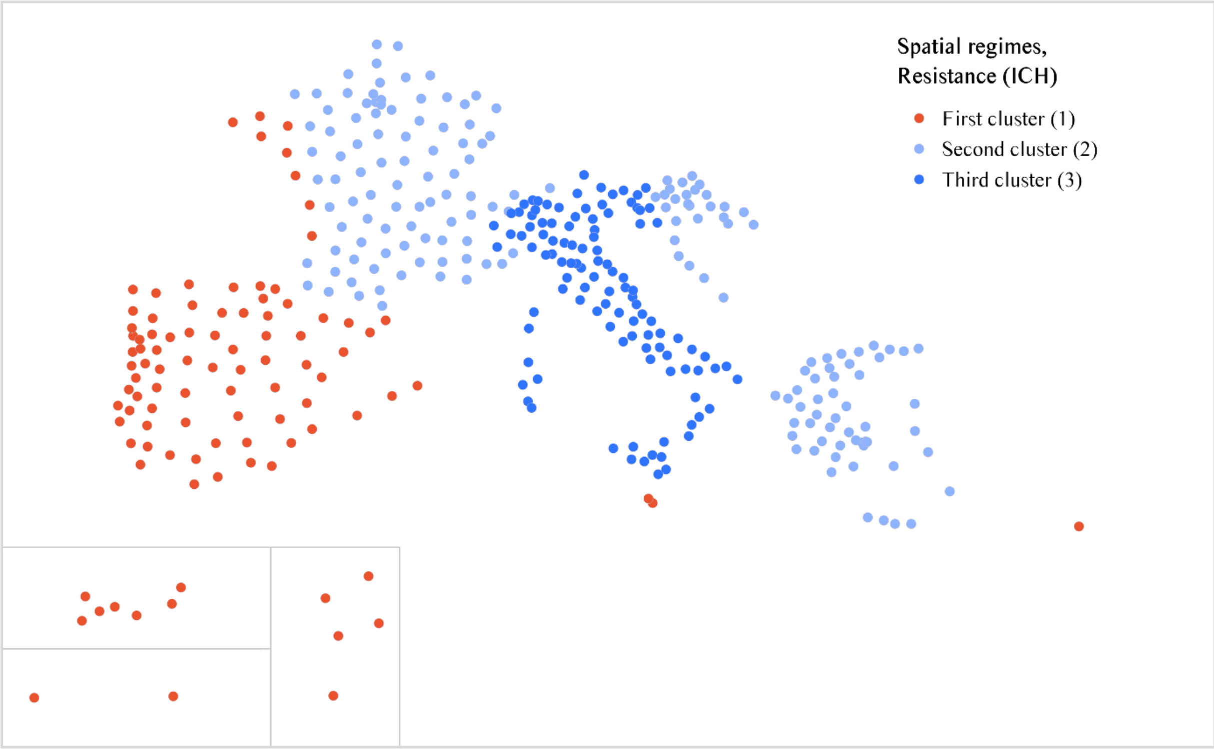

Figure 19. Estimated clusters (spatial regimes): ICH in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Then, Table 39 displays the OLS estimates for cases without regimes and with regimes.

Table 39. Spatial Regimes Analysis: WHS and ICH in the Resistance Phase

	(4a1)	(4a1.1)	(4a1.2)	(4a1.3)	(4b1)	(4b1.1)	(4b1.2)	(4b1.3)
WHS	-0.383	-0.0447	-0.697	0.268				
	(0.303)	(0.344)	(0.464)	(0.277)				
ICH					-0.0419*	-0.0317**	-0.0639	0.0474
					(0.0217)	(0.0127)	(0.0405)	(0.104)
TOUR	-0.00839*	-0.229***	-0.00315**	-0.0989***	-0.00867*	-0.231***	-0.0056***	-0.0909***
	(0.00487)	(0.0304)	(0.00127)	(0.0235)	(0.00498)	(0.0302)	(0.00211)	(0.0232)
Cons	-0.0414	0.262*	0.404	-3.542***	-0.139***	5.311***	0.908***	-2.197***
	(0.105)	(0.134)	(0.246)	(0.418)	(0.0203)	(1.766)	(0.227)	(0.744)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	156	107	115	378	98	171	109
R^2	0.385	0.778	0.240	0.554	0.389	0.762	0.324	0.210

As it can be noticed from the table, there is no significant in *WHS* for any of regimes, while *ICH* is statistically significant for first regime mostly consisting of regions in Portugal and Spain.

The spatial regimes analysis proceeds with the estimation of clusters for national cultural heritage indicators, *MON* and *NIC*, during the resistance phase, as illustrated in Figure 20 and Figure 21.

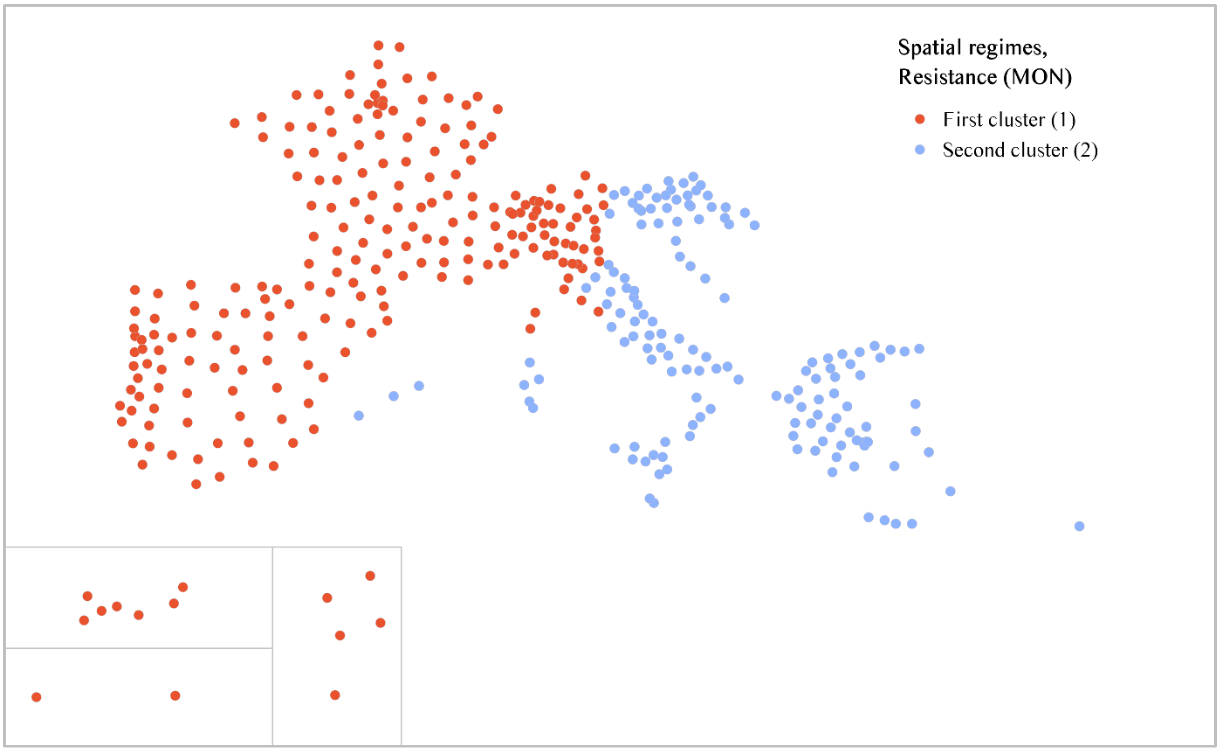

Figure 20. Estimated clusters (spatial regimes): MON in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

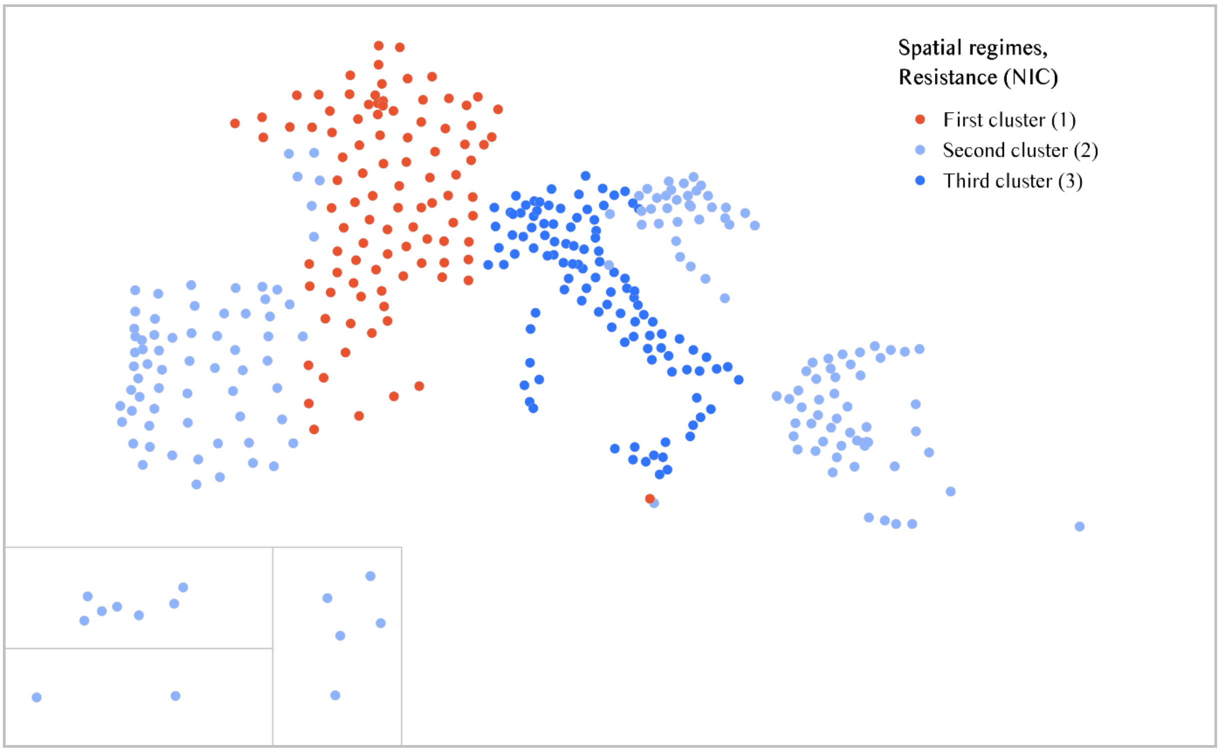

Figure 21. Estimated clusters (spatial regimes): NIC in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Next, Table 40 provides the OLS estimates for both scenarios: without regimes and with regimes.

Table 40. Spatial Regimes Analysis: MON and NIC in the Resistance Phase

	(4c1)	(4c1.1)	(4c1.2)	(4d1)	(4d1.1)	(4d1.2)	(4d1.3)
MON	-0.00188***	0.00110	-0.00193***				
	(0.000418)	(0.000802)	(0.000425)				
NIC				-0.0119*	0.0255	-0.0139**	-0.0390
				(0.00617)	(0.0410)	(0.00602)	(0.0310)
TOUR	-0.00850*	-0.00539**	-0.0772*	-0.00849*	-0.00474***	-0.109	-0.0677*
	(0.00494)	(0.00215)	(0.0461)	(0.00496)	(0.00170)	(0.0677)	(0.0403)
Cons	0.117*	-0.878***	0.256**	-0.110***	-2.143	0.0908	-0.400***
	(0.0656)	(0.144)	(0.101)	(0.0342)	(1.480)	(0.130)	(0.131)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	230	148	378	100	170	108
R^2	0.414	0.495	0.507	0.387	0.557	0.465	0.043

Regarding the *MON* indicator, only two spatial regimes are estimated. *MON* is statistically significant with a negative sign for the scenario without regimes and for the second cluster, which predominantly includes regions of Italy, Croatia, Greece, Malta, and Cyprus. As for *NIC*, there is marginal significance for the entire sample at the 10% level, while the second cluster shows statistical significance at the 5% level. This second cluster comprises NUTS 3 units mainly from Spain, Portugal, Croatia, and Greece.

The spatial regimes analysis further examines the estimation of clusters for *MUS* and *BUS*, during the resistance phase, as represented in Figure 22 and Figure 23.

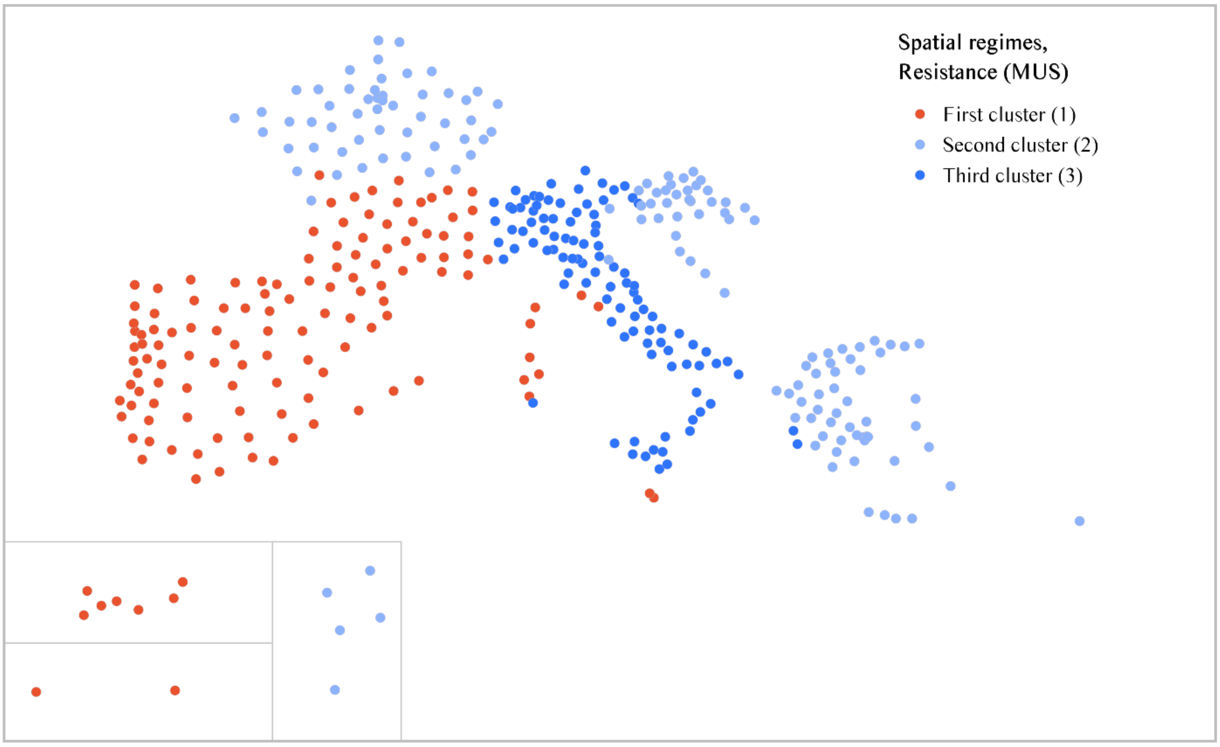

Figure 22. Estimated clusters (spatial regimes): MUS in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

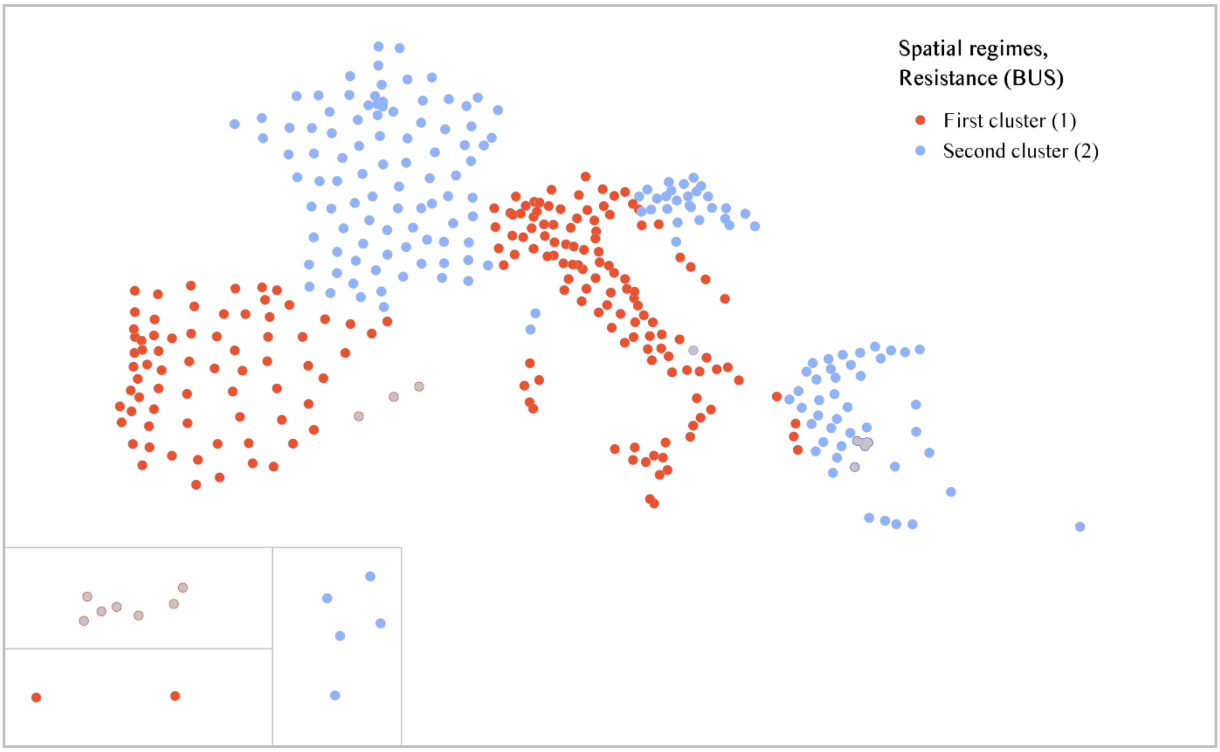

Figure 23. Estimated clusters (spatial regimes): BUS in the Resistance Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Then, Table 41 offers the OLS estimates for both scenarios: without regimes and with regimes.

Table 41. Spatial Regimes Analysis: MUS and BUS in the Resistance Phase

	(4f1)	(4f1.1)	(4f1.2)	(4f1.3)	(4e1)	(4e1.1)	(4e1.2)
MUS	-0.0180	-0.00774	-0.149**	-0.0218**			
	(0.0131)	(0.0202)	(0.0578)	(0.00968)			
BUS					-0.0301	-0.358***	-0.0383
					(0.0345)	(0.124)	(0.0338)
TOUR	-0.00844*	-0.233***	-0.00512***	-0.0782*	-0.00249	-0.0869***	0.000310
	(0.00495)	(0.0297)	(0.00195)	(0.0428)	(0.00543)	(0.0249)	(0.00449)
Cons	-0.140***	5.285***	0.0931	-3.634***	-0.130**	-0.671	-0.121**
	(0.0261)	(1.824)	(0.106)	(0.843)	(0.0532)	(0.809)	(0.0522)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	133	144	101	360	190	170
R^2	0.382	0.770	0.332	0.343	0.324	0.514	0.310

The table reveals that the *MUS* variable, despite having a negative sign, is not significant for the whole sample. However, with the estimation of three clusters, it shows a negative and statistically significant effect in the second cluster (mostly Italy) and the third cluster (mostly northern and central France, Croatia, Greece). For the *BUS* indicator, two regimes are estimated. BUS is not significant for the overall sample but is statistically significant in the first cluster, primarily encompassing regions in Portugal, Spain, Italy, and the Adriatic part of Croatia.

The spatial regimes analysis now transitions to the recovery phase of 2021, beginning with the estimation of clusters for UNESCO's cultural heritage indicators, *WHS* and *ICH*.

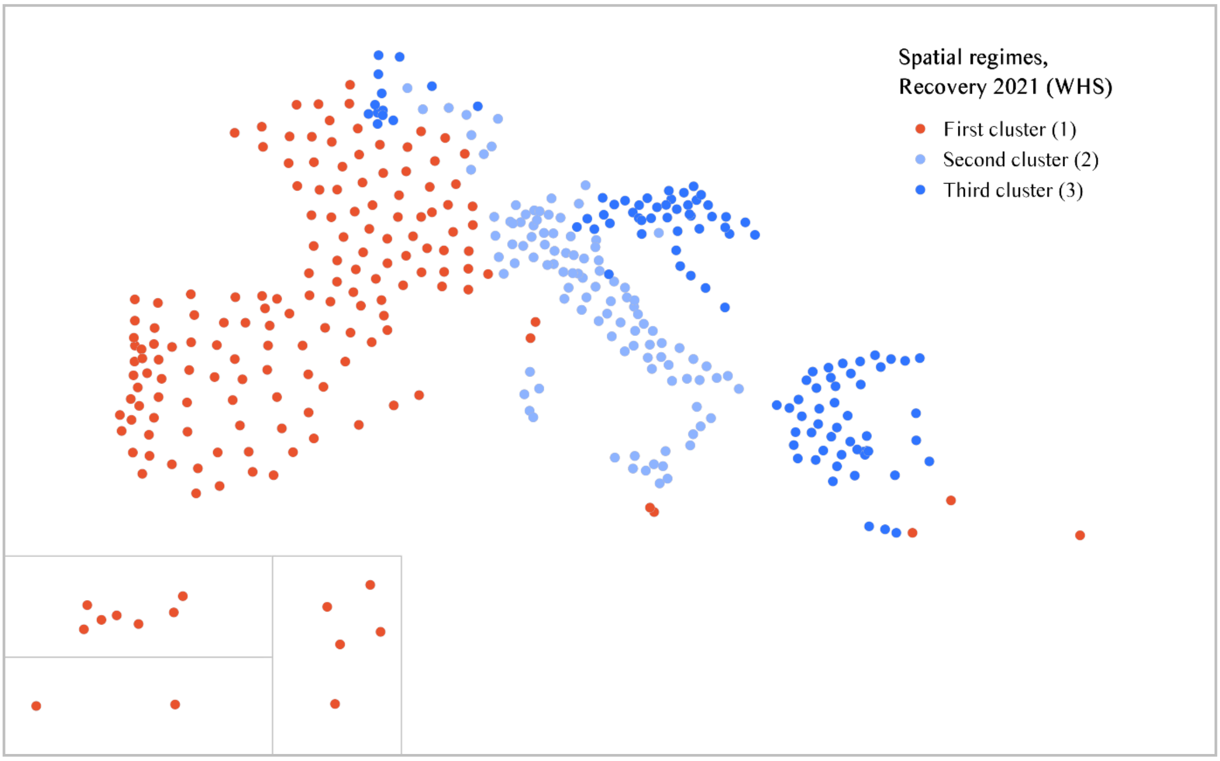

Figure 24. Estimated clusters (spatial regimes): WHS in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

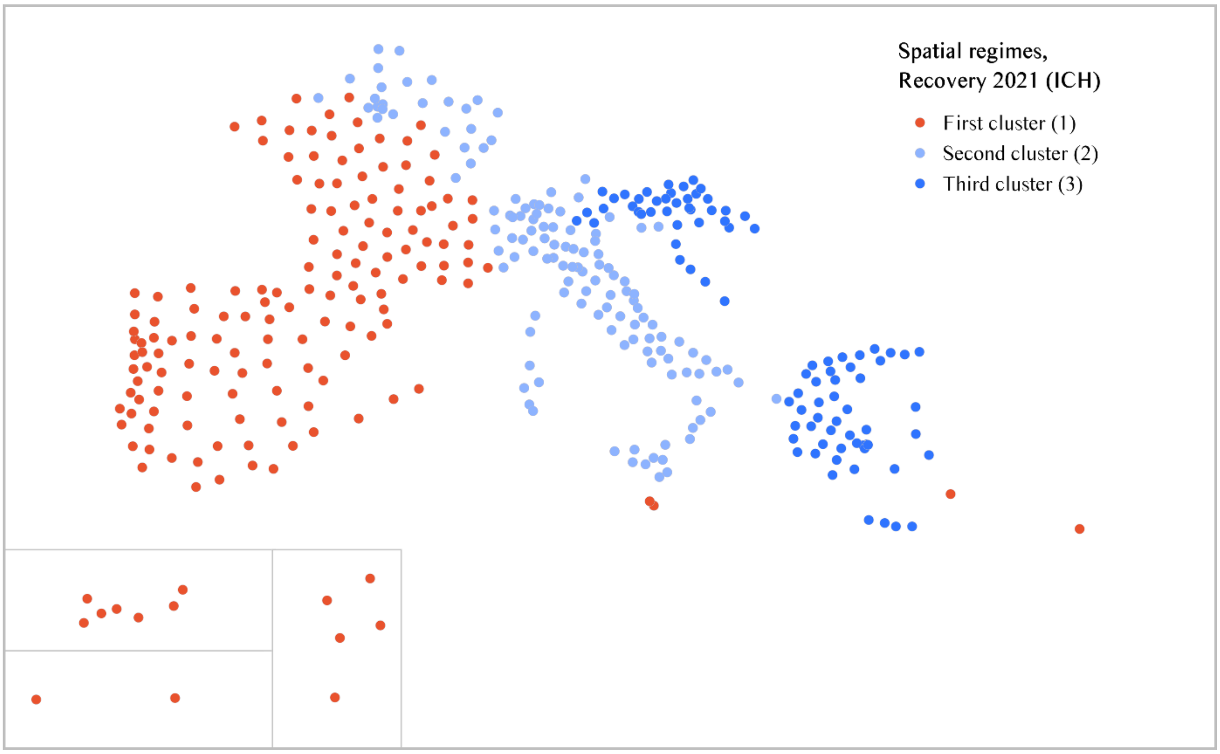

Figure 25. Estimated clusters (spatial regimes): ICH in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Figures 24 and 25 reveal that the estimated clusters for *WHS* and *ICH* are nearly identical. The OLS estimates are presented in the following table.

Table 42. Spatial Regimes Analysis: WHS and ICH in the Recovery Phase (2021)

	(4a2)	(4a2.1)	(4a2.2)	(4a2.3)	(4b2)	(4b2.1)	(4b2.2)	(4b2.3)
WHS	0.149**	0.0669	0.0321	0.193**				
	(0.0699)	(0.104)	(0.107)	(0.0890)				
ICH					0.0121**	0.00434*	0.00231	0.0433***
					(0.00580)	(0.00261)	(0.0274)	(0.0116)
TOUR	0.00244***	0.0463***	0.00208	0.00163***	0.00252***	0.0460***	0.00176***	0.00467
	(0.000747)	(0.00975)	(0.00723)	(0.000285)	(0.000778)	(0.0102)	(0.000183)	(0.00674)
Cons	0.0823***	-0.265	-0.385***	-0.0174	0.123***	0.0470**	1.332***	-0.0253
	(0.0241)	(0.501)	(0.0606)	(0.0871)	(0.00495)	(0.0193)	(0.228)	(0.0372)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	165	106	107	378	157	131	90
R^2	0.479	0.417	0.502	0.470	0.478	0.419	0.550	0.507

According to Table 42, both *WHS* and *ICH* have positive signs and statistical significance in the models without regimes. When spatial regimes are considered, only the third spatial regime, mostly covering regions in Slovenia, Croatia, and Greece, exhibits a positive and statistically significant effect for both UNESCO cultural heritage indicators. The other regimes lack robust statistical significance.

The analysis of spatial regimes continues with the estimation of clusters for the national cultural heritage indicators, *MON* and *NIC*.

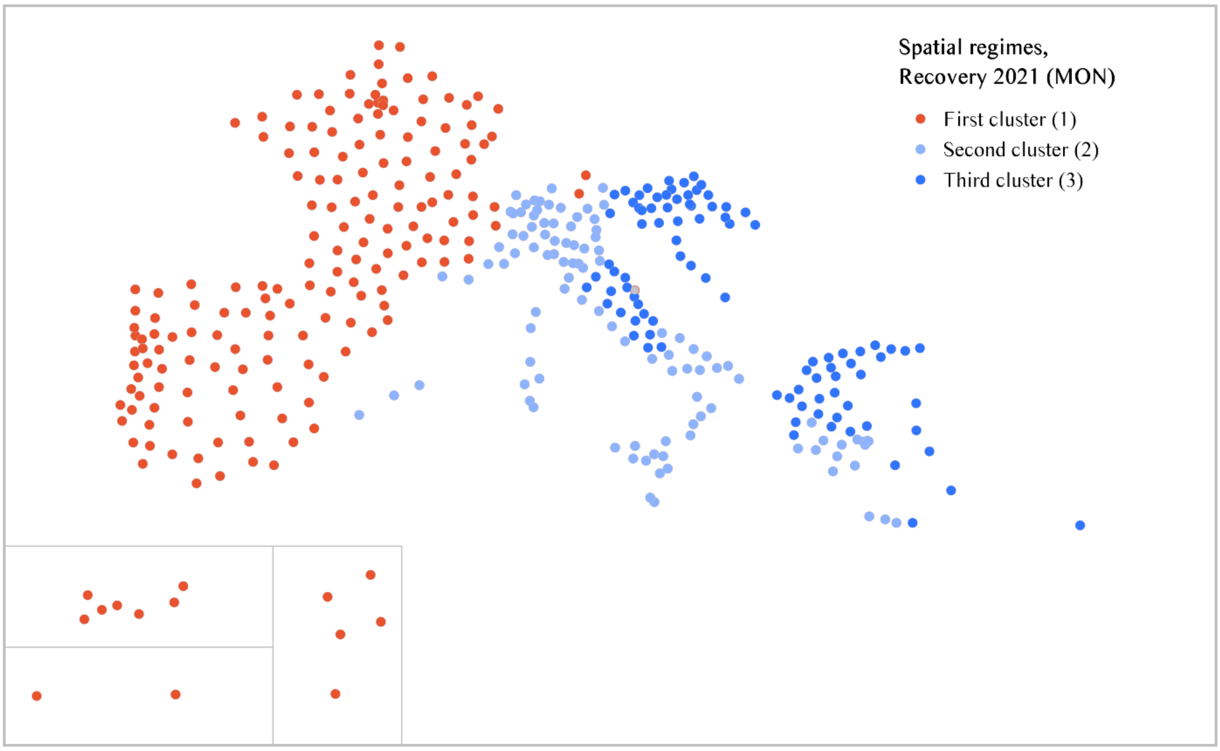

Figure 26. Estimated clusters (spatial regimes): MON in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

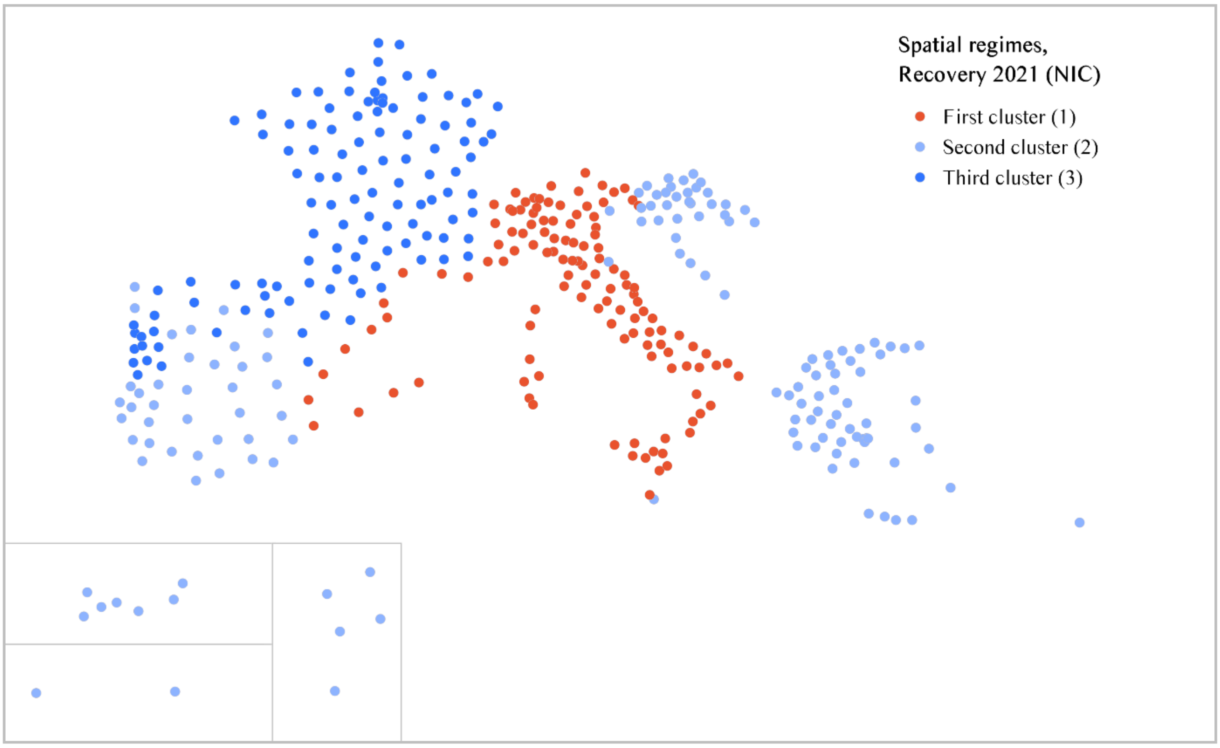

Figure 27. Estimated clusters (spatial regimes): NIC in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Table 43 then provides the OLS estimates for the *MON* and *NIC* indicators.

Table 43. Spatial Regimes Analysis: MON and NIC in the Recovery Phase (2021)

	(4c2)	(4c2.1)	(4c2.2)	(4c2.3)	(4d2)	(4d2.1)	(4d2.2)	(4d2.3)
MON	0.000601***	-0.000055	0.000383***	0.000448***				
	(0.000137)	(0.000368)	(0.000142)	(0.000157)				
NIC					0.00355**	0.0144**	0.00406**	-0.0167
					(0.00174)	(0.00692)	(0.00180)	(0.0113)
TOUR	0.00247***	0.00206***	0.00123	0.0385**	0.00247***	0.0470***	0.0152	0.00175***
	(0.000765)	(0.000308)	(0.00457)	(0.0162)	(0.000774)	(0.0115)	(0.0137)	(0.000136)
Cons	0.0404*	-0.189***	0.691***	-0.00452	0.114***	-0.190	0.0876***	0.000967
	(0.0213)	(0.0441)	(0.184)	(0.0302)	(0.00932)	(0.342)	(0.0274)	(0.0601)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	179	106	92	378	122	140	116
R^2	0.509	0.096	0.699	0.641	0.476	0.548	0.583	0.107

Both *MON* and *NIC* indicators are statistically significant at the 1% level for the scenario without regimes. Moreover, the *MON* indicator is statistically significant in the second cluster, which mainly consists of most of Italy, Mallorca, and some coastal regions in Greece. It is also significant in the third cluster, which includes the remaining regions of Italy and Greece, as well as regions in Slovenia and Croatia. *NIC* is statistically significant for the first regime, which covers almost all of Italy, and the second regime, which includes regions in Slovenia, Croatia, Greece, and parts of Spain and Portugal.

The analysis proceeds with the estimation of clusters for the *MUS* and *BUS* indicators.

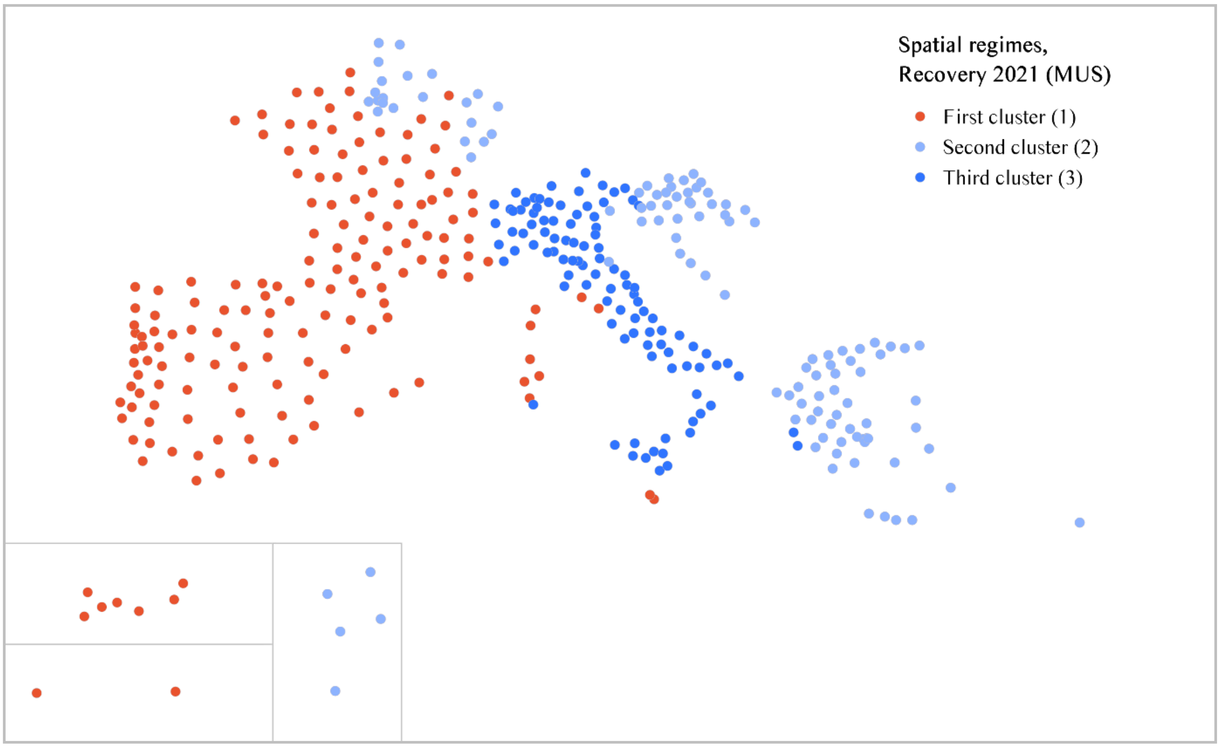

Figure 28. Estimated clusters (spatial regimes): MUS in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

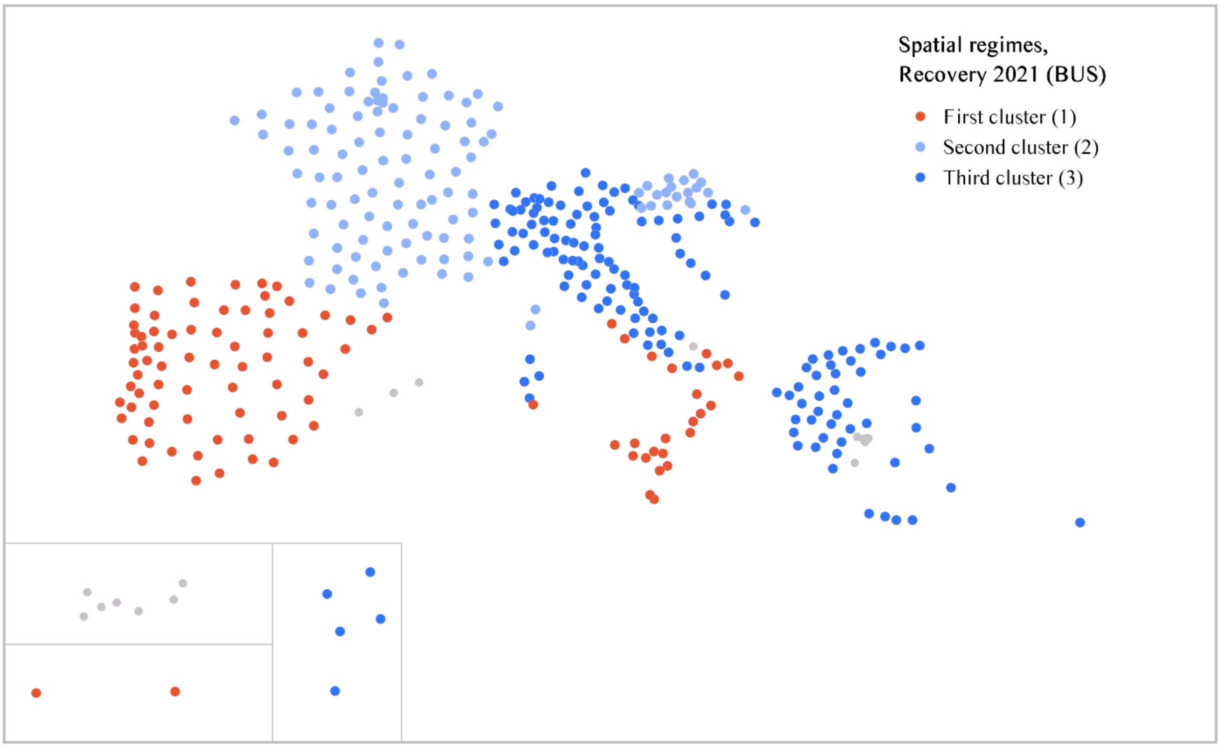

Figure 29. Estimated clusters (spatial regimes): BUS in the Recovery (2021) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Next, Table 44 details the OLS estimates for the *MUS* and *BUS* indicators in both scenarios: without regimes and with regimes.

Table 44. Spatial Regimes Analysis: MUS and BUS in the Recovery Phase (2021)

	(4e2)	(4e2.1)	(4e2.2)	(4e2.3)	(4f2)	(4f2.1)	(4f2.2)	(4f2.3)
MUS	0.00567*	0.00879	0.0514***	-0.000195				
	(0.00340)	(0.00689)	(0.0134)	(0.00171)				
BUS					0.0316**	0.0570	0.0420***	-0.0211
					(0.0130)	(0.0350)	(0.0134)	(0.0429)
TOUR	0.00246***	0.0482***	0.00203***	0.000718	-0.00189	0.00349	-0.00366**	0.0407***
	(0.000775)	(0.0103)	(0.000327)	(0.00610)	(0.00175)	(0.0107)	(0.00176)	(0.0151)
Cons	0.123***	-0.358	-0.359**	1.351***	0.0851***	0.905***	0.340***	0.0981
	(0.00644)	(0.487)	(0.178)	(0.0514)	(0.0200)	(0.321)	(0.0589)	(0.0761)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	163	114	101	360	97	115	148
R^2	0.471	0.346	0.603	0.620	0.548	0.573	0.261	0.663

The *MUS* indicator is marginally statistically significant with a positive sign for the entire sample. However, it is strongly statistically significant only in the second cluster, which includes regions mainly from northeastern France, Slovenia, Croatia, and Greece. Regarding the *BUS* indicator, it is statistically significant for the overall sample without regimes and for the second cluster, which predominantly consists of regions in France, Slovenia, and continental Croatia.

The focus of the spatial regimes analysis shifts to the recovery phase of 2022, starting with the estimation of clusters for UNESCO cultural heritage indicators, *WHS* and *ICH*.

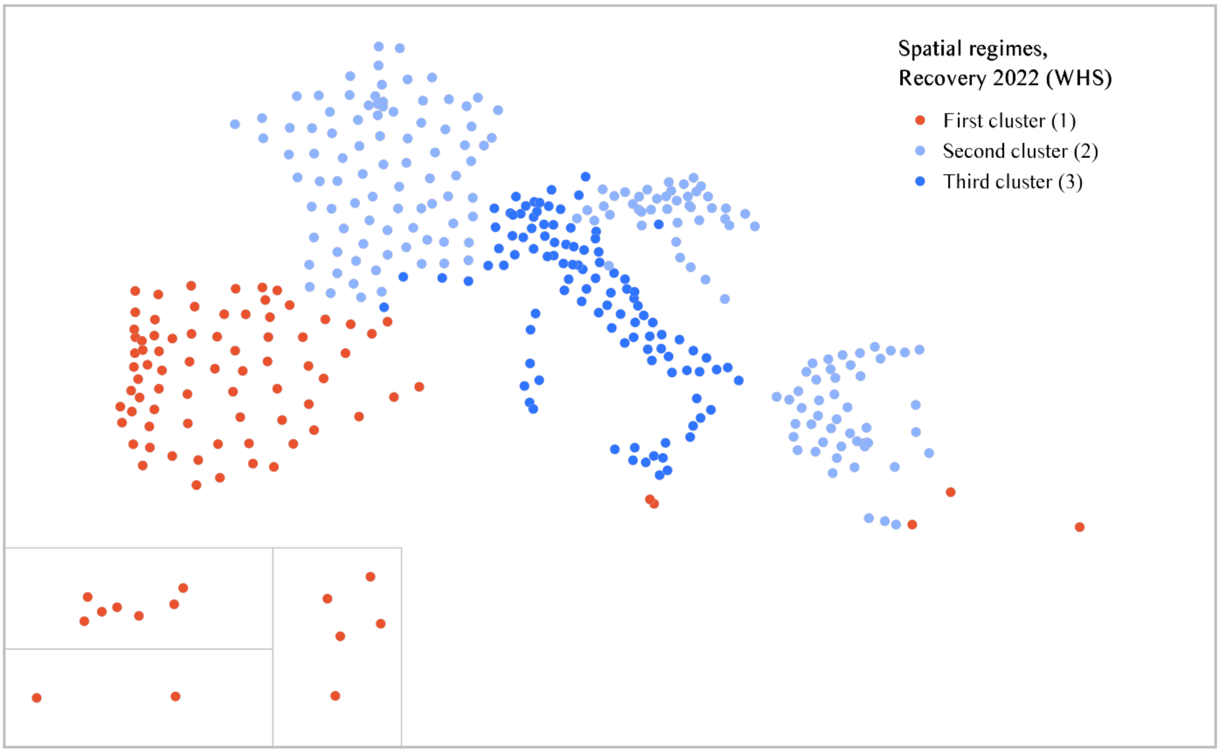

Figure 30. Estimated clusters (spatial regimes): WHS in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

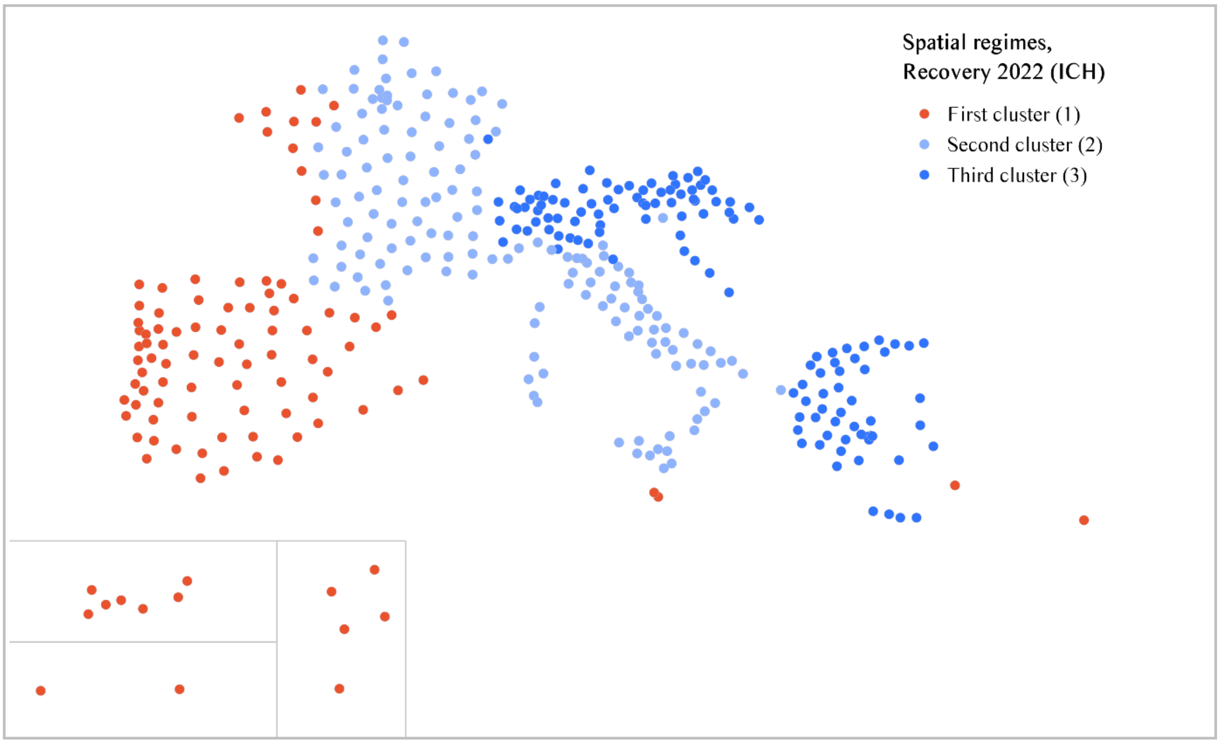

Figure 31. Estimated clusters (spatial regimes): ICH in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Following this, Table 45 provides the OLS estimates for the UNESCO cultural heritage indicators (*WHS* and *ICH*) across both scenarios: without regimes and with regimes.

Table 45. Spatial Regimes Analysis: WHS and ICH in the Recovery Phase (2022)

	(4a3)	(4a3.1)	(4a3.2)	(4a3.3)	(4b3)	(4b3.1)	(4b3.2)	(4b3.3)
WHS	0.0712**	0.0505	0.0815**	0.0122				
	(0.0334)	(0.0670)	(0.0365)	(0.0494)				
ICH					0.00588**	0.00321***	-0.00457	0.0206***
					(0.00280)	(0.00116)	(0.00787)	(0.00534)
TOUR	0.00112***	0.0216***	0.000903***	-0.000530	0.00116***	0.0218***	0.000766***	0.00292
	(0.000354)	(0.00459)	(0.000135)	(0.00345)	(0.000369)	(0.00481)	(0.0000770)	(0.00324)
Cons	0.126***	0.0943***	0.180***	0.735***	0.146***	0.877***	0.737***	-0.512***
	(0.0115)	(0.0268)	(0.0407)	(0.0147)	(0.00238)	(0.0441)	(0.0140)	(0.0305)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	92	182	104	378	102	151	125
R^2	0.814	0.801	0.865	0.520	0.813	0.774	0.551	0.856

The table shows that *WHS* and *ICH* have positive signs and are statistically significant in the scenario without regimes. When regimes are considered, *WHS* is only statistically significant in the second cluster, the largest one with 182 regions, encompassing NUTS 3 regions predominantly in France, Slovenia, Croatia, and Greece. For the *ICH* indicator, the first and third clusters retain the positive sign and significance. The first cluster consists mainly of regions in Portugal and Spain, Malta, and Cyprus, whereas the third cluster includes regions primarily in Greece, Slovenia, Croatia, and northern Italy.

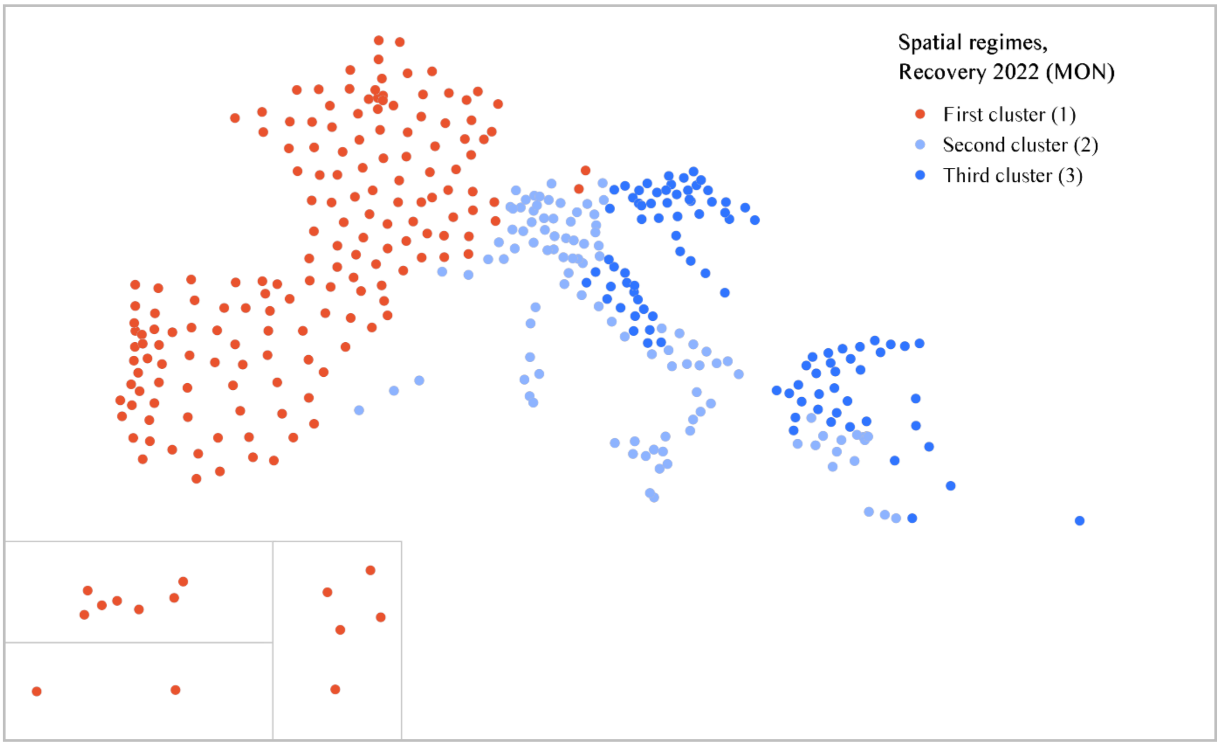

Figure 32. Estimated clusters (spatial regimes): MON in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

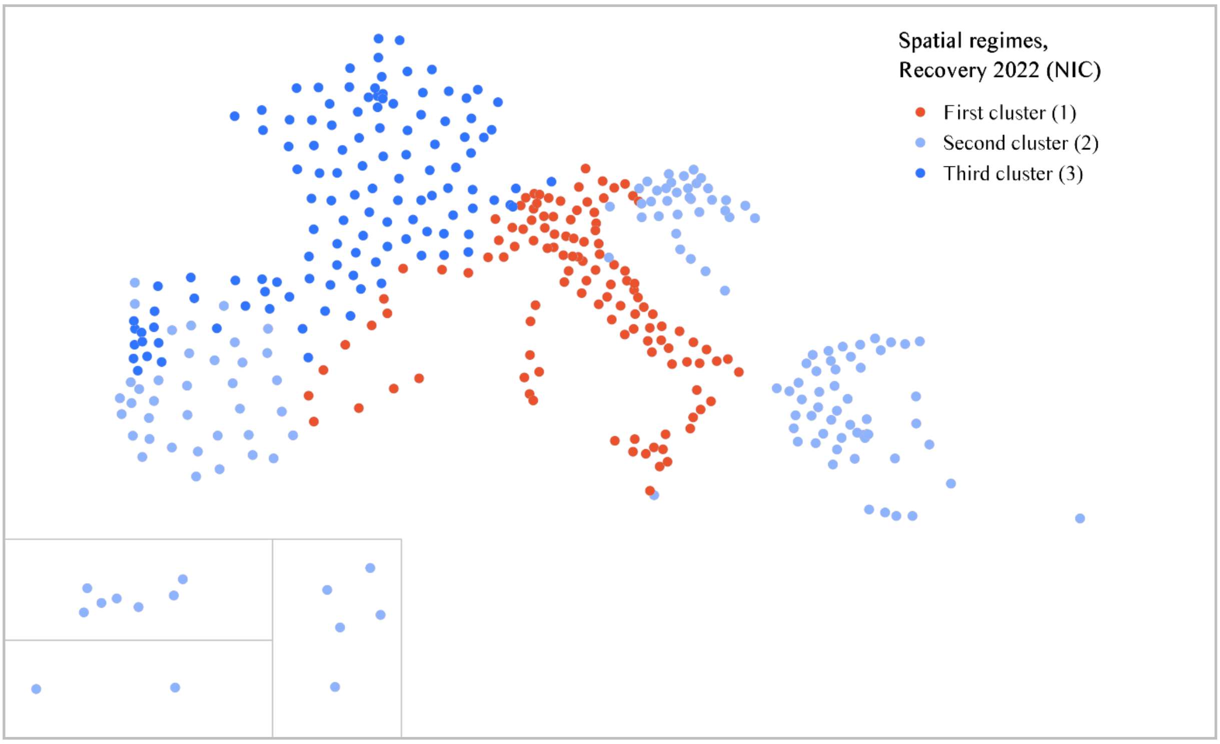

Figure 33. Estimated clusters (spatial regimes): NIC in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

In previous Figures 32 and 33, the estimation of clusters for the MON and NIC indicators is illustrated, while the OLS estimates can be found in Table 46.

Table 46. Spatial Regimes Analysis: MON and NIC in the Recovery Phase (2022)

	(4c3)	(4c3.1)	(4c3.2)	(4c3.3)	(4d3)	(4d3.1)	(4d3.2)	(4d3.3)
MON	0.00029***	-0.000026	0.00018***	0.00022***				
	(0.000065)	(0.00017)	(0.000067)	(0.00008)				
NIC					0.00172**	0.00798**	0.00196**	-0.00741
					(0.00084)	(0.00353)	(0.00087)	(0.00463)
TOUR	0.00113***	0.000932***	0.000580	0.0184**	0.00113***	0.0223***	0.00727	0.00079***
	(0.000363)	(0.000143)	(0.00220)	(0.00780)	(0.00037)	(0.00536)	(0.00655)	(0.000061)
Cons	0.106***	0.0276	0.524***	0.0722	0.141***	0.0647	0.129***	-0.00369
	(0.0101)	(0.0204)	(0.0882)	(0.0597)	(0.00448)	(0.166)	(0.0132)	(0.0108)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	179	106	93	378	117	140	121
R^2	0.825	0.661	0.893	0.846	0.813	0.725	0.776	0.531

In the whole sample without regimes, both national cultural heritage indicators, *MON* and *NIC*, are statistically significant with positive signs. Upon analyzing regimes, it is observed that the *MON* indicator retains its positive sign and significance in the second and third spatial regimes, covering regions in Italy, Slovenia, Croatia, Greece, Malta, and Cyprus. The *NIC* indicator shows positive significance in the first and second clusters, which include NUTS 3 regions from Croatia, Greece, Cyprus, Italy, and a substantial part of regions in Spain and Portugal.

Next, the analysis proceeds to estimate clusters for the *MUS* and *BUS* indicators.

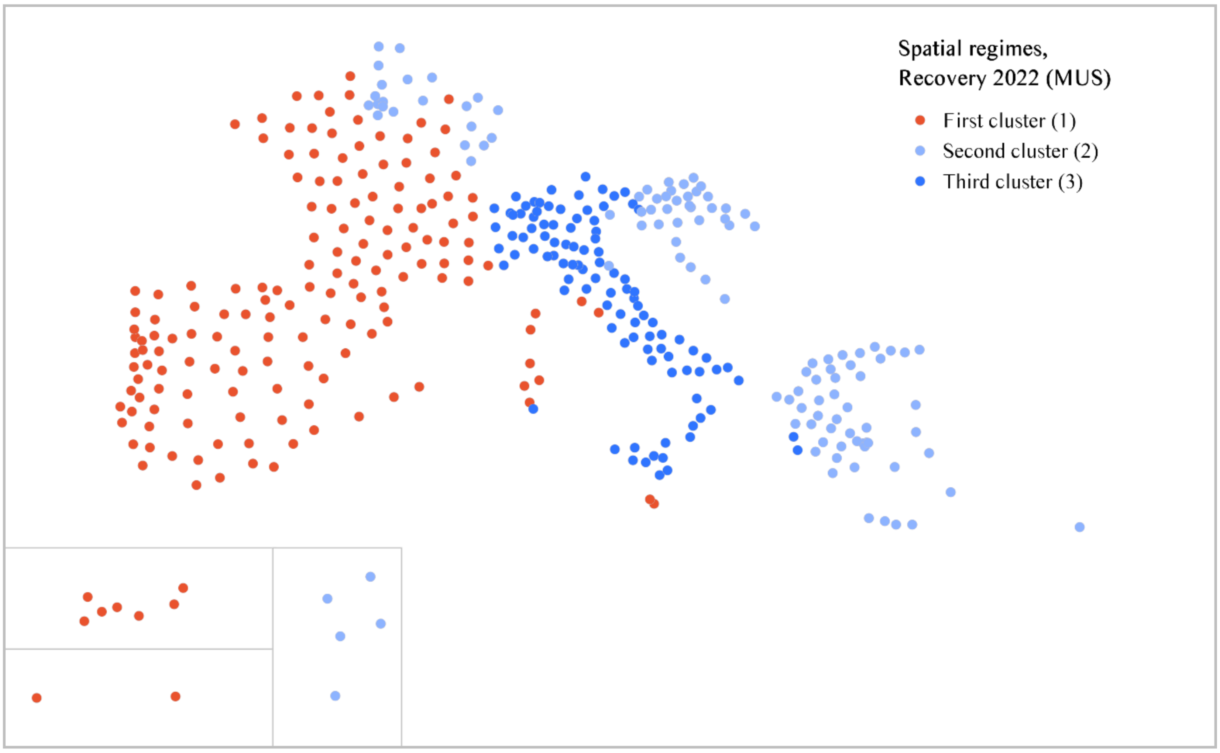

Figure 34. Estimated clusters (spatial regimes): MUS in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

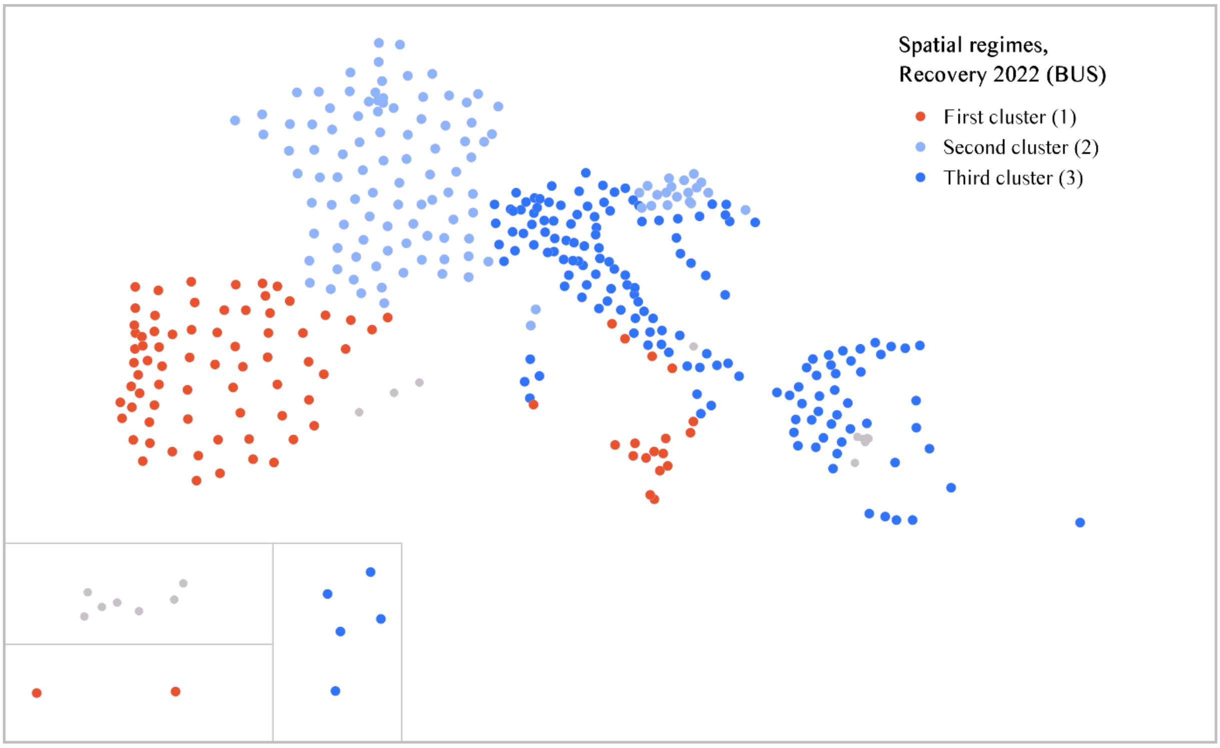

Figure 35. Estimated clusters (spatial regimes): BUS in the Recovery (2022) Phase
Source: Spatial Regimes web app and Eurostat's GISCO

Finally, the corresponding OLS estimates are provided in Table 47.

	(4e3)	(4e3.1)	(4e3.2)	(4e3.3)	(4f3)	(4f3.1)	(4f3.2)	(4f3.3)
MUS	0.00275*	0.00413	0.0249***	-0.000089				
	(0.00163)	(0.00323)	(0.00646)	(0.000785)				
BUS					0.0143**	0.0256	0.0192***	-0.00839
					(0.00591)	(0.0167)	(0.00607)	(0.0199)
TOUR	0.00113***	0.0227***	0.000918***	0.000331	-0.000847	0.00185	-0.00168**	0.0197***
	(0.000367)	(0.00485)	(0.000153)	(0.00280)	(0.000799)	(0.00519)	(0.000793)	(0.00727)
Cons	0.145***	0.0295	-0.204**	1.002***	0.129***	0.620***	0.400***	0.130***
	(0.00308)	(0.230)	(0.0861)	(0.0236)	(0.00908)	(0.155)	(0.0269)	(0.0352)
CntryDum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	163	114	101	360	90	115	155
R^2	0.811	0.698	0.861	0.820	0.840	0.774	0.650	0.894

In the entire sample without regimes, MUS is significant at the 10% level. It is also strongly significant in the second spatial regime, which covers northeastern France, Croatia, Slovenia, Greece, and Cyprus. The BUS indicator is statistically significant for the entire sample and for the second regime, which, in this case, consists of regions from France, Slovenia, and the continental part of Croatia.

5.2.3. Conclusion on Research Hypothesis Three (H3)

Finally, the decision on **H3**, which hypothesizes that the relationship between cultural tourism and economic resilience exhibits spatial heterogeneity across the regions under study based on the region's type, remains.

Here, "region’s type" is defined in two ways: i) as defined a priori by Eurostat's territorial typologies (2019); and ii) according to spatial regimes analysis. OLS estimates are then run for each subsample. It is important to highlight that the aim of this hypothesis is not to delve deeply into the characteristics of each region's type but to primarily identify if there exists heterogeneity in the relationship between regional economic resilience and cultural tourism.

In the following tables, a "✓" denotes statistical significance in line with the expected sign. A dark blue color indicates significance at the 5% level or better, while a lighter blue color indicates marginal significance at the 10% level. On the contrary, an "✗" signifies that the indicator was not statistically significant during hypothesis testing.

An overview is first given for the subsamples classified according to Eurostat’s Territorial Typologies (2019), namely coastal, mountain, urban, and rural region types, as detailed in Table 47.

Table 47. Hypothesis Three (H3) Conclusion Analysis: Eurostat's Territorial Typologies

Model	WHS	ICH	MON	NIC	MUS	BUS
H3: Resistance phase, expected sign (-)						
Coastal	✗	✗	✓	✗	✓	✗
Mountain	✗	✓	✓	✓	✗	✗
Urban	✓	✓	✓	✓	✓	✗
Rural	✗	✓	✗	✓	✗	✗
H3: Recovery phase (2021), expected sign (+)						
Coastal	✓	✓	✓	✓	✓	✓
Mountain	✗	✗	✓	✗	✗	✓
Urban	✓	✗	✓	✗	✓	✓
Rural	✗	✓	✗	✓	✗	✗
H3: Recovery phase (2022), expected sign (+)						
Coastal	✓	✓	✓	✓	✓	✓
Mountain	✗	✗	✓	✗	✗	✓
Urban	✓	✗	✓	✗	✓	✓
Rural	✗	✓	✗	✓	✗	✗

The evidence indicates significant spatial heterogeneity in the relationship between cultural tourism and economic resilience. During the resistance phase, it is noticeable that urban regions were most affected, with all indicators of cultural resources (*WHS*, *ICH*, *MON*, *NIC*) and infrastructure (*MUS*) being significant. In coastal regions, only nationally protected monuments (*MON*) were significant at the 5% level. In mountain and rural regions, the importance of intangible cultural heritage indicators (*ICH*, *NIC*) was highlighted, as they were significant and negatively associated with resilience in these regions during the resistance phase. For mountain regions, MON was also significant. Interestingly, the cultural business indicator (BUS) showed no significance in any of the cases.

The recovery phases in 2021 and 2022, which showed consistent results, further emphasize the spatial heterogeneity in the role of cultural tourism in regional economic resilience. For coastal regions, all cultural tourism indicators were significant, without exception (*WHS*, *ICH*, *MON*, *NIC*, *MUS*, *BUS*), for short-term recovery. In the recovery of rural regions, intangible cultural heritage indicators were of utmost importance. Conversely, in urban regions, the economic recovery was primarily driven by national physical cultural resources, such as nationally protected monuments (*MON*), museums (*MUS*), and cultural businesses (*BUS*). In mountain regions, the recovery was mostly associated with national monuments (*MON*) and cultural businesses (*BUS*).

The analysis now shifts to an overview of the spatial regimes OLS estimates. As previously explained, the spatial regimes analysis was conducted with specific parameters: the desired number of estimated clusters was set at $k = 3$, and the minimum criterion for a group (spatial regime) was to include at least 90 regions. It is important to note that the estimated spatial regimes (clusters) are not comparable because they differ each time depending on the combination of dependent and independent variables. The results are presented in Table 48.

Table 48. Hypothesis Three (H3) Conclusion Analysis: Spatial Regimes Analysis

Model	WHS	ICH	MON	NIC	MUS	BUS
H3: Resistance phase, expected sign (-)						
Without Regimes	✗	✓	✓	✓	✗	✗
Estimated Cluster 1	✗	✓	✗	✗	✗	✓
Estimated Cluster 2	✗	✗	✓	✓	✓	✗
Estimated Cluster 3	✗	✗	-	✗	✓	-
H3: Recovery phase (2021), expected sign (+)						
Without Regimes	✓	✓	✓	✓	✓	✓
Estimated Cluster 1	✗	✓	✗	✓	✗	✗
Estimated Cluster 2	✗	✗	✓	✓	✓	✓
Estimated Cluster 3	✓	✓	✓	✗	✗	✗
H3: Recovery phase (2022), expected sign (+)						
Without Regimes	✓	✓	✓	✓	✓	✓
Estimated Cluster 1	✗	✓	✗	✓	✗	✗
Estimated Cluster 2	✓	✗	✓	✓	✓	✓
Estimated Cluster 3	✗	✓	✓	✗	✗	✗

The results from the spatial regimes analysis also demonstrate significant spatial heterogeneity. Different clusters exhibit varying impacts of cultural tourism on economic resilience, confirming that the relationship is not uniform across regions.

Finally, based on the analysis of both predetermined subsamples using Eurostat's territorial typologies and derived spatial regimes, **the evidence supports hypothesis H3 that the relationship between cultural tourism and economic resilience demonstrates spatial heterogeneity across the regions under study with respect to the region's tourism type.** The results clearly indicate that the impact of cultural tourism on economic resilience varies significantly across different types of regions and spatial clusters.

6. CONCLUDING REMARKS

In this section, concluding remarks are presented, starting with a discussion and synthesis of the main findings. The academic and practical contributions, along with policy implications, are then outlined. The section also includes research limitations and suggestions for future research before concluding the thesis.

6.1. Discussion and Synthesis of Main Findings

Foremost, this research confirmed through regression analysis, by testing various model specifications, that cultural tourism, as represented by various indicators such as tangible assets (World Heritage Sites, national monuments), intangible assets (UNESCO's and national intangible cultural heritage lists), as well as museums and cultural businesses, plays a significant role in shaping regional economic resilience during both the resistance and recovery phases of the shock caused by the COVID-19 pandemic. This finding reaffirms the conclusions of the only two prior studies known to the author that quantitatively investigated the impact of cultural tourism on regional economic resilience, albeit in the context of the 2008 financial economic crisis: the pilot research by Petrić et al. (2021) within the Horizon 2020 SmartCulTour project, which focused on 35 European local administrative units, and the study conducted by Muštra, Škrabić Perić et al. (2023) on European NUTS 2 regions.

The impact of cultural tourism on regional economic resilience is phase-specific, showing negative results during the resistance phase and positive impacts during the recovery phase. Although the results for the resistance phase are not as consistently robust as those for the recovery phase, they clearly indicate that, overall, cultural tourism tends to negatively affect economic resilience during the resistance phase. This aligns with the observations of Richards and Fernandes (2023) that at the onset of the COVID-19 pandemic in March 2020, cultural tourism, along with other sectors of the tourism industries and the cultural sector as a whole, was shut down. As elaborated by Bălan et al. (2021), pandemic-related measures taken by countries to reduce the risk of virus spread led to the closure of museums, cultural institutions, World Heritage sites, and other historical monuments, depriving them of significant income. They report that at the peak of the global lockdown, 90% of World Heritage sites and museums implemented total or partial closures. Additionally, Roigé et al. (2021) state that the pandemic-induced shock caused major alterations to intangible cultural festivities and practices, disrupting community relations by limiting events that serve as mechanisms for integration and social cohesion. The lost revenues from tourism in general and culture in particular severely affected communities, heritage sites, cultural events, spaces, and institutions, while weakening the competitiveness of destinations.

Among the tested cultural tourism indicators, national monuments were the only indicator that showed a consistently robust negative impact on economic resilience during the resistance phase. Several factors could explain this observation, in addition to the noted vulnerability of nationally protected cultural heritage sites during times of economic crisis (Aitchison, 2014).

Firstly, during the COVID-19 crisis, virtual reality technology was harnessed to enable virtual tourism at cultural heritage sites. Cultural institutions worldwide utilized digital platforms to provide online exhibitions, remote access simulations, and virtual tours, thus mitigating some of the pandemic's negative impacts (Sofer et al., 2023). This adaptation was predominantly seen with renowned World Heritage sites (Van der Zee et al., 2024), as exemplified by UNESCO's #ShareOurHeritage campaign, and museums (Giannini & Bowen, 2022; Ginzarly & Jordan Srour, 2022). Additionally, Roigé et al. (2021) observed that the lockdown led to creativity and reinvention, resulting in new forms of intangible cultural heritage for festivals and rituals, both face-to-face and virtual. Secondly, during the implementation of lockdown measures and social distancing, Nientied and Shutina (2020) noted that spatially fixed attractions, including World Heritage sites and museums, were more easily managed by tourism providers than open-access areas like old city centers, public squares, and monuments. Thirdly, national monuments are more closely associated with national or regional approaches to cultural heritage and local communities (E. Panzera et al., 2021), making them especially relevant for domestic tourism, which is typically less vulnerable during shocks (Boto-García & Mayor, 2022). During the COVID-19 pandemic, however, tourist behavior shifted towards a preference for rural and natural attractions rather than cultural tourism (Wallace et al., 2023). This shift, coupled with the vulnerability of cultural heritage, likely made national monuments particularly vulnerable.

On the other hand, during the recovery phases of 2021 and 2022, cultural tourism indicators consistently showed a positive impact on economic resilience, highlighting the sector's critical role in economic recovery and growth post-crisis. This is in line with the well-documented literature on the positive economic effects of cultural tourism, often seen as the interaction of cultural heritage and tourism demand, serving as a valuable resource for the regional economy

(Falk & Hagsten, 2022; Muštra, Škrabić Perić, et al., 2023; Rizzo & Throsby, 2006; Russo & van der Borg, 2002).

Cultural tourism involves engaging with both tangible elements like UNESCO sites and national monuments and intangible heritage, leading to increased tourism demand (García del Hoyo & Jiménez de Madariaga, 2024; Herrero-Prieto & Gómez-Vega, 2017). This interaction is a key driver of economic benefits through the tourism-led local income growth channel (Bertacchini et al., 2024). The economic benefits derived from cultural heritage tourism, both directly and indirectly, contribute significantly to regional economies, enhancing their recovery after a crisis (Allam & Jones, 2019; Wardekker et al., 2023). Hence, the potential of cultural tourism activities to bolster resilience at the regional level is evident, serving as a fail-safe mechanism for economic recovery following major shocks (Pascariu, Ibănescu, et al., 2021; Suzuki et al., 2021).

Among the various types of heritage listings, the UNESCO World Heritage designation, which focuses on internationally recognized tangible material heritage, is central to discussions on the economic impact of cultural heritage (Arezki et al., 2009; Canale et al., 2019; Cuccia et al., 2016; Koufodontis & Gaki, 2022; Markman, 2020; Pivčević et al., 2024; Van der Zee et al., 2024; VanBlarcom & Kayahan, 2011). However, the literature also acknowledges the economic significance of intangible cultural heritage elements (Bak et al., 2019; Cominelli & Greffe, 2012; Petronela, 2016; Tan et al., 2023), as well as heritage resources of national, regional, and local importance (Alexandrakis et al., 2019; García del Hoyo & Jiménez de Madariaga, 2024; Kuliš, 2023; Kvítková & Petru, 2023; E. Panzera, 2022; Snowball, 2013). That is particularly relevant in the context of the present research, where the economic significance of all types of cultural heritage was confirmed. Specifically, World Heritage sites, elements inscribed on the UNESCO intangible cultural heritage lists, monuments, and intangible cultural heritage elements on national lists demonstrated robustly significant and positive effects on economic resilience during the short-term recovery phase.

Furthermore, according to Ashworth (2014), cultural heritage can serve as a direct resource input for many commercial heritage industries. It provides resources for economic enterprises producing heritage products, enhancing the tourist experience in a more creative manner and often forming part of a wider array of creative cultural industries, thereby extending cultural tourism into more creative tourism forms (Carvalho et al., 2019; Virginija, 2016). As Ashworth (2014) further explains, these industries feature unique geographical production locations, industrial structures, employment trends, and inter-firm networks. The economic impacts of stimulated entrepreneurial activity through cultural and creative industries are evident through several market structure indicators, such as the number of enterprises, production volume, revenues, added value contribution to GDP, and employment levels, as well as salaries paid to employees (Pacelli & Sica, 2020).

Also, cultural heritage cultivates a dynamic and engaging cultural environment that appeals to a creative class, fueled by tolerance, openness, and opportunities for education and social interaction, leading to "creative inputs" (Russo & van der Borg, 2006). Creativity is often examined in relation to its connection with the cultural heritage of locations and their economic development (Capello et al., 2020; Cerisola, 2019a). In addition, cultural and creative industries enhance regional innovation and productivity by introducing new products, production techniques, processes, and business models. They also alter consumption habits, and their high level of innovation stimulates the innovative capacity of other sectors through supply-chain mechanisms (Dellisanti, 2023b). Given the preceding arguments, it is not unexpected that this study confirmed the robust impact of cultural and creative industries on regional economic resilience during the recovery phase. As Cellini and Cuccia (2019) observe, the unique structure of cultural industries, which includes self-employed individuals, small and micro enterprises, and a high turnover rate of cultural enterprises, along with the intersectoral benefits of cultural activities, accounts for the sector's ability to enhance regional resilience.

Beyond the well-known ways through which cultural heritage and tourism results in economic benefits that lead to positive growth trajectories, other channels also contribute (Kostakis & Lolos, 2024). Cultural heritage and tourism stimulate investments (Bowitz & Ibenholt, 2009), boost foreign trade (Pacelli & Sica, 2020), and support the revitalization of urban and rural areas (Baycan & Girard, 2011). It is important to note that the economic impacts of cultural tourism extend beyond direct effects to include indirect and induced ones (Zadel & Bogdan, 2013).

The only variable in the recovery phases that yielded non-robust results was museums. While it was statistically significant in augmented models, it was not significant in baseline models. This indicates that museums contribute to economic resilience when viewed within a wider array of influencing factors and a broader socioeconomic context, highlighting their complementary role in regional economic recovery. This observation is in line with Cellini and

Cuccia's (2019) conclusion that museums by themselves are not expected to deliver resilience outcomes, but can do so when additional factors are considered.

Beyond highlighting the role of cultural tourism in regional economic resilience, this thesis provides additional valuable insights. Empirical analysis confirmed the hypothesis that spatial dependencies significantly influence the relationship between cultural tourism and economic resilience. Evidence robustly supported this hypothesis, as significant spatial autocorrelation was observed in the residuals of OLS models, and spatial lag terms were significant in SDEM models. Furthermore, AIC comparison indicated that models incorporating spatial dependencies offered a better fit. This aligns with Sutton and Sutton (2024), who emphasize that accounting for spatial interactions provides a more accurate representation of regional economic resilience.

Interestingly, the spatial regression models confirmed direct impacts of cultural tourism indicators on regional economic resilience but not indirect, spillover effects. This is in line with the assertion by Camagni et al. (2020) that cultural heritage is a key component of "territorial capital," encompassing the local assets that define a region's endogenous potential. Essentially, it is part of the intrinsic qualities and resources that influence a region's developmental trajectory (Morretta, 2021; Orsi et al., 2024).

Additionally, this thesis provides insights into how the relationship between cultural tourism and economic resilience varies across different types of regions, demonstrating spatial heterogeneity. Analysis using Eurostat's territorial typologies revealed distinct patterns across coastal, mountain, urban, and rural regions. This finding corroborates Sutton and Sutton (2024), who note that due to the varied nature of regional economies, distinct regions are likely to be impacted by different determinants.

The findings indicated that cultural tourism made urban regions the most vulnerable, which is unsurprising given that many cultural tourist venues are located in cities and had to close along with other tourism-related facilities when the COVID-19 pandemic began (Wallace et al., 2023). Interestingly, during the recovery resilience phase, the analysis showed that material cultural assets, such as World Heritage sites, national heritage monuments and museums, along with cultural industries, were most significant. In contrast, intangible cultural heritage assets were of utmost importance for rural and mountain regions. These results, while compelling, align with expectations.

To elaborate on this point, Richards (2022) notes that urban centers are often built upon layers of diverse cultures and their tangible heritage. Museums and monuments, which preserve the traces of previous generations and societal history, frequently dominate urban tourism consumption. The traditional focus of cultural tourism in cities has been on built heritage and physical legacies, with a growing emphasis on intangible heritage only recently. In addition, according to UNESCO's Urban Heritage Atlas (2024b), more than 70% of World Heritage cultural heritage sites are located in urban areas. The significant role of cultural industries in stimulating regional economic resilience during the recovery phase in urban regions aligns with Kourtit and Nijkamp's (2019) assertion that material cultural heritage assets, cultural amenities, and historical monuments in cities act as pull factors for the local creative economy.

In contrast, rural and mountain regions, unlike urban areas, are not as endowed with material cultural assets. Instead, they are renowned for their rich intangible cultural heritage, which includes traditions, festivals, and local crafts integral to the cultural identity of these communities (Pola, 2019; Su et al., 2019). This intangible heritage in rural areas is recognized for its potential to enhance the economic performance of tourism industries (Starčević et al., 2022) and promote sustainable rural development through the creation of economic value (Shakya & Vagnarelli, 2024). The resilience of coastal regions was significantly influenced by all cultural tourism indicators, particularly during the recovery phase, confirming the economic importance of cultural tourism and heritage in these regions (Cisneros-Martínez & Fernández-Morales, 2015; Delaney & Frangoudes, 2024; Lacher et al., 2013; Severin & Michaliková, 2022).

Besides analyzing spatial heterogeneity through predetermined typologies, this study employed a spatial regimes approach (Vidoli et al., 2022) using data on regional economic resilience as the dependent variable and cultural tourism indicators as independent variables. Regions were grouped into clusters with analogous attributes, ensuring functional homogeneity within clusters and heterogeneity between them. For each combination of dependent and independent variables, different distributions of regions across regimes were identified, which served the primary goal of identifying spatial heterogeneity. As a loosely observed trend across the majority of models, cultural tourism indicators proved to be significant in most cases across regions of Croatia and Greece, thus affirming the economic importance of cultural heritage and tourism in these regions (Kostakis et al., 2020; Kostakis & Lolos, 2024; Kuliš, 2023; Šimundić et al., 2022).

Lastly, although not explicitly part of the primary research objectives of this thesis, several control variables were integrated into the augmented models during the empirical analysis to gain a more precise understanding of the relationship between regional economic resilience and cultural tourism. This section provides a brief review of the outcomes of these variables in relation to regional economic resilience. During the resistance phase of regional economic resilience, the sectoral diversity measured by *HHI* showed the strongest significance and robustness. Regions with lower *HHI* values demonstrated greater resilience during the COVID-19 shock, suggesting that economic diversification played a crucial role in mitigating the impact of the shock. This finding aligns with the expectations of Diodato and Weterings (2015), who posited that regions with a more diversified sectoral portfolio are less sensitive to economic shocks as the risk is distributed across various sectors.

Furthermore, in certain models, the significance of the stringency index is evident as it negatively correlates with regional resilience during the resistance phase, aligning with Alfano et al. (2022), who found that stringent measures are negatively correlated with short-term economic outcomes. Additionally, there are instances where the negative relationship between regional economic resilience during the resistance phase and pre-crisis regional development levels is confirmed, supporting the observations of Muštra, Škrabić Perić et al. (2023) that higher GDP levels may lead to greater exposure to international markets and macroeconomic factors, amplifying the transmission of imbalances into regional economies. In some cases, the negative impact of tourism dependency on regional resilience is also significant, confirming the vulnerability of regions heavily reliant on tourism during the COVID-19 shock (Duro et al., 2021).

Conversely, the recovery phase reveals a positive association between regional economic resilience and tourism demand, demonstrating the crucial role of tourism dynamics in regional economic recovery and confirming the presence of tourism-induced economic resilience (Ibanescu et al., 2023; Neuts et al., 2023; Petrić et al., 2021). Remarkably, tourism demand stands out as the only variable showing indirect spillover effects, meaning that the tourism demand from nearby regions boosts regional economic recovery (De Siano & Canale, 2022, 2024; Yang & Fik, 2014). This conclusion is based on an analysis that employed a weight matrix focusing on the closest neighbor's influence. Although robustness checks with weight matrices incorporating more neighbors largely corroborated the analysis findings, the spillover effects of tourism demand were absent in this particular analysis. This observation is in line with LeSage's (2014b) perspective on the dominance of local spillover effects in regional science.

The EQI index is positively associated with regional resilience during the recovery phase, confirming that higher quality of government is linked to greater regional resilience (Ezcurra & Rios, 2019; Rios & Gianmoena, 2020). Unlike in the resistance phase, HHI is positively correlated with the recovery phase, aligning with the assertion that economic specialization exerts regional recovery (Artelaris et al., 2024; Sánchez & Cuadrado-Roura, 2024). Improved transport performance aids regions in recovering from shocks, consistent with expected outcomes (Chacon-Hurtado, Kumar, et al., 2020). Finally, a higher level of stringency index is associated with lower levels of recovery, corroborating various scientific studies that have shown regions subjected to stringent containment measures for extended periods have been the hardest hit socially and economically (Bourdin, Cottereau, et al., 2023).

6.2. Academic and Practical Contributions with Policy Implications

This research has several academic contributions. To start with, it offers a comprehensive literature review on the interplay between cultural tourism and regional economic resilience. Most importantly, this is the first research that investigates the role of cultural tourism in shaping regional economic resilience in the context of the COVID-19 shock, adapting to the phase-specific context by separately investigating the role of cultural tourism during the phases of economic resistance and economic recovery. Furthermore, the study employs a comprehensive set of cultural tourism indicators (including tangible and intangible cultural heritage, UNESCO and national lists, museums, and cultural industries), recently defined for the purposes of the implementation of the SmartCulTour project (Petrić et al., 2020, 2021). This approach avoids the pitfall of relying only on unidimensional indicators like World Heritage Sites (Muštra, Škrabić Perić, et al., 2023) or solely on tangible assets (E. Panzera, 2022), thus addressing the suggested research gaps. The contribution is particularly evident in the author's regional mapping of intangible cultural heritage indicators sourced from UNESCO, as well as in the creation of both tangible and intangible cultural heritage indicators sourced from various national cultural registers.

Moreover, the research is conducted on a refined spatial scale unit of analysis, the NUTS 3 region, for a sample of 378 South-European EU regions across nine countries. Only two previous studies specifically oriented towards the relationship between cultural tourism and regional economic resilience were conducted on different scales. Pilot research by Petrić et al. (2021) was performed on a small sample of only 35 local administrative units, while a cross-country study by Muštra, Škrabić Perić et al. (2023) was conducted at the NUTS 2 level. This distinction is important as Romão (Romão, 2015, 2020a) noted that while research on the NUTS 2 level has significance because NUTS 2 regions are usually institutionally coherent within the European space, and although they are comprised of different governance bodies, interventions occur at the same spatial scale (e.g., innovation policies, socio-economic development strategies, cultural promotion, etc.), a more detailed analysis using NUTS 3 regions, which are small regions for specific diagnoses, is preferable.

In addition to conducting research on the entire sample of 378 regions, the study captured spatial heterogeneity in the relationship between cultural tourism and regional economic resilience by testing model specifications on various subsamples. These subsamples were: i) predefined clusters based on Eurostat's Territorial Typologies, such as coastal, mountain, urban, and rural regions, and ii) clusters originally derived from research data and the application of the spatial regimes approach (Vidoli et al., 2022). Alongside the phase-specific investigation of regional economic resilience and cultural tourism, capturing spatial heterogeneity underscores the importance of adopting tailored strategies for leveraging cultural tourism to enhance economic resilience in different regional contexts.

Furthermore, in this thesis, spatial econometrics is applied to capture spatial dependencies in the relationship between cultural tourism and regional economic resilience, thus filling another research gap suggested by Muštra, Škrabić Perić et al. (2023). This is also important in general regional economic resilience research, as the application of spatial econometrics, which adds significant value to the analysis, is largely omitted (De Siano et al., 2020; Sutton & Sutton, 2024). Finally, in terms of academic contributions, it is worth noting that this research, through the application of spatial econometrics to examine the relationship between cultural tourism and regional economic resilience, represents a rare type of study. This makes it a unique investigation at the intersection of applied quantitative methods, regional economic resilience, and the economic aspects of cultural heritage and tourism, thereby filling the generally observed gaps in the fields of regional science, cultural economics, and tourism economics, which often lack such types of research (Calero & Turner, 2020; Dalle Nogare & Devesa, 2023; Falk & Hagsten, 2022; Jang & Kim, 2022; D. S. Noonan & Rizzo, 2017; Richards, 2018; Romão & Nijkamp, 2018).

In addition to its academic contributions, this thesis provides several practical insights and policy implications that can guide regional planning and policymaking to enhance economic resilience through cultural tourism. Primarily, the direct effects of cultural tourism in shaping regional economic resilience are confirmed. This suggests that cultural tourism, through the synergy of cultural heritage and tourism, is a fundamental part of territorial capital. It has the potential to leverage a region's endogenous strengths, harnessing its local assets to enhance regional economic resilience (Camagni et al., 2020; Orsi et al., 2024)

It is important for policymakers to understand that the impact of cultural tourism on regional economic resilience is dependent on both the phase and spatial context. This is important, as Srhoj et al. (2022) caution that misguided tourism policies can lead to adverse macroeconomic outcomes. During the resistance phase, negative effects, especially those associated with national monuments in urban regions, suggest the need for adaptive strategies to mitigate the effects of exogenous shocks. UNESCO (2022b) in its report "Culture in Times of COVID-19: Resilience, Recovery, and Revival," provides examples of such strategies, including building evidence-based support for the culture sector's recovery, fostering collaboration and solidarity within the cultural ecosystem, accelerating the adoption of digital practices, and adapting strategic, operational, and business practices across the value chain.

Conversely, the recovery phases of 2021 and 2022 demonstrated that cultural tourism positively influences economic resilience. Therefore, during recovery phases, cultural tourism should be actively promoted. Governments and regional authorities should engage all cultural heritage resources, including tangible elements such as UNESCO sites and national monuments, as well as intangible heritage and museums. These resources serve as pull factors for cultural industries and the broader local creative economy, stimulating economic activities and tourism demand. Consequently, this drives local income growth through increased consumption, underscoring the sector's potential to drive economic recovery and serve as a fail-safe mechanism for economic rebound following major shocks (Bertacchini et al., 2024; Kourtit & Nijkamp, 2019; Muštra, Šimundić, et al., 2023; Pascariu, Ibănescu, et al., 2021). However, policymakers should bear in mind that there are cluster-specific characteristics. For example, while all types of cultural tourism resources are generally relevant to any region, they are particularly important in coastal regions. Urban regions place more emphasis on physical assets and cultural industries, whereas in rural and mountain regions, intangible cultural assets are most beneficial in driving economic resilience.

Furthermore, the results reaffirm the importance of integrating cultural tourism into various policy documents and strategies. For instance, UNESCO (2018) emphasizes that, through the 2030 Agenda for Sustainable Development, the international community has recognized for the first time the crucial role of culture as an enabler of development. Culture is included in Sustainable Development Goal 11, which calls on the international community to "Strengthen efforts to protect and safeguard the world's cultural and natural heritage." Other SDGs also prominently highlight the role of culture in quality education (SDG 4), economic growth and sustainable consumption and production patterns (SDGs 8 and 12), climate action (SDG 13), inclusive and peaceful societies (SDG 16), and gender equality (SDG 5).

Andrés et al. (2019) state that cultural tourism is recognized in the strategic documents of the EU. Some actions in the area of cultural tourism date back to 1987. The ongoing project of European Cultural Routes plays an important role in promoting and protecting heritage, strengthening sustainable cultural tourism, and increasing transnational cooperation (Council of Europe, 2019; European Commission, 2024a). Another example is the initiative established in 1985, the European Capitals of Culture (ECOC), which aims to foster the contribution of culture to the development of cities (European Commission, 2023d).

The current EU strategic framework for cultural heritage includes several key elements: i) The European Commission Communication "Towards an Integrated Approach to Cultural Heritage for Europe"; ii) The New European Agenda for Culture, which includes protecting and promoting Europe's cultural heritage as a strategic objective; iii) The European Council 2023-26 Work Plan for Culture, which sets out five main priorities for European cooperation in cultural policymaking, including the sustainability of cultural heritage; and iv) The European Framework for Action on Cultural Heritage, which outlines the standard setup for heritage-related activities at the European level, primarily in EU policies and programs, and includes around 60 actions implemented by the European Commission (European Commission, 2023b).

According to ESPON (2020), emphasizing cultural heritage as a resource is a crucial policy guideline for the EU to complete the framework of the territorial dimension of Cohesion Policy and national/regional sectoral strategic policies. Several EU funding programs support cultural heritage under the current Multiannual Financial Framework. The European Commission's flagship program for cultural and creative stakeholders, Creative Europe, offered EUR 1.8 billion of financial support to the sector from 2014 to 2020 and provides a further EUR 2.44 billion of support from 2021 to 2027. Additionally, other EU programs and themes, sometimes overlooked and not immediately linked to the sector, such as Horizon Europe, Erasmus+, European Solidarity Corps, and the European Social Fund+, also support cultural heritage (European Commission, 2021b).

Despite recent political recognition of cultural heritage at the European level, it has not been prominently highlighted in regional research and innovation strategies for smart specialization (RIS3), as noted by Matei (2021) and Stanojev and Gustafsson (2021). According to the European Commission (2016a), only 14 out of 185 regions in Europe have selected cultural heritage as a RIS3 priority. However, this does not imply that cultural heritage is unrecognized as a powerful tool for smart specialization. On the contrary, ESPON (2020) explains that cultural heritage is often identified as a strategic (sub)priority for research and innovation at the regional level. Regions identify opportunities in cultural heritage technologies, digitalization, and imaging, viewing cultural heritage as essential for developing innovative approaches to tourism and sustainability.

Cultural heritage is considered part of the broader domain of cultural and creative industries, prioritized by 76 EU regions (ESPON, 2020; European Commission, 2016a). It is frequently linked as a subdomain to other domains, primarily tourism and industrial modernization (ESPON, 2020; Stanojev & Gustafsson, 2021). Indeed, Biagi et al. (2021) state that tourism is a RIS3 priority in half of EU regions, while Pertoldi (2016) observed that 73% of these regions use cultural heritage as an asset for the tourism and experience industry. Romão (2020a, 2020b) revealed that smart specialization strategies have a high potential to benefit the tourism sector through cultural proximity. Overall, the European Commission (2021a) reported that 80 regions (43%) use cultural heritage to support their RIS3 priorities. Matei (2021) emphasizes the need to adjust regional policies to link cultural heritage with smart specialization, innovation, experimentation, entrepreneurship, business development, and sustainable development in regional economies. He argues for its inclusion as a priority component in RIS3 to fully realize its potential as an engine for innovation and growth (ESPON, 2020).

Thus, one of the policy implications of this research could be to accept and promote cultural tourism as an important aspect of territorial capital and to integrate it into Smart Specialization Strategies.

6.3. Limitations and Suggestions for Future Research

While this thesis provides valuable insights into the impact of cultural tourism on regional economic resilience, it is not without limitations. The first limitation is related to data on national monuments, intangible elements listed in national inventories, and the number of museums. These data sources result in inconsistencies across countries due to differences in regulations related to cultural heritage and varying data availability (E. Panzera et al., 2021). Despite being sourced from the Orbis database, data on cultural industries also pose limitations as they might be incomplete and not reflect all enterprises in a region. Therefore, a first suggestion is to work towards standardized data and evidence development to facilitate knowledge exchange and provide an evidence-based approach, as well as tailored data and evidence collection: an increase in mapping, evaluation, and strategic analysis on the profile, dynamics, role, and impact of culture (UNESCO, 2022b).

Considering the currently available data, the study primarily focuses on the short-term resistance phase and short-term recovery phases in 2021 and 2022. Future research should consider extending the temporal scope to analyze longer-term trends and impacts once more data become available. Moreover, while this research significantly contributed to existing gaps by avoiding a unidimensional approach to cultural tourism and including several other dimensions such as intangible cultural heritage, national monuments and elements, museums, and cultural and creative industries, there is room to further improve research by incorporating additional cultural tourism indicators identified within the SmartCulTour project (Petrić et al., 2020), such as cultural tourism governance indicators or government expenditure on culture. Additionally, future research could focus on the domestic or international aspects of cultural tourism (Muštra, Škrabić Perić, et al., 2023). Furthermore, this research uses cultural tourism indicators from the supply side. Another possibility is to use big data collection techniques to estimate cultural tourism demand indicators (Bertocchi et al., 2021).

This research context is limited to regions of Mediterranean EU countries. Thus, further research could extend to other NUTS 3 regions of the EU, as well as replicate this research in regions in other global contexts outside the EU. Furthermore, one of the goals of this research was to identify the existence of spatial heterogeneity, which was successfully achieved in two ways: through predetermined groups such as urban, rural, coastal, and mountain regions, as well as through endogenously derived spatial regimes. However, this research did not delve deeply into the characteristics of the relationship between cultural tourism and regional economic resilience for identified subsamples. Therefore, further research could focus on capturing spatial heterogeneity more precisely.

In the methodological context, during the application of spatial regression, only the SDEM model specification was estimated. There is potential to use alternative spatial econometric models such as SLX, SEM, or geographically weighted regression (GWR), which might provide additional insights into the spatial dependencies of the economic resilience and cultural tourism nexus. There is also room to explore different methodological approaches, such as panel data once longer data series become available, multilevel models, and hierarchical regression. Another possibility is to use structural equation modeling to test the mediation role of tourism between cultural heritage and regional economic resilience (E. Panzera, 2022). To move away from quantitative methodology, there is an opportunity to investigate cultural tourism and regional economic resilience through qualitative methodology.

6.4. Conclusion

This thesis has significantly advanced the understanding of the role of cultural tourism in achieving short-term regional economic resilience during the economic shock caused by the COVID-19 pandemic, using a sample of 378 South-European EU regions. Cultural tourism was defined through six different indicators: i) Number of World Heritage Sites, ii) Number of elements inscribed on the UNESCO Intangible Cultural Heritage Lists, iii) Number of monuments on national lists, iv) Number of intangible cultural heritage elements on national lists, v) Number of museums, and vi) Number of cultural (and creative) enterprises, as defined within the framework of the Horizon 2020 SmartCulTour project. Regional resilience was defined in two ways: as regional economic resistance (shift in GVA in 2020 compared to 2019) and regional economic recovery (shift in GVA in 2021 compared to 2020 and in 2022 compared to 2020).

To obtain robust results and test the impacts of cultural tourism on regional economic resilience, each indicator was tested in separate model specifications, both in baseline and augmented versions (with control variables), using both non-spatial (OLS) and spatial (SDEM) regression. Firstly, the research confirmed the important role of cultural tourism in shaping regional economic resilience but found that it is phase-specific, with different outcomes during the resistance and recovery phases. During the resistance phase, although results were not consistently robust, they indicated a tendency towards a negative impact of cultural tourism on economic resilience, with these negative effects mostly associated with cultural tourism related to national monuments. Conversely, during the recovery phases of 2021 and 2022, all cultural tourism indicators demonstrated significant positive impacts, confirming positive effects and cultural tourism-induced resilience during recovery amid major shocks.

Secondly, the study suggested that spatial dependencies influence the relationship between cultural tourism and economic resilience, which was corroborated by the significant spatial autocorrelation detected after OLS estimates, as well as the approval of SDEM model specifications and their best model fit achieved by AIC criteria. Thirdly, the research confirmed that the nexus between cultural tourism and regional economic resilience exhibits spatial heterogeneity. To explore this, regions sharing similar characteristics were aggregated into clusters to examine how cultural tourism contributes to economic resilience differently among these groups. These clusters were defined through two approaches: i) a priori, based on Eurostat's Territorial Typologies, and ii) an original classification system derived from research data and the application of the spatial regimes approach. Results indicated that cultural tourism made urban regions particularly vulnerable during the shock. In the recovery phase, it was found that physical material cultural assets and creative industries were of utmost importance for the recovery of urban regions. Conversely, intangible cultural heritage is most important for rural and mountain regions. For coastal regions, all cultural tourism indicators exhibited significance, confirming its importance for such regions. The spatial regimes approach also confirmed spatial heterogeneity by creating different clusters for each combination of dependent (regional economic resilience) and independent (cultural tourism, tourism demand) variables, with the general observation that cultural tourism indicators were most important for the economic resilience of NUTS 3 regions across Croatia and Greece.

This research offers significant academic contributions, filling several identified research gaps. Primarily, it is the first investigation of the role of cultural tourism in shaping regional economic resilience during the COVID-19 shock, with a phase-specific context of separate investigations of economic resistance and recovery. The study employs a spatial econometrics approach and investigates spatial heterogeneity, using a comprehensive set of cultural tourism indicators. This addresses the limitations of relying solely on unidimensional indicators, such as UNESCO World Heritage Sites. Practical contributions include confirming the direct effects of cultural tourism in shaping regional economic resilience and suggesting that cultural tourism, through the synergy of cultural heritage and tourism, is a fundamental part of territorial capital.

Policymakers should consider the phase-specific and spatial context impacts, as negative effects during the resistance phase necessitate adaptive strategies, while positive effects during recovery phases highlight the need to actively promote cultural tourism. Cluster-specific strategies are also important: all cultural tourism resources are vital for coastal regions, physical assets and cultural industries are emphasized in urban regions, and intangible cultural assets are crucial in rural and mountain regions. Finally, these findings provide policymakers with key insights into the significance of promoting cultural tourism activities to enhance regional economic resilience. These insights are particularly relevant for the development of Smart Specialization Strategies and the strategic allocation of European Structural and Investment Funds for the 2021-2027 period.

LITERATURE

1. Abbas, J., Mubeen, R., Iorember, P. T., Raza, S., & Mamirkulova, G. (2021). Exploring the impact of COVID-19 on tourism: Transformational potential and implications for a sustainable recovery of the travel and leisure industry. *Current Research in Behavioral Sciences*, *2*, 100033. https://doi.org/10.1016/j.crbeha.2021.100033
2. Adamou, A., & Clerides, S. (2009). Tourism, Development and Growth: International Evidence and Lessons for Cyprus. *Cyprus Economic Policy Review*, *3*(2), 3–22.
3. Adedoyin, F. F., Erum, N., & Bekun, F. V. (2022). How does institutional quality moderates the impact of tourism on economic growth? Startling evidence from high earners and tourism-dependent economies. *Tourism Economics*, *28*(5), 1311–1332. https://doi.org/10.1177/1354816621993627
4. Afrić Rakitovac, K., & Urošević, N. (2017). Valorisation of Cultural Heritage in Sustainable Tourism. *Management*, *12*, 199–215. https://doi.org/10.26493/1854-4231.12.199-215
5. Ahmad, N. (2021). *Inclusive Recovery – Challenges and Opportunities: Employment and Social Developments in Europe 2021*. Centre for Entrepreneurship, SMEs, Regions and Cities. https://ec.europa.eu/social/BlobServlet?docId=24834&langId=en
6. Ahmad, N., Menegaki, A. N., & Al-Muharrami, S. (2020). Systematic Literature Review of Tourism Growth Nexus: An Overview of the Literature and a Content Analysis of 100 Most Influential Papers. *Journal of Economic Surveys*, *34*(5), 1068–1110. https://doi.org/10.1111/joes.12386
7. Aitchison, K. (2014). Cultural Heritage in Times of Economic Crisis. In C. Smith (Ed.), *Encyclopedia of Global Archaeology* (pp. 1867–1870). Springer. https://doi.org/10.1007/978-1-4419-0465-2_1177
8. Akaike, H. (1998). Information Theory and an Extension of the Maximum Likelihood Principle. In E. Parzen, K. Tanabe, & G. Kitagawa (Eds.), *Selected Papers of Hirotugu Akaike* (pp. 199–213). Springer. https://doi.org/10.1007/978-1-4612-1694-0_15
9. Albaladejo, I. P., Brida, J. G., González-Martínez, M. I., & Segarra, V. (2023). A new look to the tourism and economic growth nexus: A clustering and panel causality analysis. *The World Economy*, *n/a*(n/a). https://doi.org/10.1111/twec.13459
10. Aldao, C., Blasco, D., & Poch Espallargas, M. (2022). Lessons from COVID-19 for the future: Destination crisis management, tourist behaviour and tourism industry trends. *Journal of Tourism Futures*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/JTF-02-2022-0059
11. Alessi, L., Benczur, P., Campolongo, F., Cariboni, J., Manca, A. R., Menyhert, B., & Pagano, A. (2020). The Resilience of EU Member States to the Financial and Economic Crisis. *Social Indicators Research*, *148*(2), 569–598. https://doi.org/10.1007/s11205-019-02200-1
12. Alexandrakis, G., Manasakis, C., & Kampanis, N. A. (2019). Economic and Societal Impacts on Cultural Heritage Sites, Resulting from Natural Effects and Climate Change. *Heritage*, *2*(1), Article 1. https://doi.org/10.3390/heritage2010019
13. Alfano, V., Ercolano, S., & Pinto, M. (2022). Carrot and stick: Economic support and stringency policies in response to COVID-19. *Evaluation and Program Planning*, *94*, 102129. https://doi.org/10.1016/j.evalprogplan.2022.102129
14. Algieri, B., Leccadito, A., & Lombardo, R. (2023). The interest in online museum experiences and the influence of uncertainty and sentiment factors on tourist arrivals: The case of EU Mediterranean countries. *Annals of Tourism Research Empirical Insights*, *4*(1), 100097. https://doi.org/10.1016/j.annale.2023.100097

15. Allam, Z., & Jones, D. (2019). Climate Change and Economic Resilience through Urban and Cultural Heritage: The Case of Emerging Small Island Developing States Economies. *Economies*, *7*(2), Article 2. https://doi.org/10.3390/economies7020062
16. Almeida, A., Golpe, A., & Justo, R. (2021). Regional tourist heterogeneity in Spain: A dynamic spatial analysis. *Journal of Destination Marketing & Management*, *21*, 100643. https://doi.org/10.1016/j.jdmm.2021.100643
17. Almeida, A., Pinto Machado, L., & Silva, T. (2020). *Heritage as a Source of Competitive Advantage: Lessons From Madeira* (pp. 177–197). https://doi.org/10.4018/978-1-7998-0365-2.ch011
18. Alvarez, S., Bahja, F., & Fyall, A. (2022). A framework to identify destination vulnerability to hazards. *Tourism Management*, *90*, 104469. https://doi.org/10.1016/j.tourman.2021.104469
19. Amdaoud, M., Arcuri, G., Bourdin, S., Costanzo, D., Eva, M., Iatu, C., Ibanescu, B., Jeanne, L., Levratto, N., Nadou, F., Noiret, G., & Succurro, M. (2020). *Geography of COVID-19 outbreak and first policy answers in European regions and cities*. ESPON. https://archive.espon.eu/sites/default/files/attachments/GEOCOV%20final%20report.pdf
20. Amoiradis, C., Velissariou, E., Stankova, M., & Poulios, T. (2022). Spatial Analysis of Cultural Resources and Their Contribution to the Sustainable Tourism Development of Greece. In V. Katsoni & A. C. Şerban (Eds.), *Transcending Borders in Tourism Through Innovation and Cultural Heritage* (pp. 3–31). Springer International Publishing. https://doi.org/10.1007/978-3-030-92491-1_1
21. Andersson, M., & Gråsjö, U. (2009). Spatial dependence and the representation of space in empirical models. *The Annals of Regional Science*, *43*(1), 159–180. https://doi.org/10.1007/s00168-008-0211-5
22. Andraz, J. M., Norte, N. M., & Gonçalves, H. S. (2015). Effects of tourism on regional asymmetries: Empirical evidence for Portugal. *Tourism Management*, *50*, 257–267. https://doi.org/10.1016/j.tourman.2015.03.004
23. Andrés, J. P., Ladeiras, A. L., Culic, D., & Gini, M. (2019). *For a New EU Integrated Tourism Policy: Europe – 27 Countries, One Destination*. European Union. https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1556119954.pdf
24. Angulo, A. M., Mur, J., & Trívez, F. J. (2018). Measuring resilience to economic shocks: An application to Spain. *The Annals of Regional Science*, *60*(2), 349–373. https://doi.org/10.1007/s00168-017-0815-8
25. Annoni, P., de Dominicis, L., & Khabirpour, N. (2019). Location matters: A spatial econometric analysis of regional resilience in the European Union. *Growth and Change*, *50*(3), 824–855. https://doi.org/10.1111/grow.12311
26. Ansari, M. A. (2024). Tourism and Economic Growth: Evidence from Cross-Country Data with Policy Insights. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-024-02031-7
27. Anselin, L. (1988). Lagrange Multiplier Test Diagnostics for Spatial Dependence and Spatial Heterogeneity. *Geographical Analysis*, *20*(1), 1–17. https://doi.org/10.1111/j.1538-4632.1988.tb00159.x
28. Anselin, L. (1989). *What is Special About Spatial Data? Alternative Perspectives on Spatial Data Analysis (89-4)*. https://escholarship.org/uc/item/3ph5k0d4
29. Anselin, L. (1990). Spatial Dependence and Spatial Structural Instability in Applied Regression Analysis*. *Journal of Regional Science*, *30*(2), 185–207. https://doi.org/10.1111/j.1467-9787.1990.tb00092.x

30. Anselin, L. (2002). Under the hood Issues in the specification and interpretation of spatial regression models. *Agricultural Economics*, *27*(3), 247–267. https://doi.org/10.1111/j.1574-0862.2002.tb00120.x
31. Anselin, L. (2010). Thirty years of spatial econometrics. *Papers in Regional Science*, *89*(1), 3–25. https://doi.org/10.1111/j.1435-5957.2010.00279.x
32. Anselin, L. (2022). Spatial econometrics. In S. J. Rey & R. Franklin (Eds.), *Handbook of Spatial Analysis in the Social Sciences* (pp. 101–122). Edward Elgar Publishing. https://doi.org/10.4337/9781789903942.00014
33. Anselin, L., & Amaral, P. (2023). Endogenous spatial regimes. *Journal of Geographical Systems*. https://doi.org/10.1007/s10109-023-00411-2
34. Anselin, L., Bera, A. K., Florax, R., & Yoon, M. J. (1996). Simple diagnostic tests for spatial dependence. *Regional Science and Urban Economics*, *26*(1), 77–104. https://doi.org/10.1016/0166-0462(95)02111-6
35. Anselin, L., & Rey, S. (1991). Properties of Tests for Spatial Dependence in Linear Regression Models. *Geographical Analysis*, *23*(2), 112–131. https://doi.org/10.1111/j.1538-4632.1991.tb00228.x
36. Antonakakis, N., Dragouni, M., Eeckels, B., & Filis, G. (2019). The Tourism and Economic Growth Enigma: Examining an Ambiguous Relationship through Multiple Prisms. *Journal of Travel Research*, *58*(1), 3–24. https://doi.org/10.1177/0047287517744671
37. Antonakakis, N., Dragouni, M., & Filis, G. (2015). How strong is the linkage between tourism and economic growth in Europe? *Economic Modelling*, *44*, 142–155. https://doi.org/10.1016/j.econmod.2014.10.018
38. Araña, J. E., & León, C. J. (2008). The impact of terrorism on tourism demand. *Annals of Tourism Research*, *35*(2), 299–315. https://doi.org/10.1016/j.annals.2007.08.003
39. Arbulú, I., Razumova, M., Rey-Maquieira, J., & Sastre, F. (2021). Measuring risks and vulnerability of tourism to the COVID-19 crisis in the context of extreme uncertainty: The case of the Balearic Islands. *Tourism Management Perspectives*, *39*, 100857. https://doi.org/10.1016/j.tmp.2021.100857
40. Arcaya, M., Brewster, M., Zigler, C. M., & Subramanian, S. V. (2012). Area variations in health: A spatial multilevel modeling approach. *Health & Place*, *18*(4), 824–831. https://doi.org/10.1016/j.healthplace.2012.03.010
41. Archer, B., Cooper, C., & Ruhanen, L. (2012). The positive and negative impacts of tourism. In *Global tourism* (pp. 79–102). Routledge.
42. ARDECO. (2023). *Knowledge Centre for Territorial Policies, Directorate-General Joint Research Centre* [dataset]. https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en#database
43. Arezki, R., Cherif, R., & Piotrowski, J. (2009). *Tourism Specialization and Economic Development: Evidence from the UNESCO World Heritage List*. IMF Working Papers. https://doi.org/10.5089/9781451873238.001
44. Artelaris, P., Kallioras, D., & Katsinis, A. (2024). Local economic resilience and economic specialization in Greece during the crisis. *Regional Science Policy & Practice*, *16*(1), 12705. https://doi.org/10.1111/rsp3.12705
45. Artelaris, P., & Mavrommatis, G. (2022). Territorial cohesion, the COVID-19 crisis and the urban paradox: Future challenges in urbanization and economic agglomeration. *REGION*, *9*(1), Article 1. https://doi.org/10.18335/region.v9i1.403
46. Ashworth, G. J. (2014). Heritage and Economic Development: Selling the Unsellable. *Heritage & Society*, *7*(1), 3–17. https://doi.org/10.1179/2159032X14Z.00000000015

47. Aslan, A., Altinoz, B., & Özsolak, B. (2021). The nexus between economic growth, tourism development, energy consumption, and CO2 emissions in Mediterranean countries. *Environmental Science and Pollution Research, 28*(3), 3243–3252. https://doi.org/10.1007/s11356-020-10667-6
48. Backman, M., & Nilsson, P. (2018). The role of cultural heritage in attracting skilled individuals. *Journal of Cultural Economics*, *42*(1), 111–138. https://doi.org/10.1007/s10824-016-9289-2
49. Bailey, D., Clark, J., Colombelli, A., Corradini, C., De Propris, L., Derudder, B., Fratesi, U., Fritsch, M., Harrison, J., Hatfield, M., Kemeny, T., Kogler, D. F., Lagendijk, A., Lawton, P., Ortega-Argilés, R., Otero, C. I., & Usai, S. (2020). Regions in a time of pandemic. *Regional Studies*, *54*(9), 1163–1174. https://doi.org/10.1080/00343404.2020.1798611
50. Bailey, D., Clark, J., Colombelli, A., Corradini, C., De Propris, L., Derudder, B., Fratesi, U., Fritsch, M., Harrison, J., Hatfield, M., Kemeny, T., Kogler, D., Lagendijk, A., Lawton, P., Ortega-Argilés, R., & Usai, S. (2020). Rethinking regions in turbulent times. *Regional Studies*, *54*(1), 1–4. https://doi.org/10.1080/00343404.2019.1698837
51. Bailey, D., Crescenzi, R., Roller, E., Anguelovski, I., Datta, A., & Harrison, J. (2021). Regions in Covid-19 recovery. *Regional Studies*, *55*(12), 1955–1965. https://doi.org/10.1080/00343404.2021.2003768
52. Bajra, U. Q., Aliu, F., Aver, B., & Čadež, S. (2023). COVID-19 pandemic–related policy stringency and economic decline: Was it really inevitable? *Economic Research-Ekonomska Istraživanja*, *36*(1), 499–515. https://doi.org/10.1080/1331677X.2022.2077792
53. Bak, S., Min, C.-K., & Roh, T.-S. (2019). Impacts of UNESCO-listed tangible and intangible heritages on tourism. *Journal of Travel & Tourism Marketing*, *36*(8), 917–927. https://doi.org/10.1080/10548408.2019.1658034
54. Balaguer, J., & Cantavella-Jordá, M. (2002). Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics*, *34*(7), 877–884. https://doi.org/10.1080/00036840110058923
55. Balakrishnan, R., Rabier, L., Ebeke, C., Firat, M., & Malacrino, D. (2022). *Regional Disparities in Europe* (Working Paper No. 2022/198). https://www.imf.org/en/Publications/WP/Issues/2022/09/30/Regional-Disparities-in-Europe-523583
56. Bălan, M. (2021). The Impact of the COVID-19 Pandemic on Cultural Tourism. *Romanian Rural Tourism in International Context: Present and Prospects*, *47*, 50–62. https://doi.org/10.5281/zenodo.5725092
57. Balsalobre-Lorente, D., Driha, O. M., Bekun, F. V., & Adedoyin, F. F. (2021). The asymmetric impact of air transport on economic growth in Spain: Fresh evidence from the tourism-led growth hypothesis. *Current Issues in Tourism*, *24*(4), 503–519. https://doi.org/10.1080/13683500.2020.1720624
58. Balsalobre-Lorente, D., & Leitão, N. C. (2020). The role of tourism, trade, renewable energy use and carbon dioxide emissions on economic growth: Evidence of tourism-led growth hypothesis in EU-28. *Environmental Science and Pollution Research*, *27*(36), 45883–45896. https://doi.org/10.1007/s11356-020-10375-1
59. Banica, A., Eva, M., Nijkamp, P., Pascariu, G. C., Kourtit, K., Iatu, C., Incaltarau, C., Pavel, A., Ibanescu, B., MAHA, L.-G., Botezat, A., Constantin, D., Cristescu, A., Goschin, Z., Lupu, D., Moldovan, B., Popescu, A., Viorica, E.-D., Tiganasu, R., & Dardala, A. (2021). *The European Atlas of Resilience*. Editura Universităţii "Al. I. Cuza."

60. Bănică, A., Kourtit, K., & Nijkamp, P. (2020). Natural disasters as a development opportunity: A spatial economic resilience interpretation. *Review of Regional Research*, *40*(2), 223–249. https://doi.org/10.1007/s10037-020-00141-8
61. Barbero, J., Conte, A., Crucitti, F., Lazarou, N.-J., Sakkas, S., & Salotti, S. (2024). The impact of the recovery fund on EU regions: A spatial general equilibrium analysis. *Regional Studies*, *58*(2), 336–349. https://doi.org/10.1080/00343404.2022.2123467
62. Barile, S. (2015). Towards a Novel Conception of Bene Culturale. In G. M. Golinelli (Ed.), *Cultural Heritage and Value Creation: Towards New Pathways* (pp. 53–70). Springer International Publishing. https://doi.org/10.1007/978-3-319-08527-2_2
63. Barišić, P., & Kovač, T. (2022). The effectiveness of the fiscal policy response to COVID-19 through the lens of short and long run labor market effects of COVID-19 measures. *Public Sector Economics*, *46.*(1), 43–81. https://doi.org/10.3326/pse.46.1.2
64. Barros, J. C. (2022). Impacts, Resilience, and Creativity in Cultural Tourism and Leisure in a Time of Pandemic: Presential and Virtual Visits to Lisbon Museums. In *Handbook of Research on Urban Tourism, Viral Society, and the Impact of the COVID-19 Pandemic* (pp. 405–427). IGI Global. https://doi.org/10.4018/978-1-6684-3369-0.ch021
65. Basile, R. (2008). Regional economic growth in Europe: A semiparametric spatial dependence approach. *Papers in Regional Science*, *87*(4), 527–545. https://doi.org/10.1111/j.1435-5957.2008.00175.x
66. Bassil, C., Harb, G., & Al Daia, R. (2023). The Economic Impact of Tourism at Regional Level: A Systematic Literature Review. *Tourism Review International*, *27*(2), 159–175. https://doi.org/10.3727/154427223X16717265382840
67. Batista e Silva, F., Barranco, R., Proietti, P., Pigaiani, C., & Lavalle, C. (2021). A new European regional tourism typology based on hotel location patterns and geographical criteria. *Annals of Tourism Research*, *89*, 103077. https://doi.org/10.1016/j.annals.2020.103077
68. Batista e Silva, F., Marín Herrera, M. A., Rosina, K., Ribeiro Barranco, R., Freire, S., & Schiavina, M. (2018). Analysing spatiotemporal patterns of tourism in Europe at high-resolution with conventional and big data sources. *Tourism Management*, *68*, 101–115. https://doi.org/10.1016/j.tourman.2018.02.020
69. Baycan, T., & Girard, L. F. (2011). *Heritage in socio-economic development: Direct and indirect impacts*. ICOMOS, Paris, France. http://openarchive.icomos.org/id/eprint/1299/1/IV-2-Article9_Baycan_Girard.pdf
70. Bazargani, R. H. Z., & Kiliç, H. (2021). Tourism competitiveness and tourism sector performance: Empirical insights from new data. *Journal of Hospitality and Tourism Management*, *46*, 73–82. https://doi.org/10.1016/j.jhtm.2020.11.011
71. Bellini, N., Grillo, F., Lazzeri, G., & Pasquinelli, C. (2017). Tourism and regional economic resilience from a policy perspective: Lessons from smart specialization strategies in Europe. *European Planning Studies*, *25*(1), 140–153. https://doi.org/10.1080/09654313.2016.1273323
72. Benítez-Aurioles, B. (2020). Tourism Resilience Patterns in Southern Europe. *Tourism Analysis*, *25*(4), 409–424. https://doi.org/10.3727/108354220X16010020096118
73. Bento, J. P. (2016). Tourism and economic growth in Portugal: An empirical investigation of causal links. *Tourism & Management Studies*, *12*(1), Article 1.
74. Berbekova, A., Uysal, M., & Assaf, A. G. (2021). A thematic analysis of crisis management in tourism: A theoretical perspective. *Tourism Management*, *86*, 104342. https://doi.org/10.1016/j.tourman.2021.104342

75. Berbés-Blázquez, M., & Scott, D. (2017). The development of resilience thinking. In R. Butler (Ed.), *Tourism and resilience* (pp. 9–22). https://www.cabidigitallibrary.org/doi/10.1079/9781780648330.0009
76. Bernini, C., Cracolici, M. F., & Nijkamp, P. (2020). Micro and Macro Resilience Measures of an Economic Crisis. *Networks and Spatial Economics*, *20*(1), 47–71. https://doi.org/10.1007/s11067-019-09470-9
77. Bertacchini, E., Nuccio, M., & Durio, A. (2021). Proximity tourism and cultural amenities: Evidence from a regional museum card. *Tourism Economics*, *27*(1), 187–204. https://doi.org/10.1177/1354816619890230
78. Bertacchini, E., Revelli, F., & Zotti, R. (2024). The economic impact of UNESCO World Heritage: Evidence from Italy. *Regional Science and Urban Economics*, *105*, 103996. https://doi.org/10.1016/j.regsciurbeco.2024.103996
79. Bertocchi, D., Camatti, N., & Van der Borg, J. (2020). Tourism Observatories for monitoring MED destinations performance. The case of ShapeTourism project. *Tourism: An International Interdisciplinary Journal*, *68*(4), 466–481. https://doi.org/10.37741/t.68.4.7
80. Bertocchi, D., Van der Borg, J., & Camatti, N. (2021). Tourism Peaks on the Three Peaks: Using big data to monitor where, when and how many visitors impact the Dolomites UNESCO World Heritage Site. *Rivista geografica italiana : CXXVIII, 3, 2021*, 59–81. https://doi.org/10.3280/rgioa3-2021oa12532
81. Biagi, B., Brandano, M. G., & Ortega-Argiles, R. (2021). Smart specialisation and tourism: Understanding the priority choices in EU regions. *Socio-Economic Planning Sciences*, *74*, 1–11. https://doi.org/10.1016/j.seps.2020.100883
82. Biardeau, L. T., & Sahli, M. (2024). Investigating the non-linear impacts of seven types of natural disasters on inbound tourism: Insights from the EM-DAT database. *Tourism Economics*, *30*(4), 900–923. https://doi.org/10.1177/13548166241229319
83. Bína, V., Chantepie, P., Deroin, V., Frank, G., Kommel, K., Kotýnek, J., & Robin, P. (2012). *ESSnet-CULTURE - European Statistical System Network on Culture*. Ministry of Culture, Luxembourg and Eurostat. https://ec.europa.eu/assets/eac/culture/library/reports/ess-net-report_en.pdf
84. Bisciari, P., Essers, D., & Vincent, E. (2020). Does the EU convergence machine still work ? *Economic Review*, *i*, 23–64.
85. Blake, A., Durbarry, R., Eugenio-Martin, J. L., Gooroochurn, N., Hay, B., Lennon, J., Thea Sinclair, M., Sugiyarto, G., & Yeoman, I. (2006). Integrating forecasting and CGE models: The case of tourism in Scotland. *Tourism Management*, *27*(2), 292–305. https://doi.org/10.1016/j.tourman.2004.11.005
86. Blažević, B., & Perišić, M. (2009). *Turistička regionalizacija u globalnim procesima*. Fakultet za menadžment u turizmu i ugostiteljstvu, Sveučilište u Rijeci. https://urn.nsk.hr/urn:nbn:hr:191:175207
87. Böhme, K., Besana, F., Lüer, C., Holstein, F., Hans, S., Valenza, A., Caillaud, B., & Derszniak-Noirjean, M. (2020). *Potential impacts of COVID-19 on regions and cities of the EU*. Publications Office of the European Union. https://data.europa.eu/doi/10.2863/56992
88. Boin, A., & Rhinard, M. (2023). Crisis management performance and the European Union: The case of COVID-19. *Journal of European Public Policy*, *30*(4), 655–675. https://doi.org/10.1080/13501763.2022.2141304
89. Boix-Domenech, R., Peiró-Palomino, J., & Rausell-Köster, P. (2021). Creative industries and productivity in the European regions. Is there a Mediterranean effect? *Regional Science Policy & Practice*, *13*(5), 1546–1564. https://doi.org/10.1111/rsp3.12395

90. Boix-Domènech, R., & Rausell-Köster, P. (2018). The Economic Impact of the Creative Industry in the European Union. In V. Santamarina-Campos & M. Segarra-Oña (Eds.), *Drones and the Creative Industry: Innovative Strategies for European SMEs* (pp. 19–36). Springer International Publishing. https://doi.org/10.1007/978-3-319-95261-1_2
91. Bombico, S. (2023, February 8). *Mediterranean Cultural Heritage in EU Policies, a talk with Sonia Bombico, researcher at the University of Évora | UNIMED*. https://www.uni-med.net/news/mediterranean-cultural-heritage-in-eu-policies-a-talk-with-sonia-bombico-researcher-at-the-university-of-evora/
92. Borsati, M., Cascarano, M., & Percoco, M. (2022). Resilience to health shocks and the spatial extent of local labour markets: Evidence from the Covid-19 outbreak in Italy. *Regional Studies*, *0*(0), 1–18. https://doi.org/10.1080/00343404.2022.2035708
93. Borsekova, K., & Korony, S. (2022). Resilience and vulnerability of regional labour markets: Principal component analysis of labour market efficiency in the EU. *Regional Studies*, *0*(0), 1–18. https://doi.org/10.1080/00343404.2022.2042507
94. Boschma, R. (2015). Towards an Evolutionary Perspective on Regional Resilience. *Regional Studies*, *49*(5), 733–751. https://doi.org/10.1080/00343404.2014.959481
95. Boto-García, D., & Mayor, M. (2022). Domestic tourism and the resilience of hotel demand. *Annals of Tourism Research*, *93*, 103352. https://doi.org/10.1016/j.annals.2022.103352
96. Bourdin, S., Cottereau, V., Hermet, F., Jean-Pierre, P., & Medeiros, E. (2023). How have Europe's outermost regions dealt with the economic and social consequences of the COVID-19 crisis? Effects, policies and recommendations. *Regional Science Policy & Practice*, *15*(8), 1820–1841. https://doi.org/10.1111/rsp3.12690
97. Bourdin, S., & Levratto, N. (2023). Regional Implications of COVID-19. *International Regional Science Review*, *46*(5–6), 515–522. https://doi.org/10.1177/01600176231189433
98. Bourdin, S., Moodie, J., Gassen, N. S., Evers, D., Adobati, F., Amdaoud, M., Arcuri, G., Casti, E., Cottereau, V., Eva, M., Lőcsei, H., Iaţu, C., Ibaˇnescu, B.-C., Jean-Pierre, P., Hermet, F., Levratto, N., Löfving, L., Coll-Martinez, E., Psycharis, Y., … Remete, Z. (2023). COVID-19 as a systemic shock: Curb or catalyst for proactive policies towards territorial cohesion? *Regional Studies*, *0*(0), 1–14. https://doi.org/10.1080/00343404.2023.2242387
99. Bourdin, S., Moodie, J., Igari, A., & Amdaoud, M. (2022). *Territorial impacts of COVID-19 and policy answers in European regions and cities*. ESPON. https://archive.espon.eu/sites/default/files/attachments/GEOCOV%20final%20report.pdf
100. Bowitz, E., & Ibenholt, K. (2009). Economic impacts of cultural heritage – Research and perspectives. *Journal of Cultural Heritage*, *10*(1), 1–8. https://doi.org/10.1016/j.culher.2008.09.002
101. Brada, J. C., Gajewski, P., & Kutan, A. M. (2021). Economic resiliency and recovery, lessons from the financial crisis for the COVID-19 pandemic: A regional perspective from Central and Eastern Europe. *International Review of Financial Analysis*, *74*, 101658. https://doi.org/10.1016/j.irfa.2021.101658
102. Brandano, M. G., Faggian, A., & Pinate, A. C. (2024). The impact of COVID-19 on the tourism sector in Italy: A regional spatial perspective. *Tourism Economics*, 13548166241257966. https://doi.org/10.1177/13548166241257966
103. Brida, J. G., & Cárdenas-García, P. J. (2024). Introduction: Special focus on tourism, economic development and environmental impact. *Tourism Economics*, 13548166241248244. https://doi.org/10.1177/13548166241248244

104. Brida, J. G., Cortes-Jimenez, I., & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues in Tourism*, *19*(5), 394–430. https://doi.org/10.1080/13683500.2013.868414
105. Brida, J. G., Ford, L., & Olivera, M. (2023). Research progress, trends, and updates on the relationship between tourism, economic growth and energy consumption: A bibliometric analysis. *Journal of Policy Research in Tourism, Leisure and Events*, 1–28. https://doi.org/10.1080/19407963.2023.2228542
106. Brida, J. G., Matesanz Gómez, D., & Segarra, V. (2020). On the empirical relationship between tourism and economic growth. *Tourism Management*, *81*, 104131. https://doi.org/10.1016/j.tourman.2020.104131
107. Bristow, G., & Healy, A. (2020). Regional resilience: An agency perspective. In *Handbook on Regional Economic Resilience* (pp. 36–53). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781785360855/9781785360855.00008.xml
108. Bronzini, R., Ciani, E., & Montaruli, F. (2022). Tourism and local growth in Italy. *Regional Studies*, *56*(1), 140–154. https://doi.org/10.1080/00343404.2021.1910649
109. Brouder, P. (2017). Evolutionary economic geography: Reflections from a sustainable tourism perspective. *Tourism Geographies*, *19*(3), 438–447. https://doi.org/10.1080/14616688.2016.1274774
110. Bubbico, R., & Freytag, L. (2018). *Inequality in Europe*. European Investment Bank. https://www.eib.org/attachments/efs/econ_inequality_in_europe_en.pdf
111. Bui, P. L., Tzu-Ling Chen, (Charline), & Wickens, E. (2021). Tourism industry resilience issues in urban areas during COVID-19. *International Journal of Tourism Cities*, *7*(3), 861–879. https://doi.org/10.1108/IJTC-12-2020-0289
112. Bureau van Dijk. (2024). *Orbis* [dataset]. https://login.bvdinfo.com/R0/Orbis
113. Bürgisser, R., & Di Carlo, D. (2023). Blessing or Curse? The Rise of Tourism-Led Growth in Europe's Southern Periphery. *JCMS: Journal of Common Market Studies*, *61*(1), 236–258. https://doi.org/10.1111/jcms.13368
114. Burkey, M. L. (2018). Spatial Econometrics and GIS YouTube Playlist. *REGION*, *5*(3), Article 3. https://doi.org/10.18335/region.v5i3.254
115. Burridge, P. (2011). A research agenda on general-to-specific spatial model search. *Investigaciones Regionales*, *21*, 71–90.
116. Burridge, P., Elhorst, J. P., & Zigova, K. (2016). Group Interaction in Research and the Use of General Nesting Spatial Models. In *Spatial Econometrics: Qualitative and Limited Dependent Variables* (Vol. 37, pp. 223–258). Emerald Group Publishing Limited. https://doi.org/10.1108/S0731-905320160000037016
117. Butler, R. (1980). The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *Canadian Geographies / Géographies Canadiennes*, *24*(1), 5–12. https://doi.org/10.1111/j.1541-0064.1980.tb00970.x
118. Butler, R. (2022). COVID-19 and its potential impact on stages of tourist Destination Development. *Current Issues in Tourism*, *25*(10), 1682–1695. https://doi.org/10.1080/13683500.2021.1990223
119. Cainelli, G., Ganau, R., & Modica, M. (2019). Does related variety affect regional resilience? New evidence from Italy. *The Annals of Regional Science*, *62*(3), 657–680. https://doi.org/10.1007/s00168-019-00911-4
120. Calero, C., & Turner, L. W. (2020). Regional economic development and tourism: A literature review to highlight future directions for regional tourism research. *Tourism Economics*, *26*(1), 3–26. https://doi.org/10.1177/1354816619881244

121. Camagni, R., Capello, R., Cerisola, S., & Panzera, E. (2020). The Cultural Heritage - Territorial Capital nexus: Theory and empirics / Il nesso tra Patrimonio Culturale e Capitale Territoriale: teoria ed evidenza empirica. *IL CAPITALE CULTURALE. Studies on the Value of Cultural Heritage*, *11*, Article 11. https://doi.org/10.13138/2039-2362/2547
122. Camară, G. (2022). Comment on “A new European regional tourism typology.” *Annals of Tourism Research Empirical Insights*, *3*(1), 100041. https://doi.org/10.1016/j.annale.2022.100041
123. Camatti, N., Salmasi, L., & van der Borg, J. (2021). *Tourism and economic growth: An application to coastal regions in the Mediterranean area* (2021:16). Department of Economics, University of Venice “Ca’ Foscari.” https://ideas.repec.org//p/ven/wpaper/202116.html
124. Campoy-Muñoz, P., Cardenete, M. A., Delgado, M. D. C., & Arjona-Fuentes, J. M. (2023). The economic impact of COVID-19 on cultural tourism: The case of Mosque-Cathedral of Cordoba, Spain. *Current Issues in Tourism*, *26*(19), 3085–3090. https://doi.org/10.1080/13683500.2022.2108772
125. Canale, R. R., De Simone, E., Di Maio, A., & Parenti, B. (2019). UNESCO World Heritage sites and tourism attractiveness: The case of Italian provinces. *Land Use Policy*, *85*, 114–120. https://doi.org/10.1016/j.landusepol.2019.03.037
126. Candela, G., & Figini, P. (2012). *The Economics of Tourism Destinations*. Springer. https://doi.org/10.1007/978-3-642-20874-4
127. Cannas, R. (2012). An Overview of Tourism Seasonality: Key Concepts and Policies. *Almatourism - Journal of Tourism, Culture and Territorial Development*, *3*(5), Article 5. https://doi.org/10.6092/issn.2036-5195/3120
128. Capello, R., & Cerisola, S. (2023). Industrial transformations and regional inequalities in Europe. *The Annals of Regional Science*, *70*(1), 15–28. https://doi.org/10.1007/s00168-021-01097-4
129. Capello, R., Cerisola, S., & Perucca, G. (2020). Cultural Heritage, Creativity, and Local Development: A Scientific Research Program. In S. Della Torre, S. Cattaneo, C. Lenzi, & A. Zanelli (Eds.), *Regeneration of the Built Environment from a Circular Economy Perspective* (pp. 11–19). Springer International Publishing. https://doi.org/10.1007/978-3-030-33256-3_2
130. Capello, R., & Dellisanti, R. (2023). Creativity in Cultural and Creative Industries as a source of regional adaptive resilience. In *Resilience and Regional Development* (pp. 10–29). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/book/9781035314058/book-part-9781035314058-8.xml
131. Capello, R., & Nijkamp, P. (2011). Regional Growth and Development Theories Revisited. In *Endogenous Regional Development*. Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781849804561/9781849804561.00020.xml
132. Capó, J., Font, A. R., & Rosselló-Nadal, J. (2007). Dutch Disease in Tourism Economies: Evidence from the Balearics and the Canary Islands. *Journal of Sustainable Tourism*, *15*(6), 615–627. https://doi.org/10.2167/jost698.0
133. Cartone, A., Panzera, D., & Postiglione, P. (2022). Regional economic disparities, spatial dependence and proximity structures. *Regional Science Policy & Practice*, *14*(5), 1034–1051. https://doi.org/10.1111/rsp3.12482
134. Carvalho, R. M. F., Costa, C. M. M. da, & Ferreira, A. M. A. P. (2019). Review of the theoretical underpinnings in the creative tourism research field. *Tourism & Management Studies*, *15*(1SI), Article 1SI.

135. Caselli, F., Grigoli, F., & Sandri, D. (2022). Protecting Lives and Livelihoods with Early and Tight Lockdowns. *The B.E. Journal of Macroeconomics*, *22*(1), 241–268. https://doi.org/10.1515/bejm-2020-0266
136. Castillo-Manzano, J. I., Castro-Nuño, M., Lopez-Valpuesta, L., & Zarzoso, Á. (2021). Assessing the tourism attractiveness of World Heritage Sites: The case of Spain. *Journal of Cultural Heritage*, *48*, 305–311. https://doi.org/10.1016/j.culher.2020.12.005
137. Castro-Nuño, M., Molina-Toucedo, J. A., & Pablo-Romero, M. P. (2013). Tourism and GDP: A Meta-analysis of Panel Data Studies. *Journal of Travel Research*, *52*(6), 745–758. https://doi.org/10.1177/0047287513478500
138. Cehan, A., Bănică, A., Eva, M., & Iaţu, C. (2023). Resilience of tourism in front of global crises: The case of Romanian urban destinations. In *Resilience and Regional Development* (pp. 342–376). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/book/9781035314058/book-part-9781035314058-24.xml
139. Cellini, R., & Cuccia, T. (2013). Museum and monument attendance and tourism flow: A time series analysis approach. *Applied Economics*. https://www.tandfonline.com/doi/full/10.1080/00036846.2012.716150
140. Cellini, R., & Cuccia, T. (2015). The economic resilience of tourism industry in Italy: What the 'great recession' data show. *Tourism Management Perspectives*, *16*, 346–356. https://doi.org/10.1016/j.tmp.2015.09.007
141. Cellini, R., & Cuccia, T. (2016). UNESCO Sites as Public Goods: Comparative Experiences in Italy. *Revista de Economia Contemporânea*, *20*(3), 553–569. https://doi.org/10.1590/198055272037
142. Cellini, R., & Cuccia, T. (2019). Do behaviours in cultural markets affect economic resilience? An analysis of Italian regions. *European Planning Studies*, *27*(4), 784–801. https://doi.org/10.1080/09654313.2019.1568397
143. Cerisola, S. (2019a). A new perspective on the cultural heritage–development nexus: The role of creativity. *Journal of Cultural Economics*, *43*(1), 21–56. https://doi.org/10.1007/s10824-018-9328-2
144. Cerisola, S. (2019b). *Cultural Heritage, Creativity and Economic Development*. Edward Elgar Publishing.
145. Cerisola, S. (2024). Built cultural heritage and local development: The mediating effect of multi-dimensional creativity. In *Routledge Companion to Creativity and the Built Environment*. Routledge.
146. Cerisola, S., & Panzera, E. (2022). Cultural participation in Cultural and Creative Cities: Positive regional outcomes and potential congestion concerns. *Papers in Regional Science*, *101*(6), 1245–1261. https://doi.org/10.1111/pirs.12709
147. Cerisola, S., & Panzera, E. (2024). Heritage tourism and local prosperity: An empirical investigation of their controversial relationship. *Tourism Economics*, 13548166241234099. https://doi.org/10.1177/13548166241234099
148. Chacon-Hurtado, D., Kumar, I., Gkritza, K., Fricker, J. D., & Beaulieu, L. J. (2020). The role of transportation accessibility in regional economic resilience. *Journal of Transport Geography*, *84*, 102695. https://doi.org/10.1016/j.jtrangeo.2020.102695
149. Chacon-Hurtado, D., Losada-Rojas, L. L., Yu, D., Gkritza, K., & Fricker, J. D. (2020). A Proposed Framework for the Incorporation of Economic Resilience into Transportation Decision Making. *Journal of Management in Engineering*, *36*(6), 04020084. https://doi.org/10.1061/(ASCE)ME.1943-5479.0000834

150. Charlton, D., & Castillo, M. (2021). Potential Impacts of a Pandemic on the US Farm Labor Market. *Applied Economic Perspectives and Policy*, *43*(1), 39–57. https://doi.org/10.1002/aepp.13105

151. Charron, N., Dijkstra, L., & Lapuente, V. (2014). Regional Governance Matters: Quality of Government within European Union Member States. *Regional Studies*, *48*(1), 68–90. https://doi.org/10.1080/00343404.2013.770141

152. Charron, N., Lapuente, V., & Annoni, P. (2019). Measuring quality of government in EU regions across space and time. *Papers in Regional Science*, *98*(5), 1925–1954. https://doi.org/10.1111/pirs.12437

153. Charron, N., Lapuente, V., Bauhr, M., & Annoni, P. (2022). Change and Continuity in Quality of Government: Trends in subnational quality of government in EU member states. *Investigaciones Regionales - Journal of Regional Research*, *2022/2*(53), 5–23.

154. Cheng, L., & Zhang, J. (2020). Is tourism development a catalyst of economic recovery following natural disaster? An analysis of economic resilience and spatial variability. *Current Issues in Tourism*, *23*(20), 2602–2623. https://doi.org/10.1080/13683500.2019.1711029

155. Childs, C. (2023, March 18). How Culture and Heritage Tourism Boosts More Than A Visitor Economy. *MyTravelResearch.Com*. https://www.mytravelresearch.com/culture-and-heritage-tourism-boosts-visitor-economy/

156. Cicerone, G., Crociata, A., & Mantegazzi, D. (2021). Cultural and creative industries and regional diversification: Does size matter? *Papers in Regional Science*, *100*(3), 671–688. https://doi.org/10.1111/pirs.12585

157. Cirillo, R., & De Tullio, M. F. (2021). *Healing Culture, Reclaiming Commons, Fostering Care: A Proposal for EU Cultural Policies*. Italian Institute for the Future.

158. Cisneros-Martínez, J. D., & Fernández-Morales, A. (2015). Cultural tourism as tourist segment for reducing seasonality in a coastal area: The case study of Andalusia. *Current Issues in Tourism*, *18*(8), 765–784. https://doi.org/10.1080/13683500.2013.861810

159. Citelli, M., & Severin, A. (2021). *Cultural Heritage in Mountain Regions*. Interreg Europe. https://www.interregeurope.eu/sites/default/files/inline/TO6_Policy_Brief_on_Cultural_Heritage_in_Mountain_Regions_04102021.pdf

160. Cochrane, J. (2010). The Sphere of Tourism Resilience. *Tourism Recreation Research*, *35*(2), 173–185. https://doi.org/10.1080/02508281.2010.11081632

161. Collins-Kreiner, N., & Ram, Y. (2021). National tourism strategies during the Covid-19 pandemic. *Annals of Tourism Research*, *89*, 103076. https://doi.org/10.1016/j.annals.2020.103076

162. Comerio, N., & Strozzi, F. (2019). Tourism and its economic impact: A literature review using bibliometric tools. *Tourism Economics*, *25*(1), 109–131. https://doi.org/10.1177/1354816618793762

163. Cominelli, F., & Greffe, X. (2012). Intangible cultural heritage: Safeguarding for creativity. *City, Culture and Society*, *3*(4), 245–250. https://doi.org/10.1016/j.ccs.2012.10.003

164. Compagnucci, F., Gentili, A., Valentini, E., & Gallegati, M. (2022). Asymmetric responses to shocks: The role of structural change on resilience of the Euro area regions. *Applied Economics*, *54*(37), 4324–4355. https://doi.org/10.1080/00036846.2022.2030045

165. Corodescu-Roșca, E., Hamdouch, A., & Iațu, C. (2023). Innovation in urban governance and economic resilience. The case of two Romanian regional metropolises: Timișoara and Cluj Napoca. *Cities*, *132*, 104090. https://doi.org/10.1016/j.cities.2022.104090

166. Correa-Quezada, R., Álvarez-García, J., Del Río-Rama, M. D. la C., & Maldonado-Erazo, C. P. (2018). Role of Creative Industries as a Regional Growth Factor. *Sustainability*, *10*(5), Article 5. https://doi.org/10.3390/su10051649

167. Cortés-Jiménez, I. (2008). Which type of tourism matters to the regional economic growth? The cases of Spain and Italy. *International Journal of Tourism Research*, *10*(2), 127–139. https://doi.org/10.1002/jtr.646

168. Cortés-Jiménez, I., & Pulina, M. (2010). Inbound tourism and long-run economic growth. *Current Issues in Tourism*, *13*(1), 61–74. https://doi.org/10.1080/13683500802684411

169. Cörvers, F., & Mayhew, K. (2021). Regional inequalities: Causes and cures. *Oxford Review of Economic Policy*, *37*(1), 1–16. https://doi.org/10.1093/oxrep/graa067

170. Costantino, S., Francesca Cracolici, M., & Paul Elhorst, J. (2023). A spatial origin-destination approach for the analysis of local tourism demand in Italy. *Papers in Regional Science*, *102*(2), 393–419. https://doi.org/10.1111/pirs.12726

171. Council of Europe. (2019). *Roadmap for the Baltic Sea Region (Routes4U - Cultural Routes 2)*. European Institute of Cultural Routes. https://edoc.coe.int/en/cultural-heritage/7913-roadmap-for-the-baltic-sea-region-routes4u-cultural-routes-2.html

172. Cowell, M. (2020). Interpreting and defining economic resilience: Regional resilience in policy practice. In *Handbook on Regional Economic Resilience* (pp. 263–279). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781785360855/9781785360855.00022.xml

173. Crescenzi, R., Luca, D., & Milio, S. (2016). The geography of the economic crisis in Europe: National macroeconomic conditions, regional structural factors and short-term economic performance. *Cambridge Journal of Regions, Economy and Society*, *9*(1), 13–32. https://doi.org/10.1093/cjres/rsv031

174. Csapo, J. (2012). The Role and Importance of Cultural Tourism in Modern Tourism Industry. In M. Kasimoglu (Ed.), *Strategies for Tourism Industry—Micro and Macro Perspectives*. InTech. https://doi.org/10.5772/38693

175. Cuccia, T., Guccio, C., & Rizzo, I. (2016). The effects of UNESCO World Heritage List inscription on tourism destinations performance in Italian regions. *Economic Modelling*, *53*, 494–508. https://doi.org/10.1016/j.econmod.2015.10.049

176. Culiuc, A. (2014). *Determinants of International Tourism*. IMF Working Papers. https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Determinants-of-International-Tourism-41549

177. Curtale, R., Batista e Silva, F., Proietti, P., & Barranco, R. (2023). Impact of COVID-19 on tourism demand in European regions—An analysis of the factors affecting loss in number of guest nights. *Annals of Tourism Research Empirical Insights*, *4*(2), 100112. https://doi.org/10.1016/j.annale.2023.100112

178. da Costa, R. A., Silva, J. C., & Morais, D. (2023). Tourism and Development in Lagging Regions. In F. Teles, C. Rodrigues, F. Ramos, & A. Botelho (Eds.), *Territorial Innovation in Less Developed Regions: Governance, Technologies, and Sustainability* (pp. 267–283). Springer International Publishing. https://doi.org/10.1007/978-3-031-20577-4_13

179. Dalle Nogare, C., & Devesa, M. (2023). *Heritage, tourism and local development*. https://journals.sagepub.com/pb-assets/Icons/TE-SF-Heritage%20tourism%20local%20development-1676371690723.pdf

180. Dall'erba, S., & Llamosas-Rosas, I. (2021). Spatial Policy for Growth and Equity: A Forward Look. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 799–816). Springer. https://doi.org/10.1007/978-3-662-60723-7_21

181. Davies, S. (2011). Regional resilience in the 2008–2010 downturn: Comparative evidence from European countries. *Cambridge Journal of Regions, Economy and Society*, *4*(3), 369–382. https://doi.org/10.1093/cjres/rsr019
182. Dawley, S., Pike, A., & Tomaney, J. (2010). Towards the Resilient Region? *Local Economy*, *25*(8), 650–667. https://doi.org/10.1080/02690942.2010.533424
183. De Siano, R., & Canale, R. R. (2022). Controversial effects of tourism on economic growth: A spatial analysis on Italian provincial data. *Land Use Policy*, *117*, 106081. https://doi.org/10.1016/j.landusepol.2022.106081
184. De Siano, R., & Canale, R. R. (2024). The role of tourism in European regions' economic recovery: A spatial perspective. *Tourism Economics*, 13548166241248679. https://doi.org/10.1177/13548166241248679
185. De Siano, R., Leone Sciabolazza, V., & Sapio, A. (2020). Economic Resilience and Regional Disparities: The Value Added of Spatial Analysis. In R. De Siano, V. Leone Sciabolazza, & A. Sapio (Eds.), *Regional Resilience to Climate and Environmental Shocks: A Spatial Econometric Perspective* (pp. 7–29). Springer International Publishing. https://doi.org/10.1007/978-3-030-54588-8_2
186. Delaney, A. E., & Frangoudes, K. (2024). Coastal and maritime cultural heritage: From the European Union to East Asia and Latin America. *Maritime Studies*, *23*(2), 26. https://doi.org/10.1007/s40152-024-00369-x
187. Dellisanti, R. (2023a). CCIs and Regional Resilience in Transition Periods. Heterogeneity in Advanced and Lagging EU Regions. In *Cities and Regions in Transition* (pp. 63–82). L'Associazione Italiana di Scienze Regionali.
188. Dellisanti, R. (2023b). The Role of CCIs for Local Development in Europe. In R. Dellisanti (Ed.), *Cultural and Creative Industries and Regional Development: Creativity Where and Why* (pp. 189–204). Springer International Publishing. https://doi.org/10.1007/978-3-031-29624-6_7
189. Di Caro, P. (2017). Testing and explaining economic resilience with an application to Italian regions. *Papers in Regional Science*, *96*(1), 93–113. https://doi.org/10.1111/pirs.12168
190. Di Caro, P., & Fratesi, U. (2018). Regional determinants of economic resilience. *The Annals of Regional Science*, *60*(2), 235–240. https://doi.org/10.1007/s00168-017-0858-x
191. Di Caro, P., & Fratesi, U. (2022). The role of Cohesion Policy for sustaining the resilience of European regional labour markets during different crises. *Regional Studies*, *0*(0), 1–17. https://doi.org/10.1080/00343404.2022.2118252
192. Di Marcoberardino, D., & Cucculelli, M. (2024). "Natural" disasters and regional governance: Evidence from European NUTS-3 regions. *Papers in Regional Science*, *103*, 100003. https://doi.org/10.1016/j.pirs.2024.100003
193. Di Pietro, F., Lecca, P., & Salotti, S. (2021). Regional economic resilience in the European Union: A numerical general equilibrium analysis. *Spatial Economic Analysis*, *16*(3), 287–312. https://doi.org/10.1080/17421772.2020.1846768
194. DiBiase, D. (2014). *Nature of Geographic Information: An Open Geospatial Textbook*. https://ecampusontario.pressbooks.pub/natureofgis/
195. Diemer, A., Iammarino, S., Rodríguez-Pose, A., & Storper, M. (2022). The Regional Development Trap in Europe. *Economic Geography*, *98*(5), 487–509. https://doi.org/10.1080/00130095.2022.2080655
196. Dijkstra, L., Garcilazo, E., & McCann, P. (2015). The effects of the global financial crisis on European regions and cities. *Journal of Economic Geography*, *15*(5), 935–949.

197. Dijkstra, L., Poelman, H., & Ackermans, L. (2019). *Road Transport Performance in Europe, Introducing A New Accessibility Framework*. Publications Office of the European Union.

198. Dijkstra, L., Poelman, H., & Rodríguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies, 54*(6), 737–753. https://doi.org/10.1080/00343404.2019.1654603

199. Diodato, D., & Weterings, A. B. R. (2015). The resilience of regional labour markets to economic shocks: Exploring the role of interactions among firms and workers. *Journal of Economic Geography*, *15*(4), 723–742. https://doi.org/10.1093/jeg/lbu030

200. Dogru, T., & Bulut, U. (2018). Is tourism an engine for economic recovery? Theory and empirical evidence. *Tourism Management*, *67*, 425–434. https://doi.org/10.1016/j.tourman.2017.06.014

201. Dogru, T., Bulut, U., & Sirakaya-Turk, E. (2021). Modeling tourism demand: Theoretical and empirical considerations for future research. *Tourism Economics*, *27*(4), 874–889. https://doi.org/10.1177/1354816619894460

202. Dogru, T., Marchio, E. A., Bulut, U., & Suess, C. (2019). Climate change: Vulnerability and resilience of tourism and the entire economy. *Tourism Management*, *72*, 292–305. https://doi.org/10.1016/j.tourman.2018.12.010

203. Đokić, I., Fröhlich, Z., & Rašić Bakarić, I. (2016). The impact of the economic crisis on regional disparities in Croatia. *Cambridge Journal of Regions, Economy and Society*, *9*(1), 179–195. https://doi.org/10.1093/cjres/rsv030

204. Donald, B., & Gray, M. (2019). The double crisis: In what sense a regional problem? *Regional Studies*, *53*(2), 297–308. https://doi.org/10.1080/00343404.2018.1490014

205. Dormann, C. F., Elith, J., Bacher, S., Buchmann, C., Carl, G., Carré, G., Marquéz, J. R. G., Gruber, B., Lafourcade, B., Leitão, P. J., Münkemüller, T., McClean, C., Osborne, P. E., Reineking, B., Schröder, B., Skidmore, A. K., Zurell, D., & Lautenbach, S. (2013). Collinearity: A review of methods to deal with it and a simulation study evaluating their performance. *Ecography*, *36*(1), 27–46. https://doi.org/10.1111/j.1600-0587.2012.07348.x

206. Dritsakis, N. (2012). Tourism Development and Economic Growth in Seven Mediterranean Countries: A Panel Data Approach. *Tourism Economics*, *18*(4), 801–816. https://doi.org/10.5367/te.2012.0140

207. Drukker, D. M., Peng, H., Prucha, I. R., & Raciborski, R. (2013). Creating and Managing Spatial-Weighting Matrices with the Spmat Command. *The Stata Journal*, *13*(2), 242–286. https://doi.org/10.1177/1536867X1301300202

208. Du, D., Lew, A. A., & Ng, P. T. (2016). Tourism and Economic Growth. *Journal of Travel Research*, *55*(4), 454–464. https://doi.org/10.1177/0047287514563167

209. Dubé, J., & Polèse, M. (2016a). Resilience Revisited: Assessing the Impact of the 2007–09 Recession on 83 Canadian Regions with Accompanying Thoughts on an Elusive Concept. *Regional Studies*, *50*(4), 615–628. https://doi.org/10.1080/00343404.2015.1020291

210. Dubé, J., & Polèse, M. (2016b). The view from a lucky country: Explaining the localised unemployment impacts of the Great Recession in Canada. *Cambridge Journal of Regions, Economy and Society*, *9*(1), 235–253. https://doi.org/10.1093/cjres/rsv025

211. Duda, S. (2022, October 14). Identifying and Addressing Multicollinearity in Regression Analysis. *Medium*. https://scottmduda.medium.com/identifying-and-addressing-multicollinearity-in-regression-analysis-ca86a21a347e

212. Dunford, M. (2020). Regional Inequalities. In *International Encyclopedia of Geography* (pp. 1–20). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118786352.wbieg0632.pub2

213. Duran, H. E., & Fratesi, U. (2023). Economic resilience and regionally differentiated cycles: Evidence from a turning point approach in Italy. *Papers in Regional Science*, *102*(2), 219–252. https://doi.org/10.1111/pirs.12725
214. Duro, J. A., Perez-Laborda, A., & Fernandez, M. (2022). Territorial tourism resilience in the COVID-19 summer. *Annals of Tourism Research Empirical Insights*, *3*(1), 100039. https://doi.org/10.1016/j.annale.2022.100039
215. Duro, J. A., Perez-Laborda, A., Turrion-Prats, J., & Fernández-Fernández, M. (2021). Covid-19 and tourism vulnerability. *Tourism Management Perspectives*, *38*, 100819. https://doi.org/10.1016/j.tmp.2021.100819
216. Duro, J. A., & Turrión-Prats, J. (2019). Tourism seasonality worldwide. *Tourism Management Perspectives*, *31*, 38–53. https://doi.org/10.1016/j.tmp.2019.03.010
217. Dwyer, L., Forsyth, P., & Dwyer, W. (2009). Tourism and Economic Development Three Tools of Analysis. *Tourism Recreation Research*, *34*(3), 307–318. https://doi.org/10.1080/02508281.2009.11081605
218. Eichengreen, B., Park, D., & Shin, K. (2024). Economic resilience: Why some countries recover more robustly than others from shocks. *Economic Modelling*, *136*, 106748. https://doi.org/10.1016/j.econmod.2024.106748
219. Eleftheriou, K., & Sambracos, E. (2019). Tourism–growth nexus and spatial spillovers: Evidence from Greece. *Tourism Economics*, *25*(2), 297–302. https://doi.org/10.1177/1354816618812565
220. Elekes, Z., Tóth, G., & Eriksson, R. (2024). Regional resilience and the network structure of inter-industry labour flows. *Regional Studies*, *0*(0), 1–15. https://doi.org/10.1080/00343404.2024.2355993
221. Elhorst, J. P. (2010). Applied Spatial Econometrics: Raising the Bar. *Spatial Economic Analysis*, *5*(1), 9–28. https://doi.org/10.1080/17421770903541772
222. Elhorst, J. P. (2014). *Spatial Econometrics: From Cross-Sectional Data to Spatial Panels*. Springer. https://doi.org/10.1007/978-3-642-40340-8
223. Elhorst, J. P. (2018). *Spatial Econometrics: Thebasics*. https://www.diw.de/sixcms/media.php/17/gc_ws1819_Elhorst_presentation.pdf
224. Enilov, M., & Wang, Y. (2022). Tourism and economic growth: Multi-country evidence from mixed-frequency Granger causality tests. *Tourism Economics*, *28*(5), 1216–1239. https://doi.org/10.1177/1354816621990155
225. Espeso-Molinero, P. (2022). Trends in cultural tourism. *Smart Tourism*, *3*(2), 2147. https://doi.org/10.54517/st.v3i2.2147
226. ESPON. (2006). *Impacts of cultural heritage and identity*. ESPON. https://www.espon.eu/programme/projects/espon-2006/thematic-projects/impacts-cultural-heritage-and-identity
227. ESPON. (2018). *Material Cultural Heritage "Understanding the economic impact of cultural heritage."* ESPON. https://archive.espon.eu/sites/default/files/attachments/espon-Material%20Cultural%20Heritage%20%E2%80%9CUnderstanding%20the%20economic%20impact%20of%20c....pdf
228. ESPON. (2020). *Synergetic relations between Cultural Heritage and Tourism as driver for territorial development: ESPON evidence*. ESPON. https://archive.espon.eu/sites/default/files/attachments/Topic%20paper%20-%20Tourism_1.pdf

229. ETC. (2022). *Performance of European Tourism Before, During and Beyond the Covid-19 Pandemic*. European Travel Commission. https://etc-corporate.org/reports/performance-of-european-tourism-before-during-and-beyond-the-covid-19-pandemic/
230. ETC. (2023). *European Tourism 2022 – Trends & Prospects (Q4/2022)*. European Travel Commission. https://etc-corporate.org/reports/european-tourism-2022-trends-prospects-q4-2022/
231. Eugenio-Martin, J. L., & Campos-Soria, J. A. (2014). Economic crisis and tourism expenditure cutback decision. *Annals of Tourism Research*, *44*, 53–73. https://doi.org/10.1016/j.annals.2013.08.013
232. Eugenio-Martin, J. L., Martín-Morales, N., & Sinclair, M. T. (2008). The Role of Economic Development in Tourism Demand. *Tourism Economics*, *14*(4), 673–690. https://doi.org/10.5367/000000008786440111
233. European Commission. (2007). *Strategy for the development of Euro-Mediterranean cultural heritage: Priorities from Mediterranean countries (2007–2013)*. Publications Office of the European Union. https://www.europeansources.info/record/strategy-for-the-development-of-euro-mediterranean-cultural-heritage-priorities-from-mediterranean-countries-2007-2013/
234. European Commission. (2014). *Commission Delegated Regulation (EU) No 522/2014 of 11 March 2014 supplementing Regulation (EU) No 1301/2013 of the European Parliament and of the Council with regard to the detailed rules concerning the principles for the selection and management of innovative actions in the area of sustainable urban development to be supported by the European Regional Development Fund*. http://data.europa.eu/eli/reg_del/2014/522/oj/eng
235. European Commission. (2016a). *EU strategic approach to Cultural Heritage*. https://s3platform.jrc.ec.europa.eu/documents/20125/288258/cultural heritage Rome 251116_Nigge.pdf/bb9b0eb6-82ff-d846-5352-c57e856f461d?version=1.1&t=1619526744980
236. European Commission. (2016b). *Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulation (EC) No 1059/2003 as regards the territorial typologies (Tercet)*. https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52016PC0788
237. European Commission. (2019). *Sustainable cultural tourism*. Publications Office of the European Union. https://data.europa.eu/doi/10.2766/400886
238. European Commission. (2021a). *Study on prioritisation in Smart Specialisation Strategies in the EU*. https://op.europa.eu/en/publication-detail/-/publication/fd1c28cd-fb18-11eb-b520-01aa75ed71a1/language-en
239. European Commission. (2021b). *The CulturEU funding guide: EU Funding Opportunities for the Cultural and Creative Sectors 2021-2027*. Publications Office of the European Union, 2021. https://doi.org/10.2766/028484
240. European Commission. (2021c, November 10). *Cultural and Creative Regional Ecosystems*. Smart Specialisation Platform. https://s3platform.jrc.ec.europa.eu
241. European Commission. (2022). *Transition pathway for tourism*. Publications Office of the European Union. https://data.europa.eu/doi/10.2873/344425
242. European Commission. (2023a). *Cultural heritage in regional policy | Culture and Creativity*. https://culture.ec.europa.eu/node/222
243. European Commission. (2023b). *EU competences in cultural heritage | Culture and Creativity*. https://culture.ec.europa.eu/cultural-heritage/eu-policy-for-cultural-heritage/eu-competences-in-cultural-heritage

244. European Commission. (2023c). *EU Tourism Dashboard*. https://tourism-dashboard.ec.europa.eu/
245. European Commission. (2023d). *European Capitals of Culture | Culture and Creativity*. https://culture.ec.europa.eu/policies/culture-in-cities-and-regions/european-capitals-of-culture
246. European Commission. (2024a). *Cultural Tourism*. https://single-market-economy.ec.europa.eu/sectors/tourism/eu-funding-and-businesses/funded-projects/cultural_en
247. European Commission. (2024b). *Social Innovation and TEchnologies for sustainable growth through participative cultural TOURism | TExTOUR Project | Fact Sheet | H2020*. CORDIS | European Commission. https://cordis.europa.eu/project/id/101004687
248. European Commission. (2024c). *Urban Data Platform Plus* [dataset]. https://urban.jrc.ec.europa.eu/
249. European Parliament. (2015). *REPORT towards an integrated approach to cultural heritage for Europe | A8-0207/2015 | European Parliament*. European Parliament. https://www.europarl.europa.eu/doceo/document/A-8-2015-0207_EN.html
250. Eurostat. (2019). *Methodological manual on territorial typologies—2018 edition*. Publications Office of the European Union. https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-008
251. Eurostat. (2023a). *NUTS - Nomenclature of territorial units for statistics—Eurostat*. https://ec.europa.eu/eurostat/web/nuts/background
252. Eurostat. (2023b). *Tourism in 2022 approaches pre-pandemic levels—Products Eurostat News—Eurostat*. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/DDN-20230118-1
253. Eurostat. (2023c). *Tourism statistics at regional level*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tourism_statistics_at_regional_level
254. Eurostat. (2024a). *Enterprises in cultural sectors*. https://ec.europa.eu/eurostat/cache/metadata/en/cult_ent_esms.htm
255. Eurostat. (2024b). *GISCO* [dataset]. https://ec.europa.eu/eurostat/web/gisco/overview
256. Eurostat. (2024c). *Most EU regions record an increase in real GDP in 2022—Eurostat*. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240220-2
257. Eurostat. (2024d). *National accounts and GDP*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=National_accounts_and_GDP
258. Eurostat. (2024e). *Tourism industry eclipses pre-pandemic levels in 2023—Eurostat*. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240116-1
259. Evenhuis, E. (2020). New directions in researching regional economic resilience and adaptation. In *Handbook on Regional Economic Resilience* (pp. 69–86). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781785360855/9781785360855.00010.xml
260. Ezcurra, R., & Rios, V. (2019). Quality of government and regional resilience in the European Union. Evidence from the Great Recession. *Papers in Regional Science*, *98*(3), 1267–1290. https://doi.org/10.1111/pirs.12417
261. Faggian, A., Gemmiti, R., Jaquet, T., & Santini, I. (2018). Regional economic resilience: The experience of the Italian local labor systems. *The Annals of Regional Science*, *60*(2), 393–410. https://doi.org/10.1007/s00168-017-0822-9
262. Falk, M., & Hagsten, E. (2022). Economics of cultural tourism. In *A Modern Guide to Tourism Economics* (pp. 311–329). Edward Elgar Publishing.

https://www.elgaronline.com/edcollchap/book/9781800378766/book-part-9781800378766-24.xml

263. Falk, M., Hagsten, E., & Lin, X. (2022). Importance of land characteristics for resilience of domestic tourism demand. *Tourism Recreation Research*, *0*(0), 1–12. https://doi.org/10.1080/02508281.2022.2116541

264. Farrell, B., & Twining-Ward, L. (2005). Seven Steps Towards Sustainability: Tourism in the Context of New Knowledge. *Journal of Sustainable Tourism*, *13*(2), 109–122. https://doi.org/10.1080/09669580508668481

265. Farsari, I. (2023). Exploring the nexus between sustainable tourism governance, resilience and complexity research. *Tourism Recreation Research*, *48*(3), 352–367. https://doi.org/10.1080/02508281.2021.1922828

266. Figini, P., & Patuelli, R. (2022). Estimating the Economic Impact of Tourism in the European Union: Review and Computation. *Journal of Travel Research*, *61*(6), 1409–1423. https://doi.org/10.1177/00472875211028322

267. Figini, P., Patuelli, R., Curtale, R., & Batista E Silva, F. (2022). *Socio-economic impacts of tourism in the European Union—A pilot estimation framework based on Tourism Satellite Accounts* (JRC Research Reports JRC130978). Publications Office of the European Union. https://econpapers.repec.org/paper/iptiptwpa/jrc130978.htm

268. Figini, P., & Vici, L. (2010). Tourism and Growth in a Cross Section of Countries. *Tourism Economics*, *16*(4), 789–805. https://doi.org/10.5367/te.2010.0009

269. Fingleton, B., Garretsen, H., & Martin, R. (2012). Recessionary Shocks and Regional Employment: Evidence on the Resilience of U.k. Regions*. *Journal of Regional Science*, *52*(1), 109–133. https://doi.org/10.1111/j.1467-9787.2011.00755.x

270. Fingleton, B., Garretsen, H., & Martin, R. (2015). Shocking aspects of monetary union: The vulnerability of regions in Euroland. *Journal of Economic Geography*, *15*(5), 907–934. https://doi.org/10.1093/jeg/lbu055

271. Fischer, M. M. (2011). A spatial Mankiw–Romer–Weil model: Theory and evidence. *The Annals of Regional Science*, *47*(2), 419–436. https://doi.org/10.1007/s00168-010-0384-6

272. Fischer, M. M., & Nijkamp, P. (Eds.). (2021). *Handbook of Regional Science*. Springer. https://doi.org/10.1007/978-3-662-60723-7

273. Fletcher, J., Gilbert, D., Fyall, A., & Wanhill, S. (2018). *Tourism: Principles and Practice* (6th ed.). Pearson Education UK. http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781405871310

274. Flew, T., & Kirkwood, K. (2021). The impact of COVID-19 on cultural tourism: Art, culture and communication in four regional sites of Queensland, Australia. *Media International Australia*, *178*(1), 16–20. https://doi.org/10.1177/1329878X20952529

275. Florax, R. J. G. M., Folmer, H., & Rey, S. J. (2003). Specification searches in spatial econometrics: The relevance of Hendry's methodology. *Regional Science and Urban Economics*, *33*(5), 557–579. https://doi.org/10.1016/S0166-0462(03)00002-4

276. Fonseca, N., & Sánchez Rivero, M. (2020). Granger Causality between Tourism and Income: A Meta-regression Analysis. *Journal of Travel Research*, *59*(4), 642–660. https://doi.org/10.1177/0047287519851189

277. Fratesi, U., & Perucca, G. (2018). Territorial capital and the resilience of European regions. *The Annals of Regional Science*, *60*(2), 241–264. https://doi.org/10.1007/s00168-017-0828-3

278. Frechtling, D. C. (2010). THE TOURISM SATELLITE ACCOUNT: A Primer. *Annals of Tourism Research*, *37*(1), 136–153. https://doi.org/10.1016/j.annals.2009.08.003

279. Fröhlich, K., & Hassink, R. (2018). Regional resilience: A stretched concept?*. *European Planning Studies*. https://www.tandfonline.com/doi/full/10.1080/09654313.2018.1494137
280. Furceri, D., Mazzola, F., & Pizzuto, P. (2022). Regional inequalities, economic crises and policies: An international panel analysis. *Applied Economics*, *54*(4), 484–505. https://doi.org/10.1080/00036846.2021.1963414
281. Gajewski, P. (2022). Regional resilience to the Covid-19 shock in Polish regions: How is it different from resilience to the 2008 Global Financial Crisis? *Regional Studies*, *Regional Science*, *9*(1), 672–684. https://doi.org/10.1080/21681376.2022.2137426
282. Gao, J., Xu, W., & Zhang, L. (2021). Tourism, economic growth, and tourism-induced EKC hypothesis: Evidence from the Mediterranean region. *Empirical Economics*, *60*(3), 1507–1529. https://doi.org/10.1007/s00181-019-01787-1
283. García del Hoyo, J. J., & Jiménez de Madariaga, C. (2024). Tourist flows and protection of cultural heritage in Andalusia (Spain): An econometric analysis with panel data. *Tourism Economics*, 13548166241255975. https://doi.org/10.1177/13548166241255975
284. George, A., Sunny, S., Kapoor, A., Saggu, J. K., Puri, P., Munjal, S., & Bamba, V. (2021). The Travel and Tourism Industry: Pandemic and Beyond. *Atna Journal of Tourism Studies*, *16*(1), Article 1. https://doi.org/10.12727/ajts.25.2
285. Giacometti, A., & Teräs, J. (2019). *Regional Economic and Social Resilience: An Exploratory In-Depth Study in the Nordic Countries*. Nordregio. https://urn.kb.se/resolve?urn=urn:nbn:se:norden:org:diva-5489
286. Giannakis, E., & Bruggeman, A. (2017). Determinants of regional resilience to economic crisis: A European perspective. *European Planning Studies*, *25*(8), 1394–1415. https://doi.org/10.1080/09654313.2017.1319464
287. Giannakis, E., & Bruggeman, A. (2020). Regional disparities in economic resilience in the European Union across the urban–rural divide. *Regional Studies*, *54*(9), 1200–1213. https://doi.org/10.1080/00343404.2019.1698720
288. Giannakis, E., Bruggeman, A., & Mamuneas, T. P. (2024). Regional economic resilience, productivity growth and sectoral interconnectedness. *Papers in Regional Science*, *103*(2), 100010. https://doi.org/10.1016/j.pirs.2024.100010
289. Giannakis, E., & Papadas, C. T. (2021). Spatial Connectivity and Regional Economic Resilience in Turbulent Times. *Sustainability*, *13*(20), Article 20. https://doi.org/10.3390/su132011289
290. Giannakis, E., Tsiotas, D., & Papadas, C. T. (2024). Unveiling the relationship between regional economic resilience and input-output network topology: Evidence from the European Union. *Regional Science Policy & Practice*, 100018. https://doi.org/10.1016/j.rspp.2024.100018
291. Giannini, T., & Bowen, J. P. (2022). Museums and Digital Culture: From Reality to Digitality in the Age of COVID-19. *Heritage*, *5*(1), Article 1. https://doi.org/10.3390/heritage5010011
292. Ginzarly, M., & Jordan Srour, F. (2022). Cultural heritage through the lens of COVID-19. *Poetics (Hague, Netherlands)*, *92*, 101622. https://doi.org/10.1016/j.poetic.2021.101622
293. Giorgi, E., Valderrey, F., & Montoya, M. A. (2021). Cultural Tourism and the Economic Recovery of Cities Post COVID-19. In M. A. Montoya, A. Krstikj, J. Rehner, & D. Lemus-Delgado (Eds.), *COVID-19 and Cities: Experiences, Responses, and Uncertainties* (pp. 219–234). Springer International Publishing. https://doi.org/10.1007/978-3-030-84134-8_13

294. Golinelli, G. M. (Ed.). (2015). *Cultural Heritage and Value Creation: Towards New Pathways*. Springer International Publishing. https://doi.org/10.1007/978-3-319-08527-2
295. Gómez-Ullate, M., Rieutort, L., Kamara, A., Santos, A. S., Pirra, A., & Solís, M. G. (2020). Demographic Challenges in Rural Europe and Cases of Resilience Based on Cultural Heritage Management. A Comparative Analysis in Mediterranean Countries Inner Regions. *European Countryside*, *12*(3), 408–431. https://doi.org/10.2478/euco-2020-0022
296. Gómez-Vega, M., Martín, J. C., & Picazo-Tadeo, A. J. (2021). Ranking World Tourism Competitiveness: A Comparison of Two Composite Indicators. In S. Suzuki, K. Kourtit, & P. Nijkamp (Eds.), *Tourism and Regional Science: New Roads* (pp. 15–35). Springer. https://doi.org/10.1007/978-981-16-3623-3_2
297. Goniewicz, K., Khorram-Manesh, A., Burkle, F. M., Hertelendy, A. J., & Goniewicz, M. (2023). The European Union's post-pandemic strategies for public health, economic recovery, and social resilience. *Global Transitions*, *5*, 201–209. https://doi.org/10.1016/j.glt.2023.10.003
298. Goodchild, M. F. (1992). Geographical information science. *International Journal of Geographical Information Systems*, *6*(1), 31–45. https://doi.org/10.1080/02693799208901893
299. Goodchild, M. F., & Longley, P. A. (2021). Geographic Information Science. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 1597–1614). Springer. https://doi.org/10.1007/978-3-662-60723-7_61
300. Gordon, R. A. (1968). Issues in Multiple Regression. *American Journal of Sociology*. https://doi.org/10.1086/224533
301. Gössling, S., & Schweiggart, N. (2022). Two years of COVID-19 and tourism: What we learned, and what we should have learned. *Journal of Sustainable Tourism*, *30*(4), 915–931. https://doi.org/10.1080/09669582.2022.2029872
302. Gössling, S., Scott, D., & Hall, C. M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, *29*(1), 1–20. https://doi.org/10.1080/09669582.2020.1758708
303. Grabner, S. M. (2021). Regional Economic Resilience: Review and Outlook. In R. Wink (Ed.), *Economic Resilience in Regions and Organisations* (pp. 21–55). Springer Fachmedien. https://doi.org/10.1007/978-3-658-33079-8_2
304. Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). McGraw-Hill.
305. Gunter, U., Önder, I., & Smeral, E. (2019). Scientific value of econometric tourism demand studies. *Annals of Tourism Research*, *78*, 102738. https://doi.org/10.1016/j.annals.2019.06.005
306. Gunter, U., Smeral, E., & Zekan, B. (2022). Forecasting Tourism in the EU after the COVID-19 Crisis. *Journal of Hospitality & Tourism Research*, 10963480221125130. https://doi.org/10.1177/10963480221125130
307. Gwenhure, Y., & Odhiambo, N. M. (2017). Tourism and economic growth: A review of international literature. *Tourism: An International Interdisciplinary Journal*, *65*(1), 33–44.
308. Hacker, B. (2021). *Unequal Europe. Tackling regional disparities in the EU*. Friedrich-Ebert-Stiftung. https://www.researchgate.net/publication/362478043_Unequal_Europe_Tackling_regional_disparities_in_the_EU
309. Haddad, E. A., Porsse, A. A., & Rabahy, W. (2013). Domestic Tourism and Regional Inequality in Brazil. *Tourism Economics*, *19*(1), 173–186. https://doi.org/10.5367/te.2013.0185

310. Haini, H., Wei Loon, P., Yong, S. K., & Husseini, S. (2023). Does Social Globalization Affect the Relationship Between International Tourism and Economic Growth? *Journal of Travel Research*, 00472875221146779. https://doi.org/10.1177/00472875221146779

311. Haining, R., & Li, G. (2021). Spatial Data and Spatial Statistics. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 1961–1983). Springer. https://doi.org/10.1007/978-3-662-60723-7_71

312. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*. https://doi.org/10.2753/MTP1069-6679190202

313. Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour*, *5*(4), 529–538. https://doi.org/10.1038/s41562-021-01079-8

314. Hall, C. M. (2010). Crisis events in tourism: Subjects of crisis in tourism. *Current Issues in Tourism*, *13*(5), 401–417. https://doi.org/10.1080/13683500.2010.491900

315. Halleck Vega, S., & Elhorst, J. P. (2015). The SLX Model. *Journal of Regional Science*, *55*(3), 339–363. https://doi.org/10.1111/jors.12188

316. Halleck Vega, S., & Elhorst, J. P. (2017). The SLX model: Extensions and the sensitivity of spatial spillovers to W. *Papeles de Economia Espanola*, *152*, 34–50.

317. Hara, T. (2008). *Quantitative Tourism Industry Analysis*. Routledge. https://doi.org/10.1016/B978-0-7506-8499-6.00003-5

318. Harb, G., & Bassil, C. (2021). Harnessing cross-region disparities to assess the impact of tourism on regional growth in Europe. *Current Issues in Tourism*, *24*(11), 1491–1504. https://doi.org/10.1080/13683500.2020.1829566

319. Harb, G., & Bassil, C. (2022). Regional Growth, Domestic and Foreign Tourism in NUTS Regions: New Insights from the Old Continent. *Journal of Travel Research*, *61*(2), 279–298. https://doi.org/10.1177/0047287520979673

320. Hassink, R., & Ma, M. (2017). Tourism area research and economic geography theories: Investigating the notions of co-evolution and regional innovation systems. In P. Brouder, S. Anton Clavé, A. Gill, & D. Ioannides (Eds.), *Tourism Destination Evolution*. Routledge.

321. Hayashi, K., Bentler, P. M., & Yuan, K.-H. (2011). 7—Structural Equation Modeling. In C. R. Rao, J. P. Miller, & D. C. Rao (Eds.), *Essential Statistical Methods for Medical Statistics* (pp. 202–234). North-Holland. https://doi.org/10.1016/B978-0-444-53737-9.50010-4

322. Hell, M., & Petrić, L. (2021). System Dynamics Approach to TALC Modeling. *Sustainability*, *13*(9), Article 9. https://doi.org/10.3390/su13094803

323. Hennebry, B. (2020). The determinants of economic resilience in rural regions. An examination of the Portuguese case. *Miscellanea Geographica*, *24*(1), 24–29. https://doi.org/10.2478/mgrsd-2020-0001

324. Herfindahl, O. C. (1950). *Concentration in the Steel Industry*. Columbia university.

325. Herrera-Gómez, M. (2022). *Spatial Econometrics with Stata: Exploratory Spatial Data Analysis (ESDA), Spatial Models for Cross-Sectional Data, Spatial Models for Panel Data.* https://doi.org/10.13140/RG.2.2.24440.93442

326. Herrero-Prieto, L. C., & Gómez-Vega, M. (2017). Cultural resources as a factor in cultural tourism attraction: Technical efficiency estimation of regional destinations in Spain. *Tourism Economics*, *23*(2), 260–280. https://doi.org/10.1177/1354816616656248

327. Hession, S. L., & Moore, N. (2011). A spatial regression analysis of the influence of topography on monthly rainfall in East Africa. *International Journal of Climatology*, *31*(10), 1440–1456. https://doi.org/10.1002/joc.2174

328. Higgins-Desbiolles, F. (2021). The “war over tourism”: Challenges to sustainable tourism in the tourism academy after COVID-19. *Journal of Sustainable Tourism*, *29*(4), 551–569. https://doi.org/10.1080/09669582.2020.1803334
329. Hill, E., St. Clair, T., Wial, H., Wolman, H., Atkins, P., Blumenthal, P., Ficenec, S., & Friedhoff, A. (2012). Economic shocks and regional economic resilience. In *Urban and Regional Policy and Its Effects* (Vol. 9780815722854, pp. 193–274). Brookings Institution Press. http://www.scopus.com/inward/record.url?scp=84896386778&partnerID=8YFLogxK
330. Hippe, S., Bertram, D., & Chilla, T. (2023). Convergence and resilience in border regions. *European Planning Studies*, *0*(0), 1–22. https://doi.org/10.1080/09654313.2023.2170214
331. Hirschman, A. O. (1964). The paternity of an Index. *American Economic Review*, *54*(5). https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=00028282&asa=N&AN=8726077&h=fpTMCxeXtwSlIHLnOcDjD0xA5frTBw3znKPdHDdRs%2BuKzJLCknmdp8YEGJruTIFzCU0I988KXVdxigCqkS78UA%3D%3D&crl=c
332. Holling, C. S. (1973). Resilience and Stability of Ecological Systems. *Annual Review of Ecology and Systematics*, *4*(1), 1–23. https://doi.org/10.1146/annurev.es.04.110173.000245
333. Holling, C. S. (1996). Engineering resilience versus ecological resilience. In P. Schulze (Ed.), *Engineering within ecological constraints* (pp. 31–44). National Academy Press.
334. Holm, J. R., & Østergaard, C. R. (2015). Regional Employment Growth, Shocks and Regional Industrial Resilience: A Quantitative Analysis of the Danish ICT Sector. *Regional Studies*, *49*(1), 95–112. https://doi.org/10.1080/00343404.2013.787159
335. Holzner, M. (2011). Tourism and economic development: The beach disease? *Tourism Management*, *32*(4), 922–933. https://doi.org/10.1016/j.tourman.2010.08.007
336. Hu, X., & Hassink, R. (2020). Adaptation, adaptability and regional economic resilience: A conceptual framework. In *Handbook on Regional Economic Resilience* (pp. 54–68). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781785360855/9781785360855.00009.xml
337. Hundt, C., & Grün, L. (2022). Resilience and specialization – How German regions weathered the Great Recession. *ZFW – Advances in Economic Geography*, *66*(2), 96–110. https://doi.org/10.1515/zfw-2021-0014
338. Hundt, C., & Holtermann, L. (2020). The role of national settings in the economic resilience of regions—Evidence from recessionary shocks in Europe from 1990 to 2014. *Growth and Change*, *51*(1), 180–206. https://doi.org/10.1111/grow.12356
339. Iacobucci, D., & Perugini, F. (2021). Entrepreneurial ecosystems and economic resilience at local level. *Entrepreneurship & Regional Development*. https://www.tandfonline.com/doi/full/10.1080/08985626.2021.1888318
340. Iammarino, S., Rodriguez-Pose, A., & Storper, M. (2019). Regional inequality in Europe: Evidence, theory and policy implications. *Journal of Economic Geography*, *19*(2), 273–298. https://doi.org/10.1093/jeg/lby021
341. Ibanescu, B.-C., Eva, M., & Gheorghiu, A. (2020). Questioning the Role of Tourism as an Engine for Resilience: The Role of Accessibility and Economic Performance. *Sustainability*, *12*(14), Article 14. https://doi.org/10.3390/su12145527
342. Ibanescu, B.-C., Eva, M., Gheorghiu, A., & Iatu, C. (2023). Tourism-Induced Resilience of Rural Destinations in Relation to Spatial Accessibility. *Applied Spatial Analysis and Policy*, *16*(3), 1237–1254. https://doi.org/10.1007/s12061-022-09439-1

343. ILO. (2023). *COVID-19 Country policy responses*. International Labour Organization. https://webapps.ilo.org/static/english/covid-19/country-policy-responses/covid-country-response-EuropeCentralAsia-2023-03-01.pdf
344. IMF. (2021). *Policy Responses to COVID19*. International Monetary Fund. https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19
345. Innerhofer, E., Fontanari, M., & Pechlaner, H. (Eds.). (2018). *Destination Resilience: Challenges and Opportunities for Destination Management and Governance*. Routledge. https://doi.org/10.4324/9780203701904
346. Ioannides, D., & Gyimóthy, S. (2020). The COVID-19 crisis as an opportunity for escaping the unsustainable global tourism path. *Tourism Geographies*, *22*(3), 624–632. https://doi.org/10.1080/14616688.2020.1763445
347. Jang, S., & Kim, J. (2022). Tourism and regional economics. In *A Modern Guide to Tourism Economics* (pp. 277–293). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/book/9781800378766/book-part-9781800378766-22.xml
348. Jelinčić, D. A., & Senkić, M. (2017). Creating a Heritage Tourism Experience. The Power of the Senses. *Etnološka Tribina*, *40*, Article 40. https://hrcak.srce.hr/ojs/index.php/etnoloska-tribina/article/view/6208
349. Jenkins, C. L. (2020). The role of government in the tourism sector in developing countries: A perspective article. *Tourism Review*, *75*(1), 203–206. https://doi.org/10.1108/TR-04-2019-0142
350. Jiao, X., Li, G., Qiu, R. T. R., & Chen, J. L. (2024). Analyzing Destination Resilience From A Spatiotemporal Perspective. *Journal of Travel Research*, 00472875241245048. https://doi.org/10.1177/00472875241245048
351. Jucan, C. N., & Jucan, M. S. (2013). Travel and Tourism as a Driver of Economic Recovery. *Procedia Economics and Finance*, *6*, 81–88. https://doi.org/10.1016/S2212-5671(13)00117-2
352. Jurlin, K. (2022). Were Culture and Heritage Important for the Resilience of Tourism in the COVID-19 Pandemic? *Journal of Risk and Financial Management*, *15*(5), Article 5. https://doi.org/10.3390/jrfm15050205
353. Kamran, M. (2022). Role of cultural heritage in promoting the resilience of linear/critical infrastructure system with the enhancement of economic dimension of resilience: A critical review. *International Journal of Construction Management*, *22*(7), 1345–1354. https://doi.org/10.1080/15623599.2020.1711493
354. Karabulut, G., Bilgin, M. H., Demir, E., & Doker, A. C. (2020). How pandemics affect tourism: International evidence. *Annals of Tourism Research*, *84*, 102991. https://doi.org/10.1016/j.annals.2020.102991
355. Katircioglu, S. (2009a). Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for cointegration. *Tourism Management*, *30*(1), 17–20. https://doi.org/10.1016/j.tourman.2008.04.004
356. Katircioglu, S. (2009b). Testing the Tourism-Led Growth hypothesis: The case of Malta. *Acta Oeconomica*, *59*(3), 331–343. https://doi.org/10.1556/aoecon.59.2009.3.4
357. Kato, K. (2018). Debating Sustainability in Tourism Development: Resilience, Traditional Knowledge and Community: A Post-disaster Perspective. *Tourism Planning & Development*, *15*(1), 55–67. https://doi.org/10.1080/21568316.2017.1312508

358. Khlystova, O., & Kalyuzhnova, Y. (2023). The impact of the creative industries and digitalization on regional resilience and productive entrepreneurship. *The Journal of Technology Transfer*. https://doi.org/10.1007/s10961-023-10020-2
359. Kim, A., Lim, J., & Colletta, A. (2023). How regional economic structure matters in the era of COVID-19: Resilience capacity of U.S. states. *The Annals of Regional Science*, *70*(1), 159–185. https://doi.org/10.1007/s00168-022-01134-w
360. Kim, H., Chen, M.-H., & Jang, S. "Shawn." (2006). Tourism expansion and economic development: The case of Taiwan. *Tourism Management*, *27*(5), 925–933. https://doi.org/10.1016/j.tourman.2005.05.011
361. Kim, H., & Marcouiller, D. W. (2015). Considering disaster vulnerability and resiliency: The case of hurricane effects on tourism-based economies. *The Annals of Regional Science*, *54*(3), 945–971. https://doi.org/10.1007/s00168-015-0707-8
362. Kitsos, A., & Bishop, P. (2018). Economic resilience in Great Britain: The crisis impact and its determining factors for local authority districts. *The Annals of Regional Science*, *60*(2), 329–347. https://doi.org/10.1007/s00168-016-0797-y
363. Kitsos, T., Grabner, S. M., & Carrascal-Incera, A. (2023). Industrial Embeddedness and Regional Economic Resistance in Europe. *Economic Geography*, *99*(3), 227–252. https://doi.org/10.1080/00130095.2023.2174514
364. Koçak, E., Dogru, T., Shehzad, K., & Bulut, U. (2023). The economic implications of the COVID-19 outbreak on tourism industry: Empirical evidence from Turkey. *Tourism Economics*, *29*(3), 742–758. https://doi.org/10.1177/13548166211067188
365. Kocak, E., Okumus, F., & Altin, M. (2023). Global pandemic uncertainty, pandemic discussion and visitor behaviour: A comparative tourism demand estimation for the US. *Tourism Economics*, *29*(5), 1225–1250. https://doi.org/10.1177/13548166221100692
366. Kopczewska, K. (2022). *Spatial Econometrics in R*.
367. Kopczewska, K., & Elhorst, P. (2024). New developments in spatial econometric modelling. *Spatial Economic Analysis*, *19*(1), 1–7. https://doi.org/10.1080/17421772.2023.2281173
368. Kostakis, I., & Lolos, S. (2024). Uncovering the impact of cultural heritage on economic growth: Empirical evidence from Greek regions, 2000–2019. *The Annals of Regional Science*. https://doi.org/10.1007/s00168-024-01280-3
369. Kostakis, I., Lolos, S., & Doulgeraki, C. (2020, January). *Cultural Heritage led Growth: Regional evidence from Greece (1998-2016)* [MPRA Paper]. https://mpra.ub.uni-muenchen.de/98443/
370. Koufodontis, N. I., & Gaki, E. (2022). UNESCO urban world heritage sites: Tourists' awareness in the era of social media. *Cities*, *127*, 103744. https://doi.org/10.1016/j.cities.2022.103744
371. Kourtit, K., & Nijkamp, P. (2019). Creative actors and historical–cultural assets in urban regions. *Regional Studies*, *53*(7), 977–990. https://doi.org/10.1080/00343404.2018.1541077
372. Kourtit, K., Nijkamp, P., & Banica, A. (2023). An analysis of natural disasters' effects – A global comparative study of 'Blessing in Disguise.' *Socio-Economic Planning Sciences*, *88*, 101599. https://doi.org/10.1016/j.seps.2023.101599
373. Kovač, D. (2024). *Utjecaj percepcije prijetnje na namjeru upravljanja kibernetičkim rizicima: Uloga kognitivnih pristranosti i emocija* [Info:eu-repo/semantics/doctoralThesis, University of Split. Faculty of Economics Split]. https://urn.nsk.hr/urn:nbn:hr:124:499586
374. Kožić, I. (2019). Can tourism development induce deterioration of human capital? *Annals of Tourism Research*, *77*, 168–170. https://doi.org/10.1016/j.annals.2018.12.018

375. Kožić, I., Arčabić, V., & Sever, I. (2022). Tourism and Business Cycles: Does the Relationship Fade Away? *Zagreb International Review of Economics & Business*, *25*(1), 117–132. https://doi.org/10.2478/zireb-2022-0007

376. Kronenberg, K., & Fuchs, M. (2022). The socio-economic impact of regional tourism: An occupation-based modelling perspective from Sweden. *Journal of Sustainable Tourism*, *30*(12), 2785–2805. https://doi.org/10.1080/09669582.2021.1924757

377. Krugman, P. (1998). What's new about the new economic geography? *Oxford Review of Economic Policy*, *14*(2), 7–17. https://doi.org/10.1093/oxrep/14.2.7

378. Kubara, M., & Kopczewska, K. (2024). Akaike information criterion in choosing the optimal k-nearest neighbours of the spatial weight matrix. *Spatial Economic Analysis*, *19*(1), 73–91. https://doi.org/10.1080/17421772.2023.2176539

379. Kuliš, Z. (2023). Heritage and territory: Tangible and intangible cultural resources as drivers of regional development in Croatia. *Conference Proceedings*, 62–72. https://www.impactour.eu/system/files/2023-07/ICCTA%202023%20-%20conference%20proceedings.pdf

380. Kuliš, Z., Ibanescu, B., Šimundić, B., & Neuts, B. (2023). *Navigating Turbulent Times: A Spatial-Econometric Analysis of Tourism Resilience in the EU Regions*. 62nd ERSA Congress Urban Challenges and Sustainable Technological Revolution, Alicante, Spain.

381. Kuliš, Z., Šimundić, B., & Kuliš, B. (2022). Re-Orientation as a Tool for Resistance and Recovery: Analysis of Regional Economic Resilience in Croatian Nuts 3 Regions. *Proceedings of FEB Zagreb International Odyssey Conference on Economics and Business*, *4*(1), 272–287. https://www.proquest.com/docview/2688131348/abstract/236E382194A2457FPQ/1

382. Kuliš, Z., Šimundić, B., & Pivčević, S. (2018). The Analysis of Tourism and Economic Growth Relationship in Central and Eastern European Countries. In A. Karasavvoglou, S. Goić, P. Polychronidou, & P. Delias (Eds.), *Economy, Finance and Business in Southeastern and Central Europe* (pp. 537–551). Springer International Publishing. https://doi.org/10.1007/978-3-319-70377-0_37

383. Kumar, N. N., & Patel, A. (2023). Modelling structural breaks in the tourism-led growth hypothesis. *Current Issues in Tourism*, 1–9. https://doi.org/10.1080/13683500.2023.2245954

384. Kumar, R. R., & Stauvermann, P. J. (2023). Tourism and economic growth in the Pacific region: Evidence from five small island economies. *Journal of the Asia Pacific Economy*, *28*(3), 894–921. https://doi.org/10.1080/13547860.2021.1944796

385. Kvasina, A. (2024). *Utjecaj (ne)usklađenosti regulatornih fokusa osnivačkog upravljačkog tima poduzetničkog pothvata na inovaciju poslovnog modela: Moderacijske uloge konkurentskog intenziteta i relativne pozicije na tržištu* [Info:eu-repo/semantics/doctoralThesis, University of Split. Faculty of economics Split]. https://urn.nsk.hr/urn:nbn:hr:124:758493

386. Kvítková, Z., & Petru, Z. (2023). Cultural UNESCO Heritage in COVID-19 Pandemic Times. *Academica Turistica - Tourism and Innovation Journal*, *16*(1), Article 1. https://academica.turistica.si/index.php/AT-TIJ/article/view/521

387. Kyriacou, M., Phillips, P. C. B., & Rossi, F. (2023). Continuously Updated Indirect Inference in Heteroskedastic Spatial Models. *Econometric Theory*, *39*(1), 107–145. https://doi.org/10.1017/S0266466621000384

388. La Sala, P., Conto, F., Conte, A., & Fiore, M. (2016). Cultural Heritage in Mediterranean Countries: The Case of an IPA Adriatic Cross Border Cooperation Project. *International Journal of Euro-Mediterranean Studies*, *9*, 31–50.

389. Lacey, E. A., Massad, J. P., & Utz, R. J. (2022). *A Review of Fiscal Policy Responses to COVID-19* (Equitable Growth, Finance and Institutions Insight). World Bank Group.

https://documents.worldbank.org/en/publication/documents-reports/documentdetail/396221624945597996/a-review-of-fiscal-policy-responses-to-covid-19
390. Lacher, R. G., Oh, C.-O., Jodice, L. W., & Norman, W. C. (2013). The Role of Heritage and Cultural Elements in Coastal Tourism Destination Preferences: A Choice Modeling–Based Analysis. *Journal of Travel Research*, *52*(4), 534–546. https://doi.org/10.1177/0047287512475215
391. Lang, V., Redeker, N., & Bischof, D. (2023). *Place-Based Policies and Inequality Within Regions*. OSF Preprints. https://doi.org/10.31219/osf.io/2xmzj
392. Lanza, A., & Pigliaru, F. (2000). Why are Tourism Countries Small and Fast-Growing? In A. Fossati & G. Panella (Eds.), *Tourism and Sustainable Economic Development* (pp. 57–69). Springer US. https://doi.org/10.1007/978-1-4615-4321-3_3
393. Lavalle, C., Silva, F. B. E., Baranzelli, C., Jacobs-Crisioni, C., Kompil, M., Perpiña Castillo, C., Vizcaino, P., Ribeiro Barranco, R., Vandecasteele, I., Kavalov, B., Aurambout, J.-P., Kucas, A., Siragusa, A., & Auteri, D. (2020). The LUISA Territorial Modelling Platform and Urban Data Platform: An EU-Wide Holistic Approach. In E. Medeiros (Ed.), *Territorial Impact Assessment* (pp. 177–194). Springer International Publishing. https://doi.org/10.1007/978-3-030-54502-4_10
394. Le Gallo, J. (2021). Cross-Section Spatial Regression Models. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 2117–2139). Springer. https://doi.org/10.1007/978-3-662-60723-7_85
395. Lee, L.-F. (2004). Asymptotic Distributions of Quasi-Maximum Likelihood Estimators for Spatial Autoregressive Models. *Econometrica*, *72*(6), 1899–1925. https://doi.org/10.1111/j.1468-0262.2004.00558.x
396. Lee, Y.-J. A., Kim, J., Jang, S., Ash, K., & Yang, E. (2021). Tourism and economic resilience. *Annals of Tourism Research*, *87*, 103024. https://doi.org/10.1016/j.annals.2020.103024
397. Lemke, L. K.-G., Sakdapolrak, P., & Trippl, M. (2023). Unresolved issues in regional economic resilience: Conceptual ways forward. *Progress in Human Geography*, 03091325231191242. https://doi.org/10.1177/03091325231191242
398. LeSage, J. P. (2014a). Spatial econometric panel data model specification: A Bayesian approach. *Spatial Statistics*, *9*, 122–145. https://doi.org/10.1016/j.spasta.2014.02.002
399. LeSage, J. P. (2014b). What Regional Scientists Need to Know about Spatial Econometrics. *The Review of Regional Studies*, *44*(1), 13–32.
400. LeSage, J. P. (2015). *Chapter 1: Spatial econometrics*. https://www.elgaronline.com/edcollchap/edcoll/9780857932662/9780857932662.00007.xml
401. LeSage, J. P., & Pace, R. K. (2008). Spatial Econometric Modeling of Origin-Destination Flows. *Journal of Regional Science*, *48*(5), 941–967. https://doi.org/10.1111/j.1467-9787.2008.00573.x
402. LeSage, J. P., & Pace, R. K. (2009). *Introduction to Spatial Econometrics*. Taylor & Francis Group. http://enistat.lecture.ub.ac.id/files/2013/02/James_LeSage_Robert_Kelley_Pace-Introduction_to_Spatial_Econometrics_Statistics___A_Series_of_Textbooks_and_Monographs-Chapman_and_Hall_CRC2009.pdf
403. LeSage, J. P., & Pace, R. K. (2014). The Biggest Myth in Spatial Econometrics. *Econometrics*, *2*(4), Article 4. https://doi.org/10.3390/econometrics2040217

404. LeSage, J. P., & Pace, R. K. (2021). Interpreting Spatial Econometric Models. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 2201–2218). Springer. https://doi.org/10.1007/978-3-662-60723-7_91

405. Lew, A. A. (2014). Scale, change and resilience in community tourism planning. *Tourism Geographies*, *16*(1), 14–22. https://doi.org/10.1080/14616688.2013.864325

406. Lew, A. A., & Cheer, J. M. (2018). Environmental change, resilience and tourism: Definitions and frameworks. In *Tourism Resilience and Adaptation to Environmental Change: Definitions and Frameworks* (pp. 3–12). Routledge. https://doi.org/10.4324/9781315463971-2

407. Lew, A. A., Cheer, J. M., Haywood, M., Brouder, P., & Salazar, N. B. (2020). Visions of travel and tourism after the global COVID-19 transformation of 2020. *Tourism Geographies*, *22*(3), 455–466. https://doi.org/10.1080/14616688.2020.1770326

408. Li, K. X., Jin, M., & Shi, W. (2018). Tourism as an important impetus to promoting economic growth: A critical review. *Tourism Management Perspectives*, *26*, 135–142. https://doi.org/10.1016/j.tmp.2017.10.002

409. Li, L., Liu, S., Li, C., Zhang, P., & Lo, K. (2022). What Matters for Regional Economic Resilience Amid Multi Shock Situations: Structural or Agency? Evidence from Resource-Based Cities in China. *Sustainability*, *14*(9), Article 9. https://doi.org/10.3390/su14095701

410. Lim, C. (1997). Review of international tourism demand models. *Annals of Tourism Research*, *24*(4), 835–849. https://doi.org/10.1016/S0160-7383(97)00049-2

411. Lim, C. (1999). A Meta-Analytic Review of International Tourism Demand. *Journal of Travel Research*, *37*(3), 273–284. https://doi.org/10.1177/004728759903700309

412. Lim, C., & Zhu, L. (2017). Dynamic heterogeneous panel data analysis of tourism demand for Singapore. *Journal of Travel & Tourism Marketing*, *34*(9), 1224–1234. https://doi.org/10.1080/10548408.2017.1330173

413. Liu, A., Kim, Y. R., & Song, H. (2022). Toward an accurate assessment of tourism economic impact: A systematic literature review. *Annals of Tourism Research Empirical Insights*, *3*(2), 100054. https://doi.org/10.1016/j.annale.2022.100054

414. Liu, J., Nijkamp, P., & Lin, D. (2017). Urban-rural imbalance and Tourism-Led Growth in China. *Annals of Tourism Research*, *64*, 24–36. https://doi.org/10.1016/j.annals.2017.02.005

415. López-Villuendas, A. M., & del Campo, C. (2023). Regional Economic Disparities in Europe: Time-Series Clustering of NUTS 3 Regions. *International Regional Science Review*, *46*(3), 265–298. https://doi.org/10.1177/01600176221125703

416. Louca, C. (2006). Income and Expenditure in the Tourism Industry: Time Series Evidence from Cyprus. *Tourism Economics*, *12*(4), 603–617. https://doi.org/10.5367/000000006779319963

417. Lv, Z. (2019). Deepening or lessening? The effects of tourism on regional inequality. *Tourism Management*, *72*, 23–26. https://doi.org/10.1016/j.tourman.2018.11.009

418. Lykogianni, E., Mobilio, L., Procee, R., Airaghi, E., Kern, P., Le Gall, A., Krohn, C., & Vanhoutte, C. (2019). *Material Cultural Heritage as a Strategic Territorial Development Resource: Mapping Impacts Through a Set of Common European Socio-economic Indicators*. ESPON EGTC. https://www.espon.eu/sites/default/files/attachments/HERITAGE_Main%20Report.pdf

419. Lyu, T., & Tong, D. (2021). Impact of accessibility of land transportation networks on regional economic resilience: An empirical study of China. *International Journal of Shipping and Transport Logistics*, *13*(5), 515–537. https://doi.org/10.1504/IJSTL.2021.117276

420. Ma, T., Hong, T., & Zhang, H. (2015). Tourism spatial spillover effects and urban economic growth. *Journal of Business Research*, *68*(1), 74–80. https://doi.org/10.1016/j.jbusres.2014.05.005
421. MacFeely, S. (2009). *Developing tourism statistics at the sub-national level: A response – Issues and Insights*.
422. Madden, M., & Shipley, R. (2012). An analysis of the literature at the nexus of heritage, tourism, and local economic development. *Journal of Heritage Tourism*, *7*(2), 103–112. https://doi.org/10.1080/1743873X.2011.632483
423. Mandić, A., & Petrić, L. (2021). Introduction to Mediterranean Protected Areas in the Era of Overtourism. In A. Mandić & L. Petrić (Eds.), *Mediterranean Protected Areas in the Era of Overtourism: Challenges and Solutions* (pp. 1–12). Springer International Publishing. https://doi.org/10.1007/978-3-030-69193-6_1
424. Markman, T. (2020). *Social and Economic Effects of UNESCO World Heritage Designation* (SSRN Scholarly Paper 3673580). https://doi.org/10.2139/ssrn.3673580
425. Martin, R. (2012). Regional economic resilience, hysteresis and recessionary shocks. *Journal of Economic Geography*, *12*(1), 1–32. https://doi.org/10.1093/jeg/lbr019
426. Martin, R. (2021). Rebuilding the economy from the Covid crisis: Time to rethink regional studies? *Regional Studies, Regional Science*, *8*(1), 143–161. https://doi.org/10.1080/21681376.2021.1919191
427. Martin, R., & Gardiner, B. (2021). The Resilience of Britain's Core Cities to the Great Recession (with Implications for the Covid Recessionary Shock). In R. Wink (Ed.), *Economic Resilience in Regions and Organisations* (pp. 57–89). Springer Fachmedien. https://doi.org/10.1007/978-3-658-33079-8_3
428. Martin, R., & Sunley, P. (2015). On the notion of regional economic resilience: Conceptualization and explanation. *Journal of Economic Geography*, *15*(1), 1–42. https://doi.org/10.1093/jeg/lbu015
429. Martin, R., & Sunley, P. (2020). Regional economic resilience: Evolution and evaluation. In *Handbook on Regional Economic Resilience* (pp. 10–35). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781785360855/9781785360855.00007.xml
430. Martin, R., Sunley, P., Gardiner, B., & Tyler, P. (2016). How Regions React to Recessions: Resilience and the Role of Economic Structure. *Regional Studies*, *50*(4), 561–585. https://doi.org/10.1080/00343404.2015.1136410
431. Martini, B. (2020). Resilience, Resistance And Recoverability, Regional Economic Structure And Human Capital In Italy. Are They Related? *Applied Econometrics and International Development*, *20*(1), 47–62.
432. Matei, A. (2021). *Policy Recommendations for the Integration of Cultural and Natural Heritage (CNH) within Research and Innovation Strategies for Smart Specialisation (RIS3/4)*. https://www.ruritage.eu/wp-content/uploads/fv-contest/c1/Ruritage-Policy-Recommendations-www-pages.pdf?_t=1641901585
433. Matei, N.-A., García-León, D., Dosio, A., Batista e Silva, F., Ribeiro Barranco, R., & Ciscar Martinez, J. C. (2023). *Regional impact of climate change on European tourism demand*. Publications Office of the European Union. https://publications.jrc.ec.europa.eu/repository/handle/JRC131508
434. Matteucci, X., Koens, K., Calvi, L., & Moretti, S. (2022). Envisioning the futures of cultural tourism. *Futures*, *142*, 103013. https://doi.org/10.1016/j.futures.2022.103013

435. Matteucci, X., & Von Zumbusch, J. (2020). *Theoretical framework for cultural tourism in urban and regional destinations*. https://doi.org/10.5281/zenodo.4785433
436. Matthew, O. A., Ede, C., Osabohien, R., Ejemeyovwi, J., Ayanda, T., & Okunbor, J. (2021). Interaction Effect of Tourism and Foreign Exchange Earnings on Economic Growth in Nigeria. *Global Business Review, 22*(1), 7–22. https://doi.org/10.1177/0972150918812985
437. Matzana, V., Oikonomou, A., & Polemis, M. (2022). Tourism Activity as an Engine of Growth: Lessons Learned from the European Union. *Journal of Risk and Financial Management*, *15*(4), Article 4. https://doi.org/10.3390/jrfm15040177
438. Mavrin, I., Šebo, D., & Glavaš, J. (2022). Immersive Cultural Tourism in the Context of the COVID-19 Pandemic – Global Perspectives and Local Impacts. *Ekonomski Pregled*, *73*(5), 739–767. https://doi.org/10.32910/ep.73.5.4
439. Mazzola, F., Pizzuto, P., & Ruggieri, G. (2019). The role of tourism in island economic growth and resilience: A panel analysis for the European Mediterranean countries (2000–2015). *Journal of Economic Studies*, *46*(7), 1418–1436. https://doi.org/10.1108/JES-04-2019-0172
440. Mazzola, F., Pizzuto, P., & Ruggieri, G. (2022). Tourism and territorial growth determinants in insular regions: A comparison with mainland regions for some European countries (2008–2019). *Papers in Regional Science*, *101*(6), 1331–1382. https://doi.org/10.1111/pirs.12701
441. McCann, P., Ortega-Argilés, R., & Yuan, P.-Y. (2022). The Covid-19 shock in European regions. *Regional Studies*, *56*(7), 1142–1160. https://doi.org/10.1080/00343404.2021.1983164
442. McKercher, B., & Chon, K. (2004). The Over-Reaction to SARS and the Collapse of Asian Tourism. *Annals of Tourism Research, 31*(3), 716–719. https://doi.org/10.1016/j.annals.2003.11.002
443. Meşter, I., Simuţ, R., Meşter, L., & Bâc, D. (2023). An Investigation of Tourism, Economic Growth, CO2 Emissions, Trade Openness and Energy Intensity Index Nexus: Evidence for the European Union. *Energies*, *16*(11), Article 11. https://doi.org/10.3390/en16114308
444. Mikulić, D., & Petrić, L. (2014). Can culture and tourism be the foothold of urban regeneration? A Croatian case study. *Tourism: An International Interdisciplinary Journal*, *62*(4), 377–395.
445. Mikulić, D., Škrabić Perić, B., & Kuliš, Z. (2023). *The Role of Culture in Shaping Tourism Demand: Evidence from Panel Data Analysis of European Living Labs*. 14th International Conference on Challenges of Europe: Design for the Next Generation, Split-Bol, Croatia.
446. Mikulić, J. (2020). Tourism in a VUCA World. *Tourism: An International Interdisciplinary Journal*, *68*(2), 119.
447. Mikulić, J., Vizek, M., Stojčić, N., Payne, J. E., Čeh Časni, A., & Barbić, T. (2021). The effect of tourism activity on housing affordability. *Annals of Tourism Research*, *90*, 103264. https://doi.org/10.1016/j.annals.2021.103264
448. Milio, S., Durazzi, N., Garnizova, E., Janowski, P., Olechnicka, A., & Wojtowicz, D. (2014). *Impact of the economic crisis on social, economic and territorial cohesion of the European Union*. European Union. https://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/529066/IPOL-REGI_ET(2014)529066_EN.pdf

449. Miller, H. J. (2004). Tobler's First Law and Spatial Analysis. *Annals of the Association of American Geographers*, *94*(2), 284–289. https://doi.org/10.1111/j.1467-8306.2004.09402005.x
450. Miocevic, D., & Srhoj, S. (2023). How do governmental wage subsidies enhance SME resilience in the COVID-19 pandemic? *International Journal of Operations & Production Management*, *43*(13), 183–204. https://doi.org/10.1108/IJOPM-09-2022-0592
451. Mitra, S. K. (2019). Is tourism-led growth hypothesis still valid? *International Journal of Tourism Research*, *21*(5), 615–624. https://doi.org/10.1002/jtr.2285
452. Modica, M., & Reggiani, A. (2015). Spatial Economic Resilience: Overview and Perspectives. *Networks and Spatial Economics*, *15*(2), 211–233. https://doi.org/10.1007/s11067-014-9261-7
453. Morakabati, Y. (2020). A question of confidence. Is tourism as vulnerable to civil unrest as we think? A comparative analysis of the impact of Arab Spring on total reserves and tourism receipts. *International Journal of Tourism Research*, *22*(2), 252–265. https://doi.org/10.1002/jtr.2333
454. Moran, P. A. P. (1950). A Test for the Serial Independence of Residuals. *Biometrika*, *37*(1/2), 178–181. https://doi.org/10.2307/2332162
455. Morretta, V. (2021). Territorial capital in local economic endogenous development. *Regional Science Policy & Practice*, *13*(1), 103–120. https://doi.org/10.1111/rsp3.12317
456. Mur, J., & Angulo, A. (2009). Model selection strategies in a spatial setting: Some additional results. *Regional Science and Urban Economics*, *39*(2), 200–213. https://doi.org/10.1016/j.regsciurbeco.2008.05.018
457. Muštra, V., Šimundić, B., & Kuliš, Z. (2017). Effects of smart specialization on regional economic resilience in EU. *Revista de Estudios Regionales*, *110*, 175–195.
458. Muštra, V., Šimundić, B., & Kuliš, Z. (2020). Does innovation matter for regional labour resilience? The case of EU regions. *Regional Science Policy & Practice*, *12*(5), 955–970. https://doi.org/10.1111/rsp3.12348
459. Muštra, V., Šimundić, B., & Kuliš, Z. (2023). Effects of Smart Specialisation on Regional Labour Resilience. *Economy of Regions*, *19*(1), Article 1. https://doi.org/10.17059/ekon.reg.2023-1-11
460. Muštra, V., Škrabić Perić, B., & Pivčević, S. (2023). Cultural heritage sites, tourism and regional economic resilience. *Papers in Regional Science*, *102*(3), 465–482. https://doi.org/10.1111/pirs.12731
461. Naramski, M., Szromek, A. R., Herman, K., & Polok, G. (2022). Assessment of the Activities of European Cultural Heritage Tourism Sites during the COVID-19 Pandemic. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(1), 55. https://doi.org/10.3390/joitmc8010055
462. Navarro-Drazich, D., & Lorenzo, C. (2021). Sensitivity and vulnerability of international tourism by covid crisis: South America in context. *Research in Globalization*, *3*, 100042. https://doi.org/10.1016/j.resglo.2021.100042
463. Neuts, B. (2022). *Second policy report*. Zenodo. https://doi.org/10.5281/zenodo.7267011
464. Neuts, B., Matteucci, X., Von Zumbusch, J., Calvi, L., & Moretti, S. (2021). *First policy report*. https://doi.org/10.5281/zenodo.5873905
465. Neuts, B., van der Borg, J., Šimundić, B., & Kuliš, Z. (2023). *From Vulnerability to Resilience: Assessing the Role of Tourism in EU Regional Economies*. 14th International Conference on Challenges of Europe: Design for the Next Generation, Split-Bol, Croatia.

466. Ng, W.-K., Hsu, F.-T., Chao, C.-F., & Chen, C.-L. (2023). Sustainable Competitive Advantage of Cultural Heritage Sites: Three Destinations in East Asia. *Sustainability*, *15*(11), Article 11. https://doi.org/10.3390/su15118593

467. Nguyen, C. P., & Su, T. D. (2020). Domestic tourism spending and economic vulnerability. *Annals of Tourism Research*, *85*, 103063. https://doi.org/10.1016/j.annals.2020.103063

468. Nguyen, C. P., & Su, T. D. (2022). The Vulnerability Effect of International Tourism on a Destination's Economy. *Tourism Planning & Development*, *19*(6), 479–499. https://doi.org/10.1080/21568316.2021.1958916

469. Niavis, S., Papatheochari, T., Koutsopoulou, T., Coccossis, H., & Psycharis, Y. (2022). Considering regional challenges when prioritizing tourism policy interventions: Evidence from a Mediterranean community of projects. *Journal of Sustainable Tourism*, *30*(4), 663–684. https://doi.org/10.1080/09669582.2021.1876074

470. Niavis, S., Papatheochari, T., Psycharis, Y., Rodriguez, J., Font, X., & Martinez Codina, A. (2019). Conceptualising Tourism Sustainability and Operationalising Its Assessment: Evidence from a Mediterranean Community of Projects. *Sustainability*, *11*(15), Article 15. https://doi.org/10.3390/su11154042

471. Nientied, P., & Shutina, D. (2020). *Tourism in Transition: The post COVID-19 Aftermath in the Western Balkans*. https://doi.org/10.32034/CP-PPRESI-P01-02

472. Nijkamp, P., Ţigănaşu, R., Bănică, A., & Pascariu, G. C. (2024). Institutional adaptability: Its relevance for enhancing resilience and smart specialization capacity of the European Union's lagging regions. *Eurasian Geography and Economics*, *65*(1), 1–33. https://doi.org/10.1080/15387216.2022.2112254

473. Noonan, D. S., & Rizzo, I. (2017). Economics of cultural tourism: Issues and perspectives. *Journal of Cultural Economics*, *41*(2), 95–107. https://doi.org/10.1007/s10824-017-9300-6

474. Noonan, L. (2023). The role of culture as a determinant of tourism demand: Evidence from European cities. *International Journal of Tourism Cities*, *9*(1), 13–34. https://doi.org/10.1108/IJTC-07-2021-0154

475. Nowak, J.-J., Sahli, M., & Cortés-Jiménez, I. (2007). Tourism, Capital Good Imports and Economic Growth: Theory and Evidence for Spain. *Tourism Economics*, *13*(4), 515–536. https://doi.org/10.5367/000000007782696113

476. Ntounis, N., Parker, C., Skinner, H., Steadman, C., & Warnaby, G. (2022). Tourism and Hospitality industry resilience during the Covid-19 pandemic: Evidence from England. *Current Issues in Tourism*, *25*(1), 46–59. https://doi.org/10.1080/13683500.2021.1883556

477. Nunkoo, R., Seetanah, B., Jaffur, Z. R. K., Moraghen, P. G. W., & Sannassee, R. V. (2020). Tourism and Economic Growth: A Meta-regression Analysis. *Journal of Travel Research*, *59*(3), 404–423. https://doi.org/10.1177/0047287519844833

478. OECD. (2009). *The Impact of Culture on Tourism*. Organisation for Economic Co-operation and Development. https://www.oecd.org/industry/the-impact-of-culture-on-tourism-9789264040731-en.htm

479. OECD. (2016). *An OECD Review of Statistical Initiatives Measuring Tourism at Subnational Level*. Organisation for Economic Co-operation and Development. https://doi.org/10.1787/5jln3b32hq7h-en

480. OECD. (2021). *The territorial impact of COVID-19: Managing the crisis and recovery across levels of government*. Organisation for Economic Co-operation and Development.

https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-and-recovery-across-levels-of-government-a2c6abaf/#section-d1e364
481. OECD. (2022). *Maximising synergies between tourism and cultural and creative sectors*. Organisation for Economic Co-operation and Development. https://t4.oecd.org/cfe/leed/OECD-G20-TWG-Discussion-Paper-Tourism-Cultural-Creative-Sectors.pdf
482. Oh, C.-O. (2005). The contribution of tourism development to economic growth in the Korean economy. *Tourism Management*, *26*(1), 39–44. https://doi.org/10.1016/j.tourman.2003.09.014
483. Okafor, L. E., Khalid, U., & Burzynska, K. (2022). Does the level of a country's resilience moderate the link between the tourism industry and the economic policy response to the COVID-19 pandemic? *Current Issues in Tourism*, *25*(2), 303–318. https://doi.org/10.1080/13683500.2021.1956441
484. Oprea, F., Onofrei, M., Lupu, D., Vintila, G., & Paraschiv, G. (2020). The Determinants of Economic Resilience. The Case of Eastern European Regions. *Sustainability*, *12*(10), Article 10. https://doi.org/10.3390/su12104228
485. Orchiston, C., & Higham, J. E. S. (2016). Knowledge management and tourism recovery (de)marketing: The Christchurch earthquakes 2010–2011. *Current Issues in Tourism*, *19*(1), 64–84. https://doi.org/10.1080/13683500.2014.990424
486. Ord, K. (1975). Estimation Methods for Models of Spatial Interaction. *Journal of the American Statistical Association*, *70*(349), 120–126. https://doi.org/10.2307/2285387
487. Orsi, F., Cavaco, C., & Gil, J. (2024). From territorial capital to regional design: A multidimensional model for territorial analysis and scenario evaluation. *Planning Practice & Research*, *39*(1), 116–135. https://doi.org/10.1080/02697459.2022.2120490
488. Östh, J., Reggiani, A., & Galiazzo, G. (2015). Spatial economic resilience and accessibility: A joint perspective. *Computers, Environment and Urban Systems*, *49*, 148–159. https://doi.org/10.1016/j.compenvurbsys.2014.07.007
489. Östh, J., Reggiani, A., & Nijkamp, P. (2018). Resilience and accessibility of Swedish and Dutch municipalities. *Transportation*, *45*(4), 1051–1073. https://doi.org/10.1007/s11116-017-9854-3
490. Östh, J., Reggiani, A., & Nijkamp, P. (2023). Accessibility, population dynamics and regional economic resilience. In *Resilience and Regional Development* (pp. 30–50). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/book/9781035314058/book-part-9781035314058-9.xml
491. Ottaviani, D., Demiröz, M., Szemző, H., & De Luca, C. (2023). Adapting Methods and Tools for Participatory Heritage-Based Tourism Planning to Embrace the Four Pillars of Sustainability. *Sustainability*, *15*(6), Article 6. https://doi.org/10.3390/su15064741
492. Ozili, P. K. (2023). *The Acceptable R-Square in Empirical Modelling for Social Science Research* (SSRN Scholarly Paper 4128165). https://doi.org/10.2139/ssrn.4128165
493. Pablo-Romero, M., & Molina, J. A. (2013). Tourism and economic growth: A review of empirical literature. *Tourism Management Perspectives*, *8*, 28–41. https://doi.org/10.1016/j.tmp.2013.05.006
494. Pacelli, V., & Sica, E. (2020). *The Economics and Finance of Cultural Heritage: How to Make Tourist Attractions a Regional Economic Resource*. Routledge. https://doi.org/10.4324/9781003019398
495. Paci, R., & Marrocu, E. (2014). Tourism and regional growth in Europe. *Papers in Regional Science*, *93*(S1), S25–S50. https://doi.org/10.1111/pirs.12085

496. Page, S., Song, H., & Wu, D. C. (2012). Assessing the Impacts of the Global Economic Crisis and Swine Flu on Inbound Tourism Demand in the United Kingdom. *Journal of Travel Research*, *51*(2), 142–153. https://doi.org/10.1177/0047287511400754

497. Panzera, D., & Postiglione, P. (2022). The impact of regional inequality on economic growth: A spatial econometric approach. *Regional Studies*, *56*(5), 687–702. https://doi.org/10.1080/00343404.2021.1910228

498. Panzera, E. (2022). *Cultural Heritage and Territorial Identity: Synergies and Development Impact on European Regions*. Springer International Publishing. https://doi.org/10.1007/978-3-030-94468-1

499. Panzera, E., de Graaff, T., & de Groot, H. L. F. (2021). European cultural heritage and tourism flows: The magnetic role of superstar World Heritage Sites. *Papers in Regional Science*, *100*(1), 101–122. https://doi.org/10.1111/pirs.12562

500. Papatheochari, T., Niavis, S., Koutsopoulou, A., & Coccossis, H. (2021). Responsibility in Tourism Management: A Mediterranean Perspective. *Journal of Tourism Research*, *26*, 259–267.

501. Papatheodorou, A., & Pappas, N. (2017). Economic Recession, Job Vulnerability, and Tourism Decision Making: A Qualitative Comparative Analysis. *Journal of Travel Research*, *56*(5), 663–677. https://doi.org/10.1177/0047287516651334

502. Papatheodorou, A., Rosselló, J., & Xiao, H. (2010). Global Economic Crisis and Tourism: Consequences and Perspectives. *Journal of Travel Research*, *49*(1), 39–45. https://doi.org/10.1177/0047287509355327

503. Pappas, N., Michopoulou, E., & Farmaki, A. (2023). Tourism Innovation and Resilience during Uncertainty. *Tourism Planning & Development*, *20*(2), 135–137. https://doi.org/10.1080/21568316.2023.2176647

504. Pascariu, G. C., Iacobuta, A.-O., Pintilescu, C., & Țigănașu, R. (2021). Institutional Dynamics and Economic Resilience in Central and Eastern EU Countries. Relevance for Policies. *Transylvanian Review of Administrative Sciences*, *17*, 77–103. https://doi.org/10.24193/tras.SI2021.5

505. Pascariu, G. C., Ibănescu, B.-C., Nijkamp, P., & Kourtit, K. (2021). Tourism and Economic Resilience: Implications for Regional Policies. In S. Suzuki, K. Kourtit, & P. Nijkamp (Eds.), *Tourism and Regional Science: New Roads* (pp. 129–147). Springer. https://doi.org/10.1007/978-981-16-3623-3_8

506. Pascariu, G. C., & Ţigănaşu, R. (2014). Tourism and Sustainable Regional Development in Romania and France: An Approach from the Perspective of New Economic Geography. *Amfiteatru Economic Journal*, *16*(Special No. 8), 1089–1109.

507. Pasikowska-Schnass, M., & Widuto, A. (2022). *Culture and regional development*. European Parliament. https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733600/EPRS_BRI(2022)733600_EN.pdf

508. Patuelli, R., Mussoni, M., & Candela, G. (2016). The Effects of World Heritage Sites on Domestic Tourism: A Spatial Interaction Model for Italy. In R. Patuelli & G. Arbia (Eds.), *Spatial Econometric Interaction Modelling* (pp. 281–315). Springer International Publishing. https://doi.org/10.1007/978-3-319-30196-9_13

509. Pavelea, A. M., Pavel, A., Neamţu, B., & Kourtit, K. (2023). Is the creative class a shock absorber against an economic recession? Spatial labour market resilience in Romania. *Regional Studies*, *0*(0), 1–16. https://doi.org/10.1080/00343404.2023.2194314

510. Pavlić, I., Svilokos, T., & Šuman Tolić, M. (2015). Tourism, Real Effective Exchange Rate and Economic Growth: Empirical Evidence for Croatia. *International Journal of Tourism Research*, *17*(3), 282–291. https://doi.org/10.1002/jtr.1986
511. Payne, J. E., Lee, J., & Darden, S. (2023). The Convergence Dynamics of Per Capita International Tourist Arrivals. *The International Trade Journal*, *0*(0), 1–20. https://doi.org/10.1080/08853908.2023.2267153
512. Payne, J. E., & Mervar, A. (2010). Research Note: The Tourism–Growth Nexus in Croatia. *Tourism Economics*, *16*(4), 1089–1094. https://doi.org/10.5367/te.2010.0014
513. Payne, J. E., Nazlioglu, S., & Mervar, A. (2023). Economic policy uncertainty and international tourist arrivals: A disaggregated analysis of the Croatian Adriatic coast. *Tourism Economics*, *29*(4), 986–1004. https://doi.org/10.1177/13548166221078807
514. Pechlaner, H. (2000). Cultural heritage and destination management in the Mediterranean. *Thunderbird International Business Review*, *42*(4), 409–426. https://doi.org/10.1002/1520-6874(200007/08)42:4<409::AID-TIE4>3.0.CO;2-F
515. Peng, B., Song, H., Crouch, G. I., & Witt, S. F. (2015). A Meta-Analysis of International Tourism Demand Elasticities. *Journal of Travel Research*, *54*(5), 611–633. https://doi.org/10.1177/0047287514528283
516. Pérez-Rodríguez, J. V., Rachinger, H., & Santana-Gallego, M. (2022). Does tourism promote economic growth? A fractionally integrated heterogeneous panel data analysis. *Tourism Economics*, *28*(5), 1355–1376. https://doi.org/10.1177/1354816620980665
517. Pertoldi, M. (2016). *Smart Specialisation and Cultural Heritage: An overview*. Smart Specialisation and Cultural Heritage: an engine for Innovation and Growth, Rome, Italy. https://s3platform.jrc.ec.europa.eu/documents/20125/288258/Pertoldi_S3andCH_def.pptx/b019d9d0-8e21-ebc2-18d9-2661301b6c23?version=1.1&t=1619526739873
518. Petrakos, G., & Psycharis, Y. (2016). The spatial aspects of economic crisis in Greece. *Cambridge Journal of Regions, Economy and Society*, *9*(1), 137–152. https://doi.org/10.1093/cjres/rsv028
519. Petrić, L., Mandić, A., Pivčević, S., Škrabić Perić, B., Hell, M., Šimundić, B., Muštra, V., Mikulić, D., & Grgić, J. (2020). *Report on the most appropriate indicators related to the basic concepts*. https://doi.org/10.5281/zenodo.5336694
520. Petrić, L., & Pivčević, S. (2016). Community based tourism development—Insights from Split, Croatia. *Tourism & Hospitality Industry 2016, Congress Proceedings*, 294–307. https://econpapers.repec.org/paper/thoiscthi/22.htm
521. Petrić, L., Šimundić, B., & Pivčević, S. (2018). *Ekonomika turizma*. Ekonomski fakultet, Sveučilište u Splitu.
522. Petrić, L., Škrabić Perić, B., Hell, M., Kuliš, Z., Mandić, A., Pivčević, S., Šimundić, B., Muštra, V., Grgić, J., & Mikulić, D. (2021). *Report outlining the SRT framework*. https://doi.org/10.5281/zenodo.5336737
523. Petronela, T. (2016). The Importance of the Intangible Cultural Heritage in the Economy. *Procedia Economics and Finance*, *39*, 731–736. https://doi.org/10.1016/S2212-5671(16)30271-4
524. Piekkola, H., Suojanen, O., & Vainio, A. (2014). *Economic impact of museums*. Vaasan yliopisto. https://osuva.uwasa.fi/handle/10024/7859
525. Piergiovanni, R., Carree, M. A., & Santarelli, E. (2012). Creative industries, new business formation, and regional economic growth. *Small Business Economics*, *39*(3), 539–560. https://doi.org/10.1007/s11187-011-9329-4

526. Piras, G., & Sarrias, M. (2023). Heterogeneous spatial models in R: Spatial regimes models. *Journal of Spatial Econometrics*, *4*(1), 4. https://doi.org/10.1007/s43071-023-00034-1
527. Piriou, J. (2019). *The Tourist Region: A Co-Construction of Tourism Stakeholders*. John Wiley & Sons, Inc.
528. Pivac, S. (2010). *Statističke metode, e-nastavni materijal*. Ekonomski fakultet, Sveučilište u Splitu. https://www.croris.hr/crosbi/publikacija/rad-ostalo/747170
529. Pivčević, S., Čačija, L. N., & Bekan, A. B. (2024). Linking Destination Attributes and Overall Satisfaction in a Cultural UNESCO World Heritage Site Destination. In V. Katsoni & G. Cassar (Eds.), *Recent Advancements in Tourism Business, Technology and Social Sciences* (pp. 405–418). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-54338-8_22
530. Pivčević, S., Kuliš, Z., & Šerić, N. (2016). *The pull factors of tourism demand: A panel data analysis for Latin American and Caribbean countries*. 319–333. https://www.croris.hr/crosbi/publikacija/prilog-skup/704684
531. Podrug, D. (2022). *Utjecaj percipirane kvalitete na namjere ponašanja korisnika usluga ekonomije dijeljenja u prijevozu* [Info:eu-repo/semantics/doctoralThesis, University of Split. Faculty of Economics Split]. https://urn.nsk.hr/urn:nbn:hr:124:614883
532. Pola, A.-P. (2019). When Heritage Is Rural: Environmental Conservation, Cultural Interpretation and Rural Renaissance in Chinese Listed Villages. *Built Heritage*, *3*(2), 64–80. https://doi.org/10.1186/BF03545728
533. Pompili, T., Pisati, M., & Lorenzini, E. (2019). Determinants of international tourist choices in Italian provinces: A joint demand–supply approach with spatial effects. *Papers in Regional Science*, *98*(6), 2251–2273. https://doi.org/10.1111/pirs.12467
534. Pontarollo, N., & Serpieri, C. (2020). Towards regional renewal: A multilevel perspective for the EU. *Regional Studies*, *54*(6), 754–764. https://doi.org/10.1080/00343404.2019.1640357
535. Porter, J., Pinto, H., & Cruz, A. R. (2012). Economic resilience and tourism destinations: Eco and cultural responses to turbulence contexts in coastal areas. *Revista Turismo & Desenvolvimento*, *3*(17/18), 1727–1736.
536. Prayag, G., Muskat, B., & Dassanayake, C. (2024). Leading for Resilience: Fostering Employee and Organizational Resilience in Tourism Firms. *Journal of Travel Research*, *63*(3), 659–680. https://doi.org/10.1177/00472875231164984
537. Prezioso, M., Dorazio, A., & Pigliucci, M. (2020). *Topic Paper. Synergetic relations between Cultural Heritage and Tourism as driver for territorial development: ESPON evidence*. https://www.espon.eu/sites/default/files/attachments/Topic%20paper%20-%20Tourism_1.pdf
538. Price, S., Wilkinson, T., & Coles, T. (2022). Crisis? How small tourism businesses talk about COVID-19 and business change in the UK. *Current Issues in Tourism*, *25*(7), 1088–1105. https://doi.org/10.1080/13683500.2021.2023114
539. Proença, S., & Soukiazis, E. (2008). Tourism as an Economic Growth Factor: A Case Study for Southern European Countries. *Tourism Economics*, *14*(4), 791–806. https://doi.org/10.5367/000000008786440175
540. Provenzano, D., & Volo, S. (2022). Tourism recovery amid COVID-19: The case of Lombardy, Italy. *Tourism Economics*, *28*(1), 110–130. https://doi.org/10.1177/13548166211039702
541. Pudelko, F., Hundt, C., & Holtermann, L. (2018). Gauging two sides of regional economic resilience in Western Germany—Why sensitivity and recovery should not be lumped together. *Review of Regional Research*, *38*(2), 141–189. https://doi.org/10.1007/s10037-018-0124-4

542. Quaglia, L., & Verdun, A. (2023a). Explaining the response of the ECB to the COVID-19 related economic crisis: Inter-crisis and intra-crisis learning. *Journal of European Public Policy*, *30*(4), 635–654. https://doi.org/10.1080/13501763.2022.2141300
543. Quaglia, L., & Verdun, A. (2023b). The COVID-19 pandemic and the European Union: Politics, policies and institutions. *Journal of European Public Policy*, *30*(4), 599–611. https://doi.org/10.1080/13501763.2022.2141305
544. Quintiliani, F. (2009). International Tourism in the Coastal Regions of Five Mediterranean Countries. *Tourism Analysis*, *14*(3), 353–373. https://doi.org/10.3727/108354209789705011
545. Raevskikh, E., Khalid, U., & Benghozi, P. J. (2022). *Culture in Times of COVID-19 Resilience, Recovery and Revival*. UNESCO, Department of Culture and Tourism. https://shs.hal.science/halshs-03728114
546. Reddy, M. V., Boyd, S. W., & Nica, M. (2020). Towards a post-conflict tourism recovery framework. *Annals of Tourism Research*, *84*, 102940. https://doi.org/10.1016/j.annals.2020.102940
547. Reguant-Aleix, J., Arbore, M. R., Bach-Faig, A., & Serra-Majem, L. (2009). Mediterranean Heritage: An intangible cultural heritage. *Public Health Nutrition*, *12*(9A), 1591–1594. https://doi.org/10.1017/S1368980009990413
548. Ren, J., & Wang, H. (2023). Chapter 2—Probability. In J. Ren & H. Wang (Eds.), *Mathematical Methods in Data Science* (pp. 31–50). Elsevier. https://doi.org/10.1016/B978-0-44-318679-0.00008-9
549. Ren, T., Can, M., Paramati, S. R., Fang, J., & Wu, W. (2019). The Impact of Tourism Quality on Economic Development and Environment: Evidence from Mediterranean Countries. *Sustainability*, *11*(8), Article 8. https://doi.org/10.3390/su11082296
550. Richards, G. (2018). Cultural tourism: A review of recent research and trends. *Journal of Hospitality and Tourism Management*, *36*, 12–21. https://doi.org/10.1016/j.jhtm.2018.03.005
551. Richards, G. (2022). Urban tourism as a special type of cultural tourism. In *A Research Agenda for Urban Tourism* (pp. 31–50). Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781789907391/9781789907391.00009.xml
552. Richards, G., & Fernandes, C. (2023). Cultural Tourism During the (COVID)-19 Pandemic in Portugal. *Tourism Culture & Communication*, *23*(2–3), 219–231. https://doi.org/10.3727/109830422X16600594683427
553. Ricordel, P. (2024). Domestic or export: What is basic at the NUTS 2 regional level? A spatial endogenous regional growth model applied in the EU. *Growth and Change*, *55*(1), e12707. https://doi.org/10.1111/grow.12707
554. Ridao-Cano, C., & Bodewig, C. (2018). *Growing United: Upgrading Europe's Convergence Machine* [Text/HTML]. The World Bank. https://www.worldbank.org/en/region/eca/publication/europe-growing-united
555. Riganti, P., & Nijkamp, P. (2004). *Valuing cultural heritage benefits to urban and regional development*. https://www.econstor.eu/handle/10419/117122
556. Ringwood, L., Watson, P., & Lewin, P. (2019). A quantitative method for measuring regional economic resilience to the great recession. *Growth and Change*, *50*(1), 381–402. https://doi.org/10.1111/grow.12265
557. Rios, V., & Gianmoena, L. (2020). The link between quality of government and regional resilience in Europe. *Journal of Policy Modeling*, *42*(5), 1064–1084. https://doi.org/10.1016/j.jpolmod.2020.02.005

558. Ritchie, B. (2004). Chaos, crises and disasters: A strategic approach to crisis management in the tourism industry. *Tourism Management*, *25*(6), 669–683. https://doi.org/10.1016/j.tourman.2003.09.004
559. Ritchie, B., & Jiang, Y. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. *Annals of Tourism Research*, *79*, 102812. https://doi.org/10.1016/j.annals.2019.102812
560. Rizzo, I., & Throsby, D. (2006). Chapter 28 Cultural Heritage: Economic Analysis and Public Policy. In V. A. Ginsburg & D. Throsby (Eds.), *Handbook of the Economics of Art and Culture* (Vol. 1, pp. 983–1016). Elsevier. https://doi.org/10.1016/S1574-0676(06)01028-3
561. Rodríguez-Pose, A. (2020). Institutions and the fortunes of territories†. *Regional Science Policy & Practice*, *12*(3), 371–386. https://doi.org/10.1111/rsp3.12277
562. Rodríguez-Pose, A., & Dijkstra, L. (2021). Does Cohesion Policy reduce EU discontent and Euroscepticism? *Regional Studies*, *55*(2), 354–369. https://doi.org/10.1080/00343404.2020.1826040
563. Rodríguez-Pose, A., Terrero-Dávila, J., & Lee, N. (2023). Left-behind versus unequal places: Interpersonal inequality, economic decline and the rise of populism in the USA and Europe. *Journal of Economic Geography*, lbad005. https://doi.org/10.1093/jeg/lbad005
564. Roh, T.-S., Bak, S., & Min, C. (2015). Do UNESCO Heritages Attract More Tourists? *World Journal of Management*, *6*(1), 193–200. https://doi.org/10.21102/wjm.2015.03.61.15
565. Roigé, X., Arrieta-Urtizberea, I., & Seguí, J. (2021). The Sustainability of Intangible Heritage in the COVID-19 Era—Resilience, Reinvention, and Challenges in Spain. *Sustainability*, *13*(11), Article 11. https://doi.org/10.3390/su13115796
566. Romão, J. (2015). Culture Or Nature: A Space-Time Analysis On The Determinants Of Tourism Demand In European Regions. *Spatial and Organizational Dynamics Discussion Papers*, Article 2015–3. https://ideas.repec.org//p/ris/cieodp/2015_003.html
567. Romão, J. (2018). *Tourism, Territory and Sustainable Development* (Vol. 28). Springer. https://doi.org/10.1007/978-981-13-0426-2
568. Romão, J. (2020a). Tourism, smart specialisation, growth, and resilience. *Annals of Tourism Research*, *84*, 102995. https://doi.org/10.1016/j.annals.2020.102995
569. Romão, J. (2020b). Variety, Smart Specialization and Tourism Competitiveness. *Sustainability*, *12*(14), Article 14. https://doi.org/10.3390/su12145765
570. Romão, J. (2021). Peter Nijkamp on the Move: Crossing Borders Between Regional Science and Tourism Studies. In S. Suzuki & R. Patuelli (Eds.), *A Broad View of Regional Science: Essays in Honor of Peter Nijkamp* (pp. 219–233). Springer. https://doi.org/10.1007/978-981-33-4098-5_12
571. Romão, J., Guerreiro, J. P. S. M., & Rodrigues, P. M. M. (2017). Territory and sustainable tourism development: A space-time analysis on European regions. *REGION*, *4*(3), 1–17. https://doi.org/10.18335/region.v4i3.142
572. Romão, J., Guerreiro, J., & Rodrigues, P. M. M. (2016). Tourism growth and regional resilience: The ‘beach disease’ and the consequences of the global crisis of 2007. *Tourism Economics*, *22*(4), 699–714. https://doi.org/10.1177/1354816616654243
573. Romão, J., & Neuts, B. (2017). Territorial capital, smart tourism specialization and sustainable regional development: Experiences from Europe. *Habitat International*, *68*, 64–74. https://doi.org/10.1016/j.habitatint.2017.04.006

574. Romão, J., & Nijkamp, P. (2018). Spatial impacts assessment of tourism and territorial capital: A modelling study on regional development in Europe. *International Journal of Tourism Research*, *20*(6), 819–829. https://doi.org/10.1002/jtr.2234
575. Rosés, J. R., & Wolf, N. (2018). Regional Economic Development in Europe, 1900-2010: A Description of the Patterns. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3180497
576. Rosselló Nadal, J., & Santana Gallego, M. (2022). Gravity models for tourism demand modeling: Empirical review and outlook. *Journal of Economic Surveys*, *36*(5), 1358–1409. https://doi.org/10.1111/joes.12502
577. Rosselló-Nadal, J., & He, J. (2020). Tourist arrivals versus tourist expenditures in modelling tourism demand. *Tourism Economics*, *26*(8), 1311–1326. https://doi.org/10.1177/1354816619867810
578. Rozga, A. (2006). *Statistika za ekonomiste*. Ekonomski fakultet, Sveučilište u Splitu. https://www.croris.hr/crosbi/publikacija/knjiga/4299
579. Russo, A., & van der Borg, J. (2002). Planning considerations for cultural tourism: A case study of four European cities. *Tourism Management*, *23*(6), 631–637. https://doi.org/10.1016/S0261-5177(02)00027-4
580. Russo, A., & van der Borg, J. (2006). European Cultural Resources and Regional Development: Pressure and Opportunities From the European Enlargement. *ERSA Conference Papers*, Article ersa06p482. https://ideas.repec.org//p/wiw/wiwrsa/ersa06p482.html
581. Rüttenauer, T. (2022). Spatial Regression Models: A Systematic Comparison of Different Model Specifications Using Monte Carlo Experiments. *Sociological Methods & Research*, *51*(2), 728–759. https://doi.org/10.1177/0049124119882467
582. Rüttenauer, T. (2024). *Spatial Data Analysis* (arXiv:2402.09895). arXiv. http://arxiv.org/abs/2402.09895
583. Saleh, A. S., Assaf, A. G., Ihalanayake, R., & Lung, S. (2015). A Panel Cointegration Analysis of the Impact of Tourism on Economic Growth: Evidence from the Middle East Region. *International Journal of Tourism Research*, *17*(3), 209–220. https://doi.org/10.1002/jtr.1976
584. Salinas Fernández, J. A., Guaita Martínez, J. M., & Martín Martín, J. M. (2022). An analysis of the competitiveness of the tourism industry in a context of economic recovery following the COVID19 pandemic. *Technological Forecasting and Social Change*, *174*, 121301. https://doi.org/10.1016/j.techfore.2021.121301
585. Sampaio, V. (2023, June 2). Understanding Ordinary Least Squares (OLS): The Foundation of Linear Regression. *Medium*. https://medium.com/@VitorCSampaio/understanding-ordinary-least-squares-ols-the-foundation-of-linear-regression-1d79bfc3ca35
586. Sánchez, A. M., & Cuadrado-Roura, J. R. (2024). Sectoral–regional resilience and productive specialization: A comparison among the last three crises. *The Annals of Regional Science*. https://doi.org/10.1007/s00168-024-01261-6
587. Santana-Gallego, M., & Fourie, J. (2022). Tourism falls apart: How insecurity affects African tourism. *Tourism Economics*, *28*(4), 995–1008. https://doi.org/10.1177/1354816620978128
588. Sargento, A., & Lopes, A. S. (2024). Territorial resilience on the aftermaths of COVID-19 crisis—An exploratory analysis on the role of innovation. *Regional Science Policy & Practice*, *16*(1), 12697. https://doi.org/10.1111/rsp3.12697

589. Sarstedt, M., & Mooi, E. (2019). *A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics*. Springer. https://doi.org/10.1007/978-3-662-56707-4
590. Scepi, G., & Petrillo, P. L. (2015). The Cultural Dimension of the Mediterranean Diet as an Intangible Cultural Heritage of Humanity. In G. M. Golinelli (Ed.), *Cultural Heritage and Value Creation: Towards New Pathways* (pp. 171–188). Springer International Publishing. https://doi.org/10.1007/978-3-319-08527-2_6
591. Schuckert, M., & Wu, J. (Snow). (2021). Are neighbour tourists more sensitive to crowding? The impact of distance on the crowding-out effect in tourism. *Tourism Management*, *82*, 104185. https://doi.org/10.1016/j.tourman.2020.104185
592. Scott, D., & Gössling, S. (2022). A review of research into tourism and climate change—Launching the annals of tourism research curated collection on tourism and climate change. *Annals of Tourism Research*, *95*, 103409. https://doi.org/10.1016/j.annals.2022.103409
593. Selvanathan, E. A., Jayasinghe, M., & Selvanathan, S. (2022). International Tourism and Infectious Disease Transmission Nexus: A Cross-Country and Regional Study. *Journal of Travel Research*, *61*(8), 1910–1927. https://doi.org/10.1177/00472875211048932
594. Sensier, M., Bristow, G., & Healy, A. (2016). Measuring Regional Economic Resilience across Europe: Operationalizing a complex concept. *Spatial Economic Analysis*. https://www.tandfonline.com/doi/full/10.1080/17421772.2016.1129435
595. Sensier, M., & Uyarra, E. (2021). Investigating the Governance Mechanisms that Sustain Regional Economic Resilience and Inclusive Growth. In R. Wink (Ed.), *Economic Resilience in Regions and Organisations* (pp. 117–145). Springer Fachmedien. https://doi.org/10.1007/978-3-658-33079-8_5
596. Sequeira, T. N., & Campos, C. (2007). International Tourism and Economic Growth: A Panel Data Approach. In Á. Matias, P. Nijkamp, & P. Neto (Eds.), *Advances in Modern Tourism Research: Economic Perspectives* (pp. 153–163). Physica-Verlag HD. https://doi.org/10.1007/978-3-7908-1718-8_8
597. Severin, A., & Michaliková, M. (2022). *Natural and cultural heritage in coastal regions*. Interreg Europe. https://www.interregeurope.eu/sites/default/files/2022-07/TO6%20Policy%20Brief%20Natural%20and%20cultural%20heritage%20in%20coastal%20regions_0.pdf
598. Shahzad, S. J. H., Shahbaz, M., Ferrer, R., & Kumar, R. R. (2017). Tourism-led growth hypothesis in the top ten tourist destinations: New evidence using the quantile-on-quantile approach. *Tourism Management*, *60*, 223–232. https://doi.org/10.1016/j.tourman.2016.12.006
599. Shakya, M., & Vagnarelli, G. (2024). Creating value from intangible cultural heritage—The role of innovation for sustainable tourism and regional rural development. *European Journal of Cultural Management and Policy*, *14*, 12057. https://doi.org/10.3389/ejcmp.2024.12057
600. Sheldon, P., & Dwyer, L. (2010). The Global Financial Crisis and Tourism: Perspectives of the Academy. *Journal of Travel Research*, *49*(1), 3–4. https://doi.org/10.1177/0047287509353191
601. Sheppard, S. (2013). Museums in the neighborhood: The local economic impact of museums. In *Handbook of Industry Studies and Economic Geography* (pp. 191–204). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/edcoll/9781843769613/9781843769613.00014.xml

602. Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, *117*, 312–321. https://doi.org/10.1016/j.jbusres.2020.06.015
603. Simmie, J., & Martin, R. (2010). The economic resilience of regions: Towards an evolutionary approach. *Cambridge Journal of Regions, Economy and Society*, *3*(1), 27–43. https://doi.org/10.1093/cjres/rsp029
604. Šimundić, B. (2015). *Makroekonomske determinante emitivnog turizma i njihov utjecaj na gospodarstva receptivnih zemalja* [Info:eu-repo/semantics/doctoralThesis, University of Split. Faculty of Economics Split]. https://urn.nsk.hr/urn:nbn:hr:124:881569
605. Šimundić, B. (2022). Evidence on Pre-Pandemic Outbound Tourism Demand Determinants in OECD Countries. *Economic and Social Development: Book of Proceedings*, 75–85.
606. Šimundić, B., & Kuliš, Z. (2016). Tourism and Economic Growth in Mediterranean Region: Dynamic Panel Data Approach. *Acta Economica Et Turistica*, *1*(2), 177–196.
607. Šimundić, B., Kuliš, Z., Haddad, E. A., & Fernandes, I. (2023). *Beyond the Beaches: Unraveling the Impacts of Tourism Expenditure on the Croatian Economy at Regional Level*. 62nd ERSA Congress Urban Challenges and Sustainable Technological Revolution, Alicante, Spain.
608. Šimundić, B., Škokić, V., & Čaušević, S. (2022). Cultural Heritage Tourism in EU Policy Discourse. *Tourism Planning and Development in Eastern Europe*, 100–116. https://doi.org/10.1079/9781800620353.0007
609. Škare, M., Soriano, D. R., & Porada-Rochoń, M. (2021). Impact of COVID-19 on the travel and tourism industry. *Technological Forecasting and Social Change*, *163*, 120469. https://doi.org/10.1016/j.techfore.2020.120469
610. Škrabić Perić, B., Šimundić, B., Muštra, V., & Vugdelija, M. (2021). The Role of UNESCO Cultural Heritage and Cultural Sector in Tourism Development: The Case of EU Countries. *Sustainability*, *13*(10), Article 10. https://doi.org/10.3390/su13105473
611. Škrinjarić, T. (2019). Examining the Causal Relationship between Tourism and Economic Growth: Spillover Index Approach for Selected CEE and SEE Countries. *Economies*, *7*(1), Article 1. https://doi.org/10.3390/economies7010019
612. Smeral, E. (2009). The Impact of the Financial and Economic Crisis on European Tourism. *Journal of Travel Research*, *48*(1), 3–13. https://doi.org/10.1177/0047287509336332
613. Smith, T. E. (2014). *Notebook on Spatial Data Analysis*. https://www.seas.upenn.edu/~tesmith/NOTEBOOK/index.html
614. Snowball, J. D. (2013). *Chapter 22: The economic, social and cultural impact of cultural heritage: methods and examples*. https://www.elgaronline.com/edcollchap/edcoll/9780857930996/9780857930996.00036.xml
615. Sofer, M., Shmuel, I., Amit-Cohen, I., Tchetchik, A., Shiff, S., & Michael, Y. (2023). (COVID)-19 and the Impact on Cultural Tourism: The Case of Beit She'An Valley, Israel. *Tourism Culture & Communication*, *23*(2), 249–262. https://doi.org/10.3727/109830422X16600594683463
616. Song, H., & Li, G. (2008). Tourism demand modelling and forecasting—A review of recent research. *Tourism Management*, *29*(2), 203–220. https://doi.org/10.1016/j.tourman.2007.07.016
617. Song, H., & Lin, S. (2010). Impacts of the Financial and Economic Crisis on Tourism in Asia. *Journal of Travel Research*, *49*(1), 16–30. https://doi.org/10.1177/0047287509353190

618. Song, H., Qiu, R. T. R., & Park, J. (2023). Progress in tourism demand research: Theory and empirics. *Tourism Management*, *94*, 104655. https://doi.org/10.1016/j.tourman.2022.104655
619. Song, H., & Witt, S. F. (Eds.). (2000). *Tourism Demand Modelling and Forecasting*. Routledge. https://doi.org/10.4324/9780080519418
620. Song, H., & Wu, D. C. (2022). A Critique of Tourism-Led Economic Growth Studies. *Journal of Travel Research*, *61*(4), 719–729. https://doi.org/10.1177/00472875211018514
621. Sowińska-Świerkosz, B. (2017). Review of cultural heritage indicators related to landscape: Types, categorisation schemes and their usefulness in quality assessment. *Ecological Indicators*, *81*, 526–542. https://doi.org/10.1016/j.ecolind.2017.06.029
622. Srhoj, S., Vitezić, V., & Walde, J. (2022). Do small public grants boost tourism firms' performance? *Tourism Economics*, *28*(6), 1435–1452. https://doi.org/10.1177/1354816621994436
623. Stanojev, J., & Gustafsson, C. (2021). Smart Specialisation Strategies for Elevating Integration of Cultural Heritage into Circular Economy. *Sustainability*, *13*(7), Article 7. https://doi.org/10.3390/su13073685
624. Starčević, K., Vojinović, Ž., & Glavaš, J. (2022). Intangible cultural heritage and their influence on financial results in rural tourism. *Ekonomika Poljoprivrede*, *69*(2), 483–496. https://doi.org/10.5937/ekoPolj2202483S
625. Šťastná, S., Ženka, J., & Krtička, L. (2024). Regional economic resilience: Insights from five crises. *European Planning Studies*, *32*(3), 506–533. https://doi.org/10.1080/09654313.2023.2267250
626. Ştefan, G. M., Trașcă, D. L., Sahlian, D. N., Popa, A. F., Iacob (Pîrșcoveanu), L.-M., & Chiriac, S. C. V. (2023). Private and Public Digitalization and Economic Resilience during COVID-19 Pandemic. *Electronics*, *12*(5), Article 5. https://doi.org/10.3390/electronics12051224
627. Steiner, C., Richter, T., Dörry, S., Neisen, V., Stephenson, M., Lemma, A., & Mitchell, J. (2013). *Economic Crisis, International Tourism Decline and its Impact on the Poor.* World Tourism Organization.
628. Stock, J. H., & Watson, M. W. (2020). *Introduction to econometrics*. Pearson. https://thuvienso.hoasen.edu.vn/handle/123456789/11496
629. Stoica, G. D., Andreiana, V.-A., Duica, M. C., Stefan, M.-C., Susanu, I. O., Coman, M. D., & Iancu, D. (2022). Perspectives for the Development of Sustainable Cultural Tourism. *Sustainability*, *14*(9), Article 9. https://doi.org/10.3390/su14095678
630. Stojčić, N., Mikulić, J., & Vizek, M. (2022). High season, low growth: The impact of tourism seasonality and vulnerability to tourism on the emergence of high-growth firms. *Tourism Management*, *89*, 104455. https://doi.org/10.1016/j.tourman.2021.104455
631. Storper, M. (1997). *The Regional World: Territorial Development in a Global Economy*. Guilford Press.
632. Strickland-Munro, J. (2017). Resilience and protected area tourism in Purnululu National Park: Understanding interactions with a focus on community benefits. *Tourism and Resilience*, 137–149. https://doi.org/10.1079/9781780648330.0137
633. Su, J., Badry Kamel Basuny Amer, M., & Liu, X. (2019, October). *Panel 5 Rural Intangible Cultural Heritage*. ICOMOS 2019 Advisory Committee Scientific Symposium - Rural Heritage - Landscapes and Beyond, Marrakesh, Morocco. https://doi.org/10.7275/2jrf-ar45

634. Sutton, J., Arcidiacono, A., Torrisi, G., & Arku, R. N. (2023). Regional economic resilience: A scoping review. *Progress in Human Geography*, 03091325231174183. https://doi.org/10.1177/03091325231174183
635. Sutton, J., & Arku, G. (2022). Regional economic resilience: Towards a system approach. *Regional Studies, Regional Science*, *9*(1), 497–512. https://doi.org/10.1080/21681376.2022.2092418
636. Sutton, J., & Sutton, J. (2024). A road map to capture the spatial dependence underlying regions' economic resilience. *Spatial Economic Analysis*, *19*(1), 57–72. https://doi.org/10.1080/17421772.2023.2240405
637. Suzuki, S., Kourtit, K., & Nijkamp, P. (Eds.). (2021). *Tourism and Regional Science: New Roads* (Vol. 53). Springer. https://doi.org/10.1007/978-981-16-3623-3
638. Swanstrom, T. (2008). *Regional Resilience: A Critical Examination of the Ecological Framework*. UC Berkeley: Institute of Urban and Regional Development. https://escholarship.org/uc/item/9g27m5zg
639. Tan, N., Anwar, S., & Jiang, W. (2023). Intangible cultural heritage listing and tourism growth in China. *Journal of Tourism and Cultural Change*, *21*(2), 188–206. https://doi.org/10.1080/14766825.2022.2068373
640. Tarkang, M. E., Adedoyin, F. F., & Bekun, F. V. (2023). An Investigation into the Role of Tourism Growth, Conventional Energy Consumption and Real Income on Ecological Footprint Nexus in France. *International Journal of Renewable Energy Development*, *12*(1), 46–54. https://doi.org/10.14710/ijred.2023.43246
641. Terzo, G. (2021). Social capital, social economy and economic resilience of Italian provinces. *Papers in Regional Science*, *100*(5), 1113–1135. https://doi.org/10.1111/pirs.12618
642. The Council of the European Union. (2014). *Council conclusions of 21 May 2014 on cultural heritage as a strategic resource for a sustainable Europe*. The Council of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52014XG0614%2808%29
643. Timothy, D. J. (2021). *Cultural Heritage and Tourism*. Channel View Publications. https://www.channelviewpublications.com/page/detail/?k=9781845417703
644. Tkalac Verčić, A., Sinčić Ćorić, D., & Pološki Vokić, N. (2010). *Priručnik za metodologiju istraživačkog rada*. M.E.P. d.o.o.
645. Tobler, W. R. (1970). A Computer Movie Simulating Urban Growth in the Detroit Region. *Economic Geography*. https://www.tandfonline.com/doi/abs/10.2307/143141
646. Tomej, K., Bilynets, I., & Koval, O. (2023). Tourism business resilience in the time of war: The first three months following Russia's invasion of Ukraine. *Annals of Tourism Research*, *99*, 103547. https://doi.org/10.1016/j.annals.2023.103547
647. Tóth, G., Elekes, Z., Whittle, A., Lee, C., & Kogler, D. F. (2022). Technology Network Structure Conditions the Economic Resilience of Regions. *Economic Geography*, *98*(4), 355–378. https://doi.org/10.1080/00130095.2022.2035715
648. Trinajstić, M., Bareša, S., & Bogdan, S. (2018). Regional Economic Growth and Tourism: A Panel Data Approach. *UTMS Journal of Economics*, *9*, 145–155.
649. Trippl, M., Fastenrath, S., & Isaksen, A. (2023). Rethinking regional economic resilience: Preconditions and processes shaping transformative resilience. *European Urban and Regional Studies*, 09697764231172326. https://doi.org/10.1177/09697764231172326
650. Trippl, M., Fastenrath, S., & Isaksen, A. (2024). Rethinking regional economic resilience: Preconditions and processes shaping transformative resilience. *European Urban and Regional Studies*, *31*(2), 101–115. https://doi.org/10.1177/09697764231172326

651. Tu, J., & Zhang, D. (2020). Does tourism promote economic growth in Chinese ethnic minority areas? A nonlinear perspective. *Journal of Destination Marketing & Management*, *18*, 100473. https://doi.org/10.1016/j.jdmm.2020.100473
652. Tubadji, A. (2012). Culture-based development: Empirical evidence for Germany. *International Journal of Social Economics*, *39*(9), 690–703. https://doi.org/10.1108/03068291211245718
653. Tubadji, A., & Nijkamp, P. (2015a). Cultural Gravity Effects among Migrants: A Comparative Analysis of the EU15. *Economic Geography*, *91*(3), 343–380. https://doi.org/10.1111/ecge.12088
654. Tubadji, A., & Nijkamp, P. (2015b). Cultural impact on regional development: Application of a PLS-PM model to Greece. *The Annals of Regional Science*, *54*(3), 687–720. https://doi.org/10.1007/s00168-015-0672-2
655. Tubadji, A., Osoba, B. J., & Nijkamp, P. (2015). Culture-based development in the USA: Culture as a factor for economic welfare and social well-being at a county level. *Journal of Cultural Economics*, *39*(3), 277–303. https://doi.org/10.1007/s10824-014-9232-3
656. Tugcu, C. T. (2014). Tourism and economic growth nexus revisited: A panel causality analysis for the case of the Mediterranean Region. *Tourism Management*, *42*, 207–212. https://doi.org/10.1016/j.tourman.2013.12.007
657. Tupy, I. S., Silva, F. F., Amaral, P. V. M., & Cavalcante, A. T. M. (2021). The spatial features of recent crises in a developing country: Analysing regional economic resilience for the Brazilian case. *Regional Studies*, *55*(4), 693–706. https://doi.org/10.1080/00343404.2020.1851025
658. Tupy, I. S., Silva, F. F., Diniz, G. F. C., Montenegro, R. L., de Queiroz Stein, A., & Ferraz, D. (2023). Resilient Regions in Brazil: Unfolding the Effects of COVID-19 From a Socioeconomic Perspective. *International Regional Science Review*, *46*(5–6), 649–677. https://doi.org/10.1177/01600176221145878
659. Turgel, I. D., & Chernova, O. A. (2024). COVID-19 and Regional Resilience: Trends, priorities, and the geography of research. *Journal of Safety Science and Resilience*. https://doi.org/10.1016/j.jnlssr.2024.04.004
660. Tyrrell, T. J., & Johnston, R. J. (2008). Tourism Sustainability, Resiliency and Dynamics: Towards a More Comprehensive Perspective. *Tourism and Hospitality Research*, *8*(1), 14–24. https://doi.org/10.1057/thr.2008.8
661. Uğur, N. G., & Akbıyık, A. (2020). Impacts of COVID-19 on global tourism industry: A cross-regional comparison. *Tourism Management Perspectives*, *36*, 100744. https://doi.org/10.1016/j.tmp.2020.100744
662. UNESCO. (1972). *Convention Concerning the Protection of the World Cultural and Natural Heritage*. United Nations Educational, Scientific and Cultural Organization. https://whc.unesco.org/archive/convention-en.pdf
663. UNESCO. (2018). *Culture for the 2030 Agenda*. United Nations Educational, Scientific and Cultural Organization,. https://unesdoc.unesco.org/ark:/48223/pf0000264687
664. UNESCO. (2019). *Culture | 2030 indicators*. United Nations Educational, Scientific and Cultural Organization,. https://unesdoc.unesco.org/ark:/48223/pf0000371562
665. UNESCO. (2022a). *Basic Texts of the 2003 Convention for the Safeguarding of the Intangible Cultural—Heritage 2022 Edition*. United Nations Educational, Scientific and Cultural Organization,. https://ich.unesco.org/doc/src/2003_Convention_Basic_Texts-_2022_version-EN_.pdf

666. UNESCO. (2022b). *Culture in times of COVID-19: Resilience, recovery and revival*. UNESCO, Department of Culture and Tourism. https://unesdoc.unesco.org/ark:/48223/pf0000381524
667. UNESCO. (2023). *Cutting Edge | Bringing cultural tourism back in the game | UNESCO*. https://www.unesco.org/en/articles/cutting-edge-bringing-cultural-tourism-back-game
668. UNESCO. (2024a). *The Lists of Intangible Cultural Heritage and the Register of good safeguarding practices* [dataset]. https://ich.unesco.org/en/lists
669. UNESCO. (2024b). *UNESCO Urban Heritage Atlas: Cultural mapping for historic cities and settlements*. UNESCO World Heritage Centre. https://whc.unesco.org/en/urban-heritage-atlas/
670. UNESCO. (2024c). *World Heritage Online Map Platform* [dataset]. https://whc.unesco.org/en/wh-gis/
671. UNWTO. (2013). *A Closer Look at Tourism: Sub-national Measurement and Analysis – Towards a Set of UNWTO Guidelines*. World Tourism Organization. https://www.e-unwto.org/doi/book/10.18111/9789284414963
672. UNWTO. (2018). *Tourism and Culture Synergies*. https://www.e-unwto.org/doi/book/10.18111/9789284418978
673. UNWTO. (2021a). *International Tourism Highlights, 2020 Edition*. World Tourism Organization. https://www.e-unwto.org/doi/book/10.18111/9789284422456
674. UNWTO. (2021b). *UNWTO Inclusive Recovery Guide – Sociocultural Impacts of Covid-19, Issue 2: Cultural Tourism*. World Tourism Organization. https://www.e-unwto.org/doi/book/10.18111/9789284422579
675. UNWTO. (2022a). *Statistical Framework for Measuring the Sustainability of Tourism (SF-MST)*. World Tourism Organization. https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/webimages/SF-MST%20EG%20review%20Ch%205%20Spatial%20v3.0%20Dec2022_clean.pdf
676. UNWTO. (2022b). *UNWTO World Tourism Barometer and Statistical Annex, January 2022* (pp. 1–40). World Tourism Organization. https://www.e-unwto.org/doi/abs/10.18111/wtobarometereng.2022.20.1.1
677. UNWTO. (2023). *Cultural tourism & COVID19 | UNWTO*. https://www.unwto.org/cultural-tourism-covid-19
678. Uppink, L., & Soshkin, M. (2022). *Travel & Tourism Development Index 2021: Rebuilding for a Sustainable and Resilient Future*. World Economic Forum. https://www.weforum.org/reports/travel-and-tourism-development-index-2021/
679. van der Borg, J. (2022a). *A Research Agenda for Urban Tourism*. Edward Elgar Publishing. https://www.elgaronline.com/display/edcoll/9781789907391/9781789907391.xml
680. van der Borg, J. (2022b). The role of the impacts of tourism on destinations in determining the tourism-carrying capacity: Evidence from Venice, Italy. In *Handbook of Tourism Impacts* (pp. 103–116). Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/book/9781800377684/book-part-9781800377684-17.xml
681. Van der Zee, E., Camatti, N., Bertocchi, D., & Shomali, K. W. A. (2024). UNESCO World Heritage Site label and sustainable tourism in Europe: A user-generated content analysis. *Regional Studies*, *0*(0), 1–16. https://doi.org/10.1080/00343404.2024.2333787

682. VanBlarcom, B. L., & Kayahan, C. (2011). Assessing the economic impact of a UNESCO World Heritage designation. *Journal of Heritage Tourism*, *6*(2), 143–164. https://doi.org/10.1080/1743873X.2011.561858
683. Vandenbroucke, F., & Rinaldi, D. (2015). *Social Inequalities in Europe – The Challenge of Convergence and Cohesion* (SSRN Scholarly Paper 3003904). https://doi.org/10.2139/ssrn.3003904
684. Vanhove, N. (2022). *The Economics of Tourism Destinations: Theory and Practice* (4th ed.). Routledge. https://doi.org/10.4324/9781003258186
685. Vayá, E., Garcia, J. R., Suriñach, J., & Pons, E. (2024). Effects of the COVID-19 tourism crisis on the Spanish economy. *Tourism Economics*, *30*(4), 1021–1038. https://doi.org/10.1177/13548166231185899
686. Verardi, V., & Croux, C. (2009). Robust Regression in Stata. *The Stata Journal*, *9*(3), 439–453. https://doi.org/10.1177/1536867X0900900306
687. Vidoli, F., & Benedetti, R. (2022). *SpatialRegimes package: A brief introduction to spatial clusterwise regression with a focus on SkaterF function*. https://cran.r-project.org/web/packages/SpatialRegimes/vignettes/SpatialRegimes_vignette.pdf
688. Vidoli, F., & Benedetti, R. (2024). *Spatial Regimes web app*. https://fvidoli.shinyapps.io/spatialregimes_app/
689. Vidoli, F., Pignataro, G., & Benedetti, R. (2022). Identification of spatial regimes of the production function of Italian hospitals through spatially constrained cluster-wise regression. *Socio-Economic Planning Sciences*, *82*, 101223. https://doi.org/10.1016/j.seps.2022.101223
690. Virginija, D. J. (2016). Interaction between Cultural/Creative Tourism and Tourism/ Cultural Heritage Industries. In *Tourism—From Empirical Research Towards Practical Application*. IntechOpen. https://doi.org/10.5772/62661
691. Vuković, D. B., Zobov, A. M., & Degtereva, E. A. (2022). The nexus between tourism and regional real growth: Dynamic panel threshold testing. *Journal of the Geographical Institute "Jovan Cvijic", SASA*, *72*(1), 111–116.
692. Wald, A. (1943). Tests of Statistical Hypotheses Concerning Several Parameters When the Number of Observations is Large. *Transactions of the American Mathematical Society*, *54*(3), 426–482. https://doi.org/10.2307/1990256
693. Wall, G., & Mathieson, A. (2006). *Tourism: Change - impacts and opportunities*. Pearson Prentice Hall.
694. Wallace, C., Chen, X., Garrison, S., & Shaddock, J. (2023). Introduction: The Impact of (COVID)-19 on Cultural Tourism. *Tourism Culture & Communication*, *23*(2–3), 87–96. https://doi.org/10.3727/109830422X16600594683508
695. Wang, M.-Y., Li, Y.-Q., Ruan, W.-Q., Zhang, S.-N., & Li, R. (2024). Influencing factors and formation process of cultural inheritance-based innovation at heritage tourism destinations. *Tourism Management*, *100*, 104799. https://doi.org/10.1016/j.tourman.2023.104799
696. Wang, X., & Li, M. (2022). Determinants of Regional Economic Resilience to Economic Crisis: Evidence from Chinese Economies. *Sustainability*, *14*(2), Article 2. https://doi.org/10.3390/su14020809
697. Wang, Y., Chen, S., & Rabeeu, A. (2024). Does world heritage site initiation promote tourism? A difference-in-difference approach. *Tourism Economics*, 13548166241253306. https://doi.org/10.1177/13548166241253306
698. Wang, Y., Han, L., & Ma, X. (2022). International tourism and economic vulnerability. *Annals of Tourism Research*, *94*, 103388. https://doi.org/10.1016/j.annals.2022.103388

699. Wang, Y., & Tziamalis, A. (2023). International tourism and income inequality: The role of economic and financial development. *Tourism Economics*, 13548166231177106. https://doi.org/10.1177/13548166231177106
700. Wang, Z., & Wei, W. (2021). Regional economic resilience in China: Measurement and determinants. *Regional Studies*, *55*(7), 1228–1239. https://doi.org/10.1080/00343404.2021.1872779
701. Wardekker, A., Nath, S., & Handayaningsih, T. U. (2023). The interaction between cultural heritage and community resilience in disaster-affected volcanic regions. *Environmental Science & Policy*, *145*, 116–128. https://doi.org/10.1016/j.envsci.2023.04.008
702. Watson, P., & Deller, S. (2022). Tourism and economic resilience. *Tourism Economics*, *28*(5), 1193–1215. https://doi.org/10.1177/1354816621990943
703. Webber, D. J., Healy, A., & Bristow, G. (2018). Regional Growth Paths and Resilience: A European Analysis. *Economic Geography*, *94*(4), 355–375. https://doi.org/10.1080/00130095.2017.1419057
704. Wheeler, D. C. (2021). Geographically Weighted Regression. In M. M. Fischer & P. Nijkamp (Eds.), *Handbook of Regional Science* (pp. 1895–1921). Springer. https://doi.org/10.1007/978-3-662-60723-7_77
705. Widuto, A. (2019). *Regional inequalities in the EU | Think Tank | European Parliament*. https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2019)637951
706. Wink, R. (2021). Introduction: Covid-19 Pandemic as New Challenge for Regional Resilience Research? In R. Wink (Ed.), *Economic Resilience in Regions and Organisations* (pp. 1–20). Springer Fachmedien. https://doi.org/10.1007/978-3-658-33079-8_1
707. Wolff, S., & Ladi, S. (2020). European Union Responses to the Covid-19 Pandemic: Adaptability in times of Permanent Emergency. *Journal of European Integration*, *42*(8), 1025–1040. https://doi.org/10.1080/07036337.2020.1853120
708. World Bank. (2020). *Map of SME-Support Measures in Response to COVID-19* [Text/HTML]. World Bank. https://www.worldbank.org/en/data/interactive/2020/04/14/map-of-sme-support-measures-in-response-to-covid-19
709. World Bank. (2022). *World Development Report 2022: Finance for an Equitable Recovery*. The World Bank. https://doi.org/10.1596/978-1-4648-1730-4
710. WTTC. (2021). *Global Economic Impact and Trends 2021*. World Travel & Tourism Council. https://wttc.org/Portals/0/Documents/Reports/2021/Global%20Economic%20Impact%20and%20Trends%202021.pdf
711. WTTC. (2022). *European Union 2021 Annual Research: Key Highlights*. World Travel & Tourism Council.
712. WTTC. (2023a). *European Union 2022 Annual Research: Key Highlights*. World Travel & Tourism Council.
713. WTTC. (2023b). *Global Travel & Tourism Catapults into 2023 Says WTTC*. https://wttc.org/news-article/global-travel-and-tourism-catapults-into-2023-says-wttc
714. Wu, D. C., Cao, C., Liu, W., & Chen, J. L. (2022). Impact of domestic tourism on economy under COVID-19: The perspective of tourism satellite accounts. *Annals of Tourism Research Empirical Insights*, *3*(2), 100055. https://doi.org/10.1016/j.annale.2022.100055
715. Wut, T. M., Xu, J. (Bill), & Wong, S. (2021). Crisis management research (1985–2020) in the hospitality and tourism industry: A review and research agenda. *Tourism Management*, *85*, 104307. https://doi.org/10.1016/j.tourman.2021.104307

716. Xanthos, G. J., & Dulufakis, E. N. (2023). Measurement Approaches Of Regional Economic Resilience: A Literature Review. *Regional Science Inquiry*, *XV*(2), 47–59.
717. Xu, Q., Zhu, G., Qu, Z., & Ma, G. (2023). Earthquake and Tourism Destination Resilience from the Perspective of Regional Economic Resilience. *Sustainability*, *15*(10), Article 10. https://doi.org/10.3390/su15107766
718. Yang, Y., & Fik, T. (2014). Spatial effects in regional tourism growth. *Annals of Tourism Research*, *46*, 144–162. https://doi.org/10.1016/j.annals.2014.03.007
719. Yang, Y., Xue, L., & Jones, T. E. (2019). Tourism-enhancing effect of World Heritage Sites: Panacea or placebo? A meta-analysis. *Annals of Tourism Research*, *75*, 29–41. https://doi.org/10.1016/j.annals.2018.12.007
720. Yang, Y., Zhang, C. X., & Rickly, J. M. (2021). A review of early COVID-19 research in tourism: Launching the Annals of Tourism Research's Curated Collection on coronavirus and tourism1. *Annals of Tourism Research*, *91*, 103313. https://doi.org/10.1016/j.annals.2021.103313
721. Yeh, S.-S. (2021). Tourism recovery strategy against COVID-19 pandemic. *Tourism Recreation Research*, *46*(2), 188–194. https://doi.org/10.1080/02508281.2020.1805933
722. Zadel, Z., & Bogdan, S. (2013). Economic Impact of Cultural Tourism. *UTMS Journal of Economics*, *4*(3), 355–366.
723. Zelenika, R. (2000). *Metodologija i tehnologija izrade znanstvenog i stručnog djela* (4th ed.). Ekonomski fakultet u Rijeci.
724. Ženka, J., Pavlík, A., & Slach, O. (2017). Resilience of metropolitan, urban and rural regions: A Central European perspective. *GeoScape*, *11*(1), 25–40. https://doi.org/10.1515/geosc-2017-0003
725. Zhang, J. (2023). Spatial effects of tourism development on economic resilience: An empirical study of Wenchuan earthquake based on dynamic spatial Durbin model. *Natural Hazards*, *115*(1), 309–329. https://doi.org/10.1007/s11069-022-05556-9
726. Zhao, X., Xie, C., Huang, L., Wang, Y., & Han, T. (2023). How digitalization promotes the sustainable integration of culture and tourism for economic recovery. *Economic Analysis and Policy*, *77*, 988–1000. https://doi.org/10.1016/j.eap.2023.01.005
727. Zhong, L., Sun, S., Law, R., & Li, X. (2021). Tourism crisis management: Evidence from COVID-19. *Current Issues in Tourism*, *24*(19), 2671–2682. https://doi.org/10.1080/13683500.2021.1901866
728. Zopiatis, A., Pericleous, K., & Theofanous, Y. (2021). COVID-19 and hospitality and tourism research: An integrative review. *Journal of Hospitality and Tourism Management*, *48*, 275–279. https://doi.org/10.1016/j.jhtm.2021.07.002
729. Zuo, B., & Huang, S. (Sam). (2018). Revisiting the Tourism-Led Economic Growth Hypothesis: The Case of China. *Journal of Travel Research*, *57*(2), 151–163. https://doi.org/10.1177/0047287516686725

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APPENDIX 1: SUPPLEMENTARY TABLES AND FIGURES

Table A 1. Data Sources for ICH, MON, NIC, and MUS

Country	ICH	MON	NIC	MUS
Croatia (HR)	UNESCO, ICH - Croatia	Registar kulturnih dobara	Registar kulturnih dobara	Upisnik javnih i privatnih muzeja
Cyprus (CY)	UNESCO, ICH - Cyprus	Katalogos archaion mnimeion A' kai V' pinaka	Intangible Cultural Heritage of Cyprus	Mouseía
France (FR)	UNESCO, ICH - France	Immeubles protégés au titre des Monuments Historiques	L'Inventaire du Patrimoine culturel immatériel en France	Répertoire des Musées de France : base Muséofile
Italy (IT)	UNESCO, ICH - Italy	Vincoli in rete, Beni culturali	ICCD, Beni culturali	Direzione generale Musei
Greece (GR)	UNESCO, ICH - Greece	Archaiologikí Ktimatolikí	I Áyli Politistikí Klironomiá tis Elládas	Archaiologikí Ktimatolikí
Malta (MT)	UNESCO, ICH - Malta	The Superintendence of Cultural Heritage	ICH Malta	Heritage Malta
Portugal (PT)	UNESCO, ICH - Portugal	INE	Patrimonio cultural imaterial	INE
Slovenia (SI)	UNESCO, ICH - Slovenia	Register nepremične kulturne dediščine	Register nesnovne kulturne dediščine	Razvid muzejev
Spain (ES)	UNESCO, ICH - Spain Link 2	Bienes culturales protegidos	PCI, CCAA PCI, nacional	El Directorio de Museos y Colecciones de España

Table A 2. Resistance Phase: SDEM Model Estimates (baseline), knn = 2

	(A2.1)	(A2.2)	(A2.3)	(A2.4)	(A2.5)	(A2.6)
WHS	-0.364*					
	(0.196)					
ICH		-0.0352**				
		(0.0172)				
MON			-0.00178***			
			(0.000406)			
NIC				-0.00826		
				(0.00541)		
MUS					0.000107	
					(0.0144)	
BUS						-0.0293
						(0.0215)
Cons	-0.492*	-0.559*	-0.0821	-0.502	-0.708**	-0.462*
	(0.291)	(0.288)	(0.289)	(0.313)	(0.323)	(0.260)
W*WHS	-7.826					
	(7.518)					
W*ICH		0.0893				
		(0.688)				
W*MON			-0.0182			
			(0.0120)			
W*NIC				-0.0107		
				(0.131)		
W*MUS					-0.775**	
					(0.341)	
W*BUS						-0.139
						(0.147)
λ	4.975***	4.967***	3.438***	4.964***	8.087***	3.608***
	(0.220)	(0.219)	(0.689)	(0.219)	(0.585)	(0.975)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.3659	0.3681	0.4009	0.3665	0.3604	0.3258
AIC	1142.978	1142.635	1123.48	1144.386	1132.296	1011.667

Table A 3. Recovery Phase (2021): SDEM Model Estimates (baseline), knn = 2

	(A3.1)	(A3.2)	(A3.3)	(A3.4)	(A3.5)	(A3.6)
WHS	0.129**					
	(0.0534)					
ICH		0.00995**				
		(0.00476)				
MON			0.000564***			
			(0.000110)			
NIC				0.00283*		
				(0.00148)		
MUS					0.00587	
					(0.00392)	
BUS						0.0234***
						(0.00735)
Cons	0.657***	0.669***	0.567***	0.631***	0.699***	0.632***
	(0.0749)	(0.0750)	(0.0773)	(0.0819)	(0.0841)	(0.0717)
W*WHS	0.882					
	(2.070)					
W*ICH		0.00880				
		(0.190)				
W*MON			0.00293			
			(0.00325)			
W*NIC				0.0272		
				(0.0359)		
W*MUS					-0.0263	
					(0.0918)	
W*BUS						0.0580
						(0.0566)
λ	3.467***	3.458***	3.366***	3.445***	6.312***	4.171***
	(0.633)	(0.637)	(0.673)	(0.643)	(0.368)	(0.861)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.4575	0.4561	0.4890	0.4557	0.4504	0.5297
AIC	158.3723	159.6139	138.4358	160.3524	166.5264	87.50043

Table A 4. Recovery Phase (2022): SDEM Model Estimates (baseline), knn = 2

	(A4.1)	(A4.2)	(A4.3)	(A4.4)	(A4.5)	(A4.6)
WHS	0.0613**					
	(0.0251)					
ICH		0.00488**				
		(0.00223)				
MON			0.000272***			
			(0.0000516)			
NIC				0.00143**		
				(0.000695)		
MUS					0.00292	
					(0.00184)	
BUS						0.0109***
						(0.00348)
Cons	0.539***	0.544***	0.495***	0.524***	0.555***	0.527***
	(0.0351)	(0.0352)	(0.0362)	(0.0384)	(0.0395)	(0.0337)
W*WHS	0.405					
	(0.972)					
W*ICH		0.00703				
		(0.0890)				
W*MON			0.00150			
			(0.00152)			
W*NIC				0.0147		
				(0.0168)		
W*MUS					-0.0110	
					(0.0431)	
W*BUS						0.0283
						(0.0269)
λ	3.477***	3.462***	3.371***	3.450***	6.315***	4.188***
	(0.631)	(0.636)	(0.674)	(0.643)	(0.369)	(0.852)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.8038	0.8035	0.8159	0.8035	0.8014	0.8298
AIC	-413.1917	-412.2514	-434.5219	-411.6954	-405.2536	-457.5384

Table A 5. Resistance Phase: SDEM Model Estimates (baseline), knn = 3

	(A5.1)	(A5.2)	(A5.3)	(A5.4)	(A5.5)	(A5.6)
WHS	-0.296					
	(0.196)					
ICH		-0.0306*				
		(0.0170)				
MON			-0.00173***			
			(0.000407)			
NIC				-0.00712		
				(0.00535)		
MUS					0.000322	
					(0.0144)	
BUS						-0.0245
						(0.0223)
Cons	-0.712**	-0.760**	-0.225	-0.749**	-0.737**	-0.511*
	(0.330)	(0.327)	(0.309)	(0.346)	(0.330)	(0.275)
W*WHS	-3.821					
	(7.398)					
W*ICH		0.0827				
		(0.630)				
W*MON			-0.0106			
			(0.0105)			
W*NIC				0.0331		
				(0.104)		
W*MUS					-0.531*	
					(0.299)	
W*BUS						-0.116
						(0.173)
λ	5.560***	5.517***	3.786***	5.539***	5.631***	3.118***
	(0.571)	(0.574)	(0.263)	(0.571)	(0.566)	(0.761)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.3596	0.3619	0.3964	0.3601	0.3598	0.3262
AIC	1130.479	1129.548	1122.703	1130.485	1129.618	1010.594

Table A 6. Recovery Phase (2021): SDEM Model Estimates (baseline), knn = 3

	(A6.1)	**(A6.2)**	**(A6.3)**	**(A6.4)**	**(A6.5)**	**(A6.6)**
WHS	0.121**					
	(0.0533)					
ICH		0.00915*				
		(0.00472)				
MON			0.000562***			
			(0.000111)			
NIC				0.00261*		
				(0.00147)		
MUS					0.00667*	
					(0.00396)	
BUS						0.0188***
						(0.00568)
Cons	0.679***	0.684***	0.582***	0.654***	0.715***	0.679***
	(0.0801)	(0.0803)	(0.0834)	(0.0862)	(0.0861)	(0.0809)
W*WHS	0.216					
	(2.014)					
W*ICH		0.0542				
		(0.170)				
W*MON			0.00248			
			(0.00285)			
W*NIC				0.0197		
				(0.0276)		
W*MUS					-0.0660	
					(0.0799)	
W*BUS						0.0314
						(0.0445)
λ	3.739***	3.736***	3.745***	3.738***	4.887***	5.103***
	(0.270)	(0.271)	(0.272)	(0.271)	(0.471)	(0.695)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.4570	0.4559	0.4883	0.4550	0.4509	0.5373
AIC	157.6724	158.7789	137.5999	159.6144	157.2	86.29498

Table A 7. Recovery Phase (2022): SDEM Model Estimates (baseline), knn = 3

	(A7.1)	(A7.2)	(A7.3)	(A7.4)	(A7.5)	(A7.6)
WHS	0.0578**					
	(0.0250)					
ICH		0.00450**				
		(0.00221)				
MON			0.000271***			
			(0.0000518)			
NIC				0.00132*		
				(0.000689)		
MUS					0.00328*	
					(0.00186)	
BUS						0.00870***
						(0.00271)
Cons	0.548***	0.549***	0.500***	0.533***	0.563***	0.546***
	(0.0376)	(0.0377)	(0.0391)	(0.0404)	(0.0404)	(0.0378)
W*WHS	0.0882					
	(0.946)					
W*ICH		0.0288				
		(0.0800)				
W*MON			0.00129			
			(0.00133)			
W*NIC				0.0109		
				(0.0130)		
W*MUS					-0.0291	
					(0.0375)	
W*BUS						0.0155
						(0.0214)
λ	3.740***	3.736***	3.747***	3.738***	4.888***	5.092***
	(0.270)	(0.271)	(0.272)	(0.271)	(0.471)	(0.704)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	360
Pseudo R^2	0.8037	0.8036	0.8158	0.8034	0.8016	0.8332
AIC	-413.9378	-413.1078	-435.396	-412.4208	-414.4357	-458.8127

Table A 8. Resistance Phase: SDEM Model Estimates (augmented), knn = 2

	(A8.1)	(A8.2)	(A8.3)	(A8.4)	(A8.5)	(A8.6)	(A8.7)
TOUR	-0.00687	-0.00640	-0.00719	-0.00587	-0.00671	-0.00841	-0.00322
	(0.00510)	(0.00507)	(0.00505)	(0.00549)	(0.00504)	(0.00512)	(0.00710)
GDP	-0.00536*	-0.00555*	-0.00654**	-0.00464	-0.00685**	-0.00430	-0.00843***
	(0.00310)	(0.00309)	(0.00312)	(0.00301)	(0.00312)	(0.00312)	(0.00327)
EQI	-0.195	-0.131	-0.158	0.00301	-0.155	-0.185	-0.137
	(0.216)	(0.217)	(0.214)	(0.217)	(0.214)	(0.216)	(0.220)
HHI	-15.60***	-15.52***	-15.10***	-15.27***	-15.74***	-15.79***	-10.53***
	(1.981)	(1.971)	(1.982)	(1.976)	(1.973)	(1.988)	(2.059)
TP	-0.00894***	-0.00903***	-0.00976***	-0.00880***	-0.00961***	-0.00926***	-0.00540*
	(0.00278)	(0.00277)	(0.00286)	(0.00282)	(0.00284)	(0.00290)	(0.00282)
SI	0.173*	0.164*	0.175*	0.107	0.188*	0.157	0.170*
	(0.0997)	(0.0992)	(0.0989)	(0.0998)	(0.0994)	(0.0995)	(0.0950)
WHS		-0.320*					
		(0.177)					
ICH			-0.0245				
			(0.0162)				
MON				-0.00144***			
				(0.000375)			
NIC					-0.00283		
					(0.00518)		
MUS						-0.0123	
						(0.0137)	
BUS							0.0330
							(0.0363)
Cons	-4.473	-3.832	-4.540	-0.934	-5.078	-3.650	-5.635
	(4.488)	(4.473)	(4.457)	(4.469)	(4.487)	(4.503)	(4.274)
W*TOUR	-0.0388	-0.0352	-0.0422	-0.0352	-0.0420	-0.0474	0.0248
	(0.0328)	(0.0326)	(0.0324)	(0.0357)	(0.0324)	(0.0328)	(0.108)
W*GDP	-0.0333	-0.0274	-0.0162	-0.0432	-0.00351	0.0171	-0.0737
	(0.0438)	(0.0438)	(0.0443)	(0.0470)	(0.0450)	(0.0494)	(0.0573)
W*EQI	9.496**	8.780**	8.881**	4.894	7.723*	7.209	6.024
	(4.341)	(4.340)	(4.367)	(4.687)	(4.398)	(4.431)	(5.616)
W*HHI	-84.81*	-93.93**	-118.6**	-27.45	-128.0***	-135.2***	124.1*
	(45.51)	(45.52)	(48.14)	(51.77)	(48.21)	(51.15)	(66.58)
W*TP	0.400***	0.389***	0.476***	0.333***	0.489***	0.294***	0.267**
	(0.102)	(0.102)	(0.113)	(0.104)	(0.108)	(0.114)	(0.111)
W*SI	0.183	0.218	0.175	-0.0878	0.158	0.521*	-0.563*
	(0.221)	(0.221)	(0.224)	(0.235)	(0.219)	(0.275)	(0.291)
W*WHS		-11.34*					
		(6.740)					
W*ICH			1.403**				
			(0.714)				
W*MON				-0.0146			
				(0.0125)			
W*NIC					0.315**		
					(0.136)		
W*MUS						-0.903**	
						(0.403)	
W*BUS							-0.119
							(0.787)
λ	8.518***	8.553***	8.694***	3.435***	8.639***	8.398***	6.045***
	(0.595)	(0.590)	(0.555)	(0.734)	(0.561)	(0.612)	(0.502)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.4860	0.4897	0.4791	0.5296	0.4824	0.4997	0.3639
AIC	1056.162	1055.77	1053.204	1055.979	1051.705	1054.732	975.1748

Table A 9. Recovery Phase (2021): SDEM Model Estimates (augmented), knn = 2

	(A9.1)	(A9.2)	(A9.3)	(A9.4)	(A9.5)	(A9.6)	(A9.7)
TOUR	0.00399***	0.00332*	0.00376**	0.00382**	0.00378**	0.00393**	-0.00160
	(0.00146)	(0.00185)	(0.00157)	(0.00155)	(0.00158)	(0.00160)	(0.00204)
GDP	-0.000193	-0.000172	-0.0000603	-0.000322	-0.0000868	-0.000600	-0.000405
	(0.000897)	(0.000883)	(0.000887)	(0.000861)	(0.000891)	(0.000890)	(0.000928)
EQI	0.178***	0.161**	0.162**	0.135**	0.167***	0.156**	0.143**
	(0.0631)	(0.0649)	(0.0629)	(0.0621)	(0.0632)	(0.0632)	(0.0620)
HHI	3.200***	3.325***	3.246***	3.109***	3.288***	3.568***	2.341***
	(0.571)	(0.568)	(0.574)	(0.564)	(0.573)	(0.578)	(0.590)
TP	0.00151*	0.00151*	0.00189**	0.00197**	0.00183**	0.00191**	0.000460
	(0.000801)	(0.000805)	(0.000836)	(0.000804)	(0.000833)	(0.000848)	(0.000812)
SI	-0.0498***	-0.0469***	-0.0452***	-0.0418***	-0.0442***	-0.0439***	-0.0436***
	(0.0150)	(0.0151)	(0.0151)	(0.0149)	(0.0152)	(0.0151)	(0.0143)
WHS		0.107**					
		(0.0500)					
ICH			0.00969**				
			(0.00474)				
MON				0.000458***			
				(0.000108)			
NIC					0.00291*		
					(0.00149)		
MUS						0.00723*	
						(0.00389)	
BUS							0.0331***
							(0.0104)
Cons	2.252***	2.001***	1.923***	1.700***	1.853***	1.804***	2.126***
	(0.668)	(0.668)	(0.664)	(0.656)	(0.669)	(0.670)	(0.635)
W*TOUR	0.0159*	0.0116	0.0141	0.0146	0.0142	0.0153	0.0128
	(0.00942)	(0.0125)	(0.0103)	(0.0101)	(0.0103)	(0.0105)	(0.0304)
W*GDP	-0.0173	-0.0110	-0.00478	-0.00515	-0.00524	-0.0118	0.000123
	(0.0129)	(0.0141)	(0.0144)	(0.0137)	(0.0146)	(0.0152)	(0.0163)
W*EQI	-1.668	-1.567	-1.784	-1.782	-1.811	-1.152	-0.453
	(1.348)	(1.503)	(1.380)	(1.346)	(1.403)	(1.402)	(1.471)
W*HHI	25.56*	19.36	4.519	4.660	5.632	12.27	-4.441
	(14.16)	(15.48)	(17.51)	(15.74)	(17.34)	(16.98)	(19.57)
W*TP	-0.00673	-0.0111	-0.00293	-0.0187	-0.00873	-0.0137	0.0158
	(0.0301)	(0.0297)	(0.0315)	(0.0287)	(0.0302)	(0.0301)	(0.0293)
W*SI	-0.157**	-0.118*	-0.0830	-0.0498	-0.0768	-0.0772	-0.0473
	(0.0645)	(0.0661)	(0.0650)	(0.0649)	(0.0644)	(0.0729)	(0.0734)
W*WHS		1.463					
		(1.944)					
W*ICH			0.106				
			(0.213)				
W*MON				0.00366			
				(0.00351)			
W*NIC					0.0223		
					(0.0396)		
W*MUS						0.0651	
						(0.103)	
W*BUS							-0.0632
							(0.223)
λ	8.233***	4.963***	3.374***	3.261***	3.375***	3.406***	3.853***
	(0.599)	(0.222)	(0.799)	(0.814)	(0.783)	(0.769)	(1.046)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.5227	0.5393	0.5448	0.5621	0.5436	0.5440	0.5824
AIC	116.3093	126.8337	122.6152	108.5696	123.3805	122.6652	77.02952

Table A 10. Recovery Phase (2022): SDEM Model Estimates (augmented), knn = 2

	(A10.1)	(A10.2)	(A10.3)	(A10.4)	(A10.5)	(A10.6)	(A10.7)
TOUR	0.00184***	0.00164**	0.00176**	0.00176**	0.00176**	0.00181**	-0.000706
	(0.000678)	(0.000734)	(0.000729)	(0.000716)	(0.000732)	(0.000742)	(0.000946)
GDP	-0.0000814	-0.000122	-0.0000282	-0.000163	-0.0000393	-0.000285	-0.000165
	(0.000419)	(0.000408)	(0.000414)	(0.000401)	(0.000417)	(0.000415)	(0.000431)
EQI	0.0856***	0.0744**	0.0759**	0.0601**	0.0772**	0.0708**	0.0660**
	(0.0299)	(0.0302)	(0.0301)	(0.0298)	(0.0301)	(0.0304)	(0.0294)
HHI	1.526***	1.634***	1.564***	1.503***	1.588***	1.725***	1.133***
	(0.266)	(0.264)	(0.267)	(0.261)	(0.267)	(0.269)	(0.275)
TP	0.000652*	0.000677*	0.000859**	0.000915**	0.000829**	0.000889**	0.000181
	(0.000372)	(0.000377)	(0.000389)	(0.000374)	(0.000389)	(0.000396)	(0.000377)
SI	-0.0772***	-0.0730***	-0.0724***	-0.0685***	-0.0715***	-0.0709***	-0.0707***
	(0.0171)	(0.0172)	(0.0172)	(0.0169)	(0.0173)	(0.0172)	(0.0163)
WHS		0.0520**					
		(0.0232)					
ICH			0.00460**				
			(0.00220)				
MON				0.000223***			
				(0.0000501)			
NIC					0.00136*		
					(0.000693)		
MUS						0.00361**	
						(0.00183)	
BUS							0.0149***
							(0.00484)
Cons	1.618***	1.472***	1.473***	1.367***	1.443***	1.415***	1.570***
	(0.309)	(0.308)	(0.307)	(0.303)	(0.310)	(0.310)	(0.293)
W*TOUR	0.00731*	0.00601	0.00669	0.00685	0.00672	0.00706	0.00656
	(0.00437)	(0.00483)	(0.00478)	(0.00465)	(0.00479)	(0.00485)	(0.0150)
W*GDP	-0.00632	-0.00250	-0.00114	-0.00159	-0.00162	-0.00382	0.000881
	(0.00588)	(0.00633)	(0.00659)	(0.00622)	(0.00671)	(0.00674)	(0.00751)
W*EQI	-1.031	-0.796	-0.895	-0.768	-0.865	-0.561	-0.245
	(0.703)	(0.700)	(0.693)	(0.676)	(0.696)	(0.698)	(0.719)
W*HHI	8.698	3.226	-0.630	-0.467	0.133	2.132	-3.677
	(5.980)	(6.554)	(7.411)	(6.475)	(7.494)	(6.755)	(7.963)
W*TP	-0.00698	-0.00939	-0.00354	-0.0112	-0.00659	-0.00954	0.00685
	(0.0135)	(0.0132)	(0.0144)	(0.0130)	(0.0137)	(0.0136)	(0.0135)
W*SI	-0.140**	-0.0606	-0.0633	-0.0188	-0.0547	-0.0430	-0.0396
	(0.0630)	(0.0631)	(0.0636)	(0.0614)	(0.0633)	(0.0700)	(0.0749)
W*WHS		0.495					
		(0.905)					
W*ICH			0.0431				
			(0.0988)				
W*MON				0.00142			
				(0.00158)			
W*NIC					0.00777		
					(0.0185)		
W*MUS						0.0185	
						(0.0464)	
W*BUS							-0.0344
							(0.112)
λ	8.266***	3.435***	3.340***	3.211***	3.335***	3.355***	3.888***
	(0.604)	(0.737)	(0.814)	(0.820)	(0.799)	(0.782)	(1.030)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.8303	0.8378	0.8388	0.8454	0.8383	0.8385	0.8530
AIC	-462.7098	-456.6339	-456.2902	-471.5976	-455.445	-456.222	-476.1524

Table A 11. Resistance Phase: SDEM Model Estimates (augmented), knn = 3

	(A11.1)	(A11.2)	(A11.3)	(A11.4)	(A11.5)	(A11.6)	(A11.7)
TOUR	-0.00425	-0.00362	-0.00420	-0.0104	-0.00316	-0.00555	-0.000534
	(0.00564)	(0.00564)	(0.00563)	(0.00754)	(0.00565)	(0.00564)	(0.00694)
GDP	-0.00515	-0.00535*	-0.00591*	-0.00463	-0.00608*	-0.00366	-0.00857**
	(0.00325)	(0.00324)	(0.00327)	(0.00319)	(0.00327)	(0.00329)	(0.00340)
EQI	-0.200	-0.151	-0.174	-0.0488	-0.149	-0.191	-0.0444
	(0.224)	(0.226)	(0.224)	(0.227)	(0.225)	(0.225)	(0.226)
HHI	-15.75***	-15.75***	-15.31***	-14.84***	-15.76***	-16.01***	-10.54***
	(1.980)	(1.974)	(1.995)	(1.974)	(1.985)	(1.987)	(2.043)
TP	-0.00952***	-0.00960***	-0.0104***	-0.0105***	-0.0102***	-0.00984***	-0.00603**
	(0.00290)	(0.00289)	(0.00297)	(0.00287)	(0.00296)	(0.00303)	(0.00292)
SI	0.172*	0.165	0.168*	0.120	0.174*	0.154	0.149
	(0.101)	(0.100)	(0.101)	(0.0994)	(0.101)	(0.101)	(0.0959)
WHS		-0.257					
		(0.174)					
ICH			-0.0233				
			(0.0163)				
MON				-0.00138***			
				(0.000374)			
NIC					-0.00500		
					(0.00510)		
MUS						-0.0106	
						(0.0137)	
BUS							0.0193
							(0.0369)
Cons	-4.390	-3.879	-4.185	-1.619	-4.354	-3.464	-4.439
	(4.543)	(4.539)	(4.539)	(4.470)	(4.552)	(4.556)	(4.312)
W*TOUR	-0.00619	-0.00214	-0.00634	-0.0503	-0.00415	-0.0174	-0.0306
	(0.0382)	(0.0382)	(0.0381)	(0.0527)	(0.0379)	(0.0382)	(0.100)
W*GDP	-0.0913**	-0.0897**	-0.0882*	-0.126***	-0.0664	-0.0430	-0.158***
	(0.0445)	(0.0443)	(0.0459)	(0.0469)	(0.0475)	(0.0496)	(0.0465)
W*EQI	8.121**	7.795**	8.153**	7.236*	6.386*	6.032	4.418
	(3.579)	(3.574)	(3.645)	(4.084)	(3.814)	(3.673)	(4.170)
W*HHI	-69.27*	-73.60*	-75.75*	-39.19	-100.7**	-116.8**	25.23
	(41.17)	(41.20)	(44.58)	(43.64)	(46.41)	(47.06)	(59.08)
W*TP	0.351***	0.345***	0.358***	0.330***	0.385***	0.266***	0.239***
	(0.0897)	(0.0895)	(0.103)	(0.0885)	(0.0937)	(0.0989)	(0.0889)
W*SI	0.199	0.216	0.214	0.115	0.211	0.484**	-0.0776
	(0.178)	(0.179)	(0.184)	(0.196)	(0.177)	(0.231)	(0.229)
W*WHS		-6.525					
		(6.661)					
W*ICH			0.363				
			(0.705)				
W*MON				-0.00999			
				(0.0108)			
W*NIC					0.154		
					(0.113)		
W*MUS						-0.765**	
						(0.367)	
W*BUS							0.525
							(0.667)
λ	5.659***	5.670***	5.700***	3.770***	5.764***	5.629***	2.882***
	(0.605)	(0.604)	(0.606)	(0.246)	(0.572)	(0.601)	(0.818)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.5073	0.5105	0.5080	0.4819	0.5063	0.5146	0.4343
AIC	1055.217	1056.686	1056.77	1050.454	1054.912	1054.026	974.4358

Table A 12. Recovery Phase (2021): SDEM Model Estimates (augmented), knn = 3

	(A12.1)	(A12.2)	(A12.3)	(A12.4)	(A12.5)	(A12.6)	(A12.7)
TOUR	0.00325**	0.00308*	0.00340**	0.00348**	0.00347**	0.00333**	-0.00199
	(0.00164)	(0.00165)	(0.00160)	(0.00162)	(0.00163)	(0.00164)	(0.00201)
GDP	-0.000440	-0.000415	-0.000243	-0.000419	-0.000234	-0.000651	-0.000609
	(0.000943)	(0.000941)	(0.000915)	(0.000920)	(0.000920)	(0.000955)	(0.000976)
EQI	0.172***	0.161**	0.168**	0.142**	0.173***	0.152**	0.132**
	(0.0657)	(0.0660)	(0.0657)	(0.0646)	(0.0664)	(0.0662)	(0.0647)
HHI	3.202***	3.195***	3.248***	2.881***	3.261***	3.371***	2.240***
	(0.573)	(0.570)	(0.578)	(0.567)	(0.577)	(0.576)	(0.591)
TP	0.00171**	0.00175**	0.00220**	0.00220***	0.00212**	0.00226**	0.000735
	(0.000839)	(0.000835)	(0.000857)	(0.000828)	(0.000857)	(0.000880)	(0.000835)
SI	-0.0494***	-0.0485***	-0.0459***	-0.0441***	-0.0450***	-0.0470***	-0.0442***
	(0.0152)	(0.0152)	(0.0152)	(0.0150)	(0.0153)	(0.0152)	(0.0144)
WHS		0.0986**					
		(0.0503)					
ICH			0.00889*				
			(0.00474)				
MON				0.000450***			
				(0.000109)			
NIC					0.00290*		
					(0.00149)		
MUS						0.00817**	
						(0.00399)	
BUS							0.0345***
							(0.0106)
Cons	2.240***	2.142***	1.966***	1.893***	1.909***	2.024***	2.188***
	(0.680)	(0.681)	(0.671)	(0.674)	(0.676)	(0.689)	(0.643)
W*TOUR	0.00889	0.00794	0.00814	0.00994	0.00831	0.00961	0.0108
	(0.0111)	(0.0111)	(0.0112)	(0.0109)	(0.0113)	(0.0111)	(0.0284)
W*GDP	-0.000283	-0.000583	0.0151	0.00272	0.0142	0.000109	0.0125
	(0.0132)	(0.0131)	(0.0134)	(0.0128)	(0.0139)	(0.0147)	(0.0136)
W*EQI	-1.280	-1.226	-1.857*	-1.727	-1.847	-1.118	-0.137
	(1.081)	(1.076)	(1.117)	(1.085)	(1.164)	(1.080)	(1.193)
W*HHI	15.76	16.77	-7.455	11.27	-4.759	13.57	-0.737
	(13.29)	(13.32)	(14.91)	(13.10)	(15.36)	(14.65)	(17.96)
W*TP	-0.0212	-0.0201	-0.00657	-0.0240	-0.0197	-0.0265	-0.00297
	(0.0266)	(0.0266)	(0.0266)	(0.0267)	(0.0251)	(0.0284)	(0.0250)
W*SI	-0.0930*	-0.0956*	-0.0548	-0.0792	-0.0414	-0.0733	-0.0475
	(0.0556)	(0.0560)	(0.0514)	(0.0579)	(0.0508)	(0.0643)	(0.0610)
W*WHS		0.879					
		(1.929)					
W*ICH			0.291				
			(0.193)				
W*MON				0.00396			
				(0.00321)			
W*NIC					0.0336		
					(0.0312)		
W*MUS						-0.0123	
						(0.0944)	
W*BUS							-0.0845
							(0.188)
λ	5.551***	5.521***	2.287***	5.441***	2.367***	5.534***	3.006***
	(0.618)	(0.622)	(0.726)	(0.629)	(0.680)	(0.623)	(0.829)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.5331	0.5390	0.5528	0.5575	0.5496	0.5396	0.5866
AIC	117.989	118.1561	121.6994	104.6649	123.646	117.8183	75.9266

Table A 13. Recovery Phase (2022): SDEM Model Estimates (augmented), knn = 3

	(A13.1)	(A13.2)	(A13.3)	(A13.4)	(A13.5)	(A13.6)	(A13.7)
TOUR	0.00154**	0.00146*	0.00160**	0.00162**	0.00161**	0.00156**	-0.000846
	(0.000760)	(0.000760)	(0.000740)	(0.000751)	(0.000756)	(0.000760)	(0.000946)
GDP	-0.000179	-0.000170	-0.0000984	-0.000184	-0.000105	-0.000282	-0.000245
	(0.000441)	(0.000440)	(0.000427)	(0.000431)	(0.000431)	(0.000447)	(0.000454)
EQI	0.0838***	0.0791**	0.0806**	0.0672**	0.0801**	0.0722**	0.0639**
	(0.0312)	(0.0313)	(0.0314)	(0.0307)	(0.0315)	(0.0317)	(0.0308)
HHI	1.531***	1.526***	1.562***	1.387***	1.574***	1.613***	1.075***
	(0.266)	(0.265)	(0.269)	(0.263)	(0.268)	(0.268)	(0.275)
TP	0.000763*	0.000782**	0.00100**	0.00101***	0.000969**	0.00104**	0.000309
	(0.000391)	(0.000389)	(0.000399)	(0.000386)	(0.000400)	(0.000411)	(0.000387)
SI	-0.0772***	-0.0761***	-0.0733***	-0.0716***	-0.0723***	-0.0745***	-0.0714***
	(0.0173)	(0.0172)	(0.0173)	(0.0170)	(0.0173)	(0.0173)	(0.0163)
WHS		0.0472**					
		(0.0234)					
ICH			0.00426*				
			(0.00220)				
MON				0.000218***			
				(0.0000506)			
NIC					0.00136**		
					(0.000690)		
MUS						0.00392**	
						(0.00186)	
BUS							0.0157***
							(0.00491)
Cons	1.620***	1.577***	1.494***	1.469***	1.467***	1.521***	1.602***
	(0.315)	(0.315)	(0.310)	(0.311)	(0.313)	(0.318)	(0.296)
W*TOUR	0.00417	0.00377	0.00385	0.00472	0.00394	0.00445	0.00763
	(0.00516)	(0.00516)	(0.00520)	(0.00507)	(0.00525)	(0.00516)	(0.0143)
W*GDP	0.00170	0.00164	0.00809	0.00272	0.00721	0.00180	0.00721
	(0.00598)	(0.00595)	(0.00618)	(0.00583)	(0.00638)	(0.00638)	(0.00631)
W*EQI	-0.821	-0.805	-0.974*	-0.892	-0.887	-0.663	-0.176
	(0.572)	(0.569)	(0.568)	(0.567)	(0.574)	(0.575)	(0.589)
W*HHI	4.813	5.185	-5.231	2.700	-3.685	3.877	-0.906
	(5.363)	(5.346)	(6.200)	(5.294)	(6.598)	(5.648)	(7.093)
W*TP	-0.0118	-0.0114	-0.00386	-0.0145	-0.0103	-0.0148	-0.00147
	(0.0120)	(0.0119)	(0.0122)	(0.0118)	(0.0114)	(0.0125)	(0.0116)
W*SI	-0.0847	-0.0869	-0.0488	-0.0575	-0.0303	-0.0590	-0.0555
	(0.0534)	(0.0534)	(0.0490)	(0.0528)	(0.0494)	(0.0598)	(0.0609)
W*WHS		0.309					
		(0.890)					
W*ICH			0.132				
			(0.0894)				
W*MON				0.00135			
				(0.00142)			
W*NIC					0.0142		
					(0.0148)		
W*MUS						-0.0122	
						(0.0423)	
W*BUS							-0.0597
							(0.0963)
λ	5.574***	5.542***	2.306***	5.453***	2.368***	5.559***	3.082***
	(0.617)	(0.621)	(0.722)	(0.630)	(0.680)	(0.624)	(0.789)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	378	378	378	378	378	378	360
Pseudo R^2	0.8342	0.8365	0.8414	0.8438	0.8403	0.8368	0.8543
AIC	-461.5814	-461.6839	-457.7046	-475.8013	-455.5617	-462.0208	-477.6596

Table A 14. Resistance Phase: SDEM Model Estimates with Controls, Coastal Regions

	(A3a1.1)	(A3a1.2)	(A3a1.3)	(A3a1.4)	(A3a1.5)	(A3a1.6)
TOUR	-0.147***	-0.149***	-0.150***	-0.145***	-0.142***	-0.161***
	(0.0208)	(0.0208)	(0.0207)	(0.0209)	(0.0210)	(0.0297)
GDP	-0.00937*	-0.00784	-0.00876*	-0.00806	-0.00349	-0.00931
	(0.00503)	(0.00497)	(0.00510)	(0.00505)	(0.00512)	(0.00610)
EQI	0.313	0.386	0.331	0.387	0.360	0.203
	(0.234)	(0.235)	(0.230)	(0.238)	(0.239)	(0.240)
HHI	-7.649***	-7.260***	-6.392**	-7.648***	-8.440***	-5.473**
	(2.584)	(2.603)	(2.562)	(2.604)	(2.588)	(2.729)
TP	-0.00763**	-0.00872**	-0.00810**	-0.00824**	-0.00988***	-0.00326
	(0.00350)	(0.00357)	(0.00351)	(0.00366)	(0.00366)	(0.00395)
SI	0.176*	0.189*	0.161	0.189*	0.163	0.169*
	(0.101)	(0.100)	(0.0990)	(0.102)	(0.102)	(0.102)
WHS	-0.269					
	(0.208)					
ICH		-0.0377**				
		(0.0171)				
MON			-0.00130***			
			(0.000431)			
NIC				-0.0109*		
				(0.00580)		
MUS					-0.0345*	
					(0.0192)	
BUS						-0.0166
						(0.0616)
Cons	-5.952	-6.898	-5.346	-6.775	-5.583	-6.360
	(4.597)	(4.553)	(4.500)	(4.650)	(4.637)	(4.617)
W*TOUR	-1.179***	-1.064***	-1.315***	-1.033***	-0.969***	-1.876*
	(0.250)	(0.246)	(0.298)	(0.253)	(0.242)	(1.124)
W*GDP	-0.0602	-0.0797	0.00382	-0.0834	-0.0859	-0.367
	(0.137)	(0.150)	(0.150)	(0.163)	(0.158)	(0.268)
W*EQI	6.021	-6.120	9.197	-7.221	-6.038	19.46*
	(8.427)	(8.340)	(8.145)	(8.522)	(8.398)	(10.11)
W*HHI	-77.41	-48.78	-87.22	-48.77	-34.47	-79.03
	(89.01)	(98.77)	(90.04)	(109.4)	(106.4)	(159.6)
W*TP	0.658***	0.793***	0.640***	0.682***	0.699***	0.401*
	(0.208)	(0.215)	(0.206)	(0.209)	(0.225)	(0.241)
W*SI	-0.222	-0.547*	-0.262	-0.400	-0.360	0.573
	(0.332)	(0.330)	(0.321)	(0.353)	(0.478)	(0.702)
W*WHS	-4.548					
	(10.35)					
W*ICH		2.038*				
		(1.108)				
W*MON			0.00671			
			(0.0211)			
W*NIC				0.367		
				(0.239)		
W*MUS					-0.618	
					(0.743)	
W*BUS						0.635
						(1.890)
λ	6.721***	5.358***	6.767***	5.361***	5.233***	4.323
	(0.356)	(0.278)	(0.324)	(0.283)	(0.347)	(3.408)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
Pseudo R^2	0.4320	0.5022	0.4133	0.5031	0.5174	0.5559
AIC	572.9941	571.7371	565.0568	574.1683	575.6609	517.9408

Table A 15. Recovery Phase (2021): SDEM Model Estimates with Controls, Coastal Regions

	(A3a2.1)	(A3a2.2)	(A3a2.3)	(A3a2.4)	(A3a2.5)	(A3a2.6)
TOUR	0.0206***	0.0230***	0.0182***	0.0245***	0.0246***	0.0202**
	(0.00567)	(0.00585)	(0.00566)	(0.00572)	(0.00558)	(0.00819)
GDP	0.000694	0.000691	-0.000659	0.000842	-0.000164	-0.000542
	(0.00137)	(0.00137)	(0.00133)	(0.00138)	(0.00136)	(0.00155)
EQI	0.139**	0.126**	0.110*	0.116*	0.111*	0.162***
	(0.0639)	(0.0637)	(0.0608)	(0.0638)	(0.0632)	(0.0613)
HHI	2.795***	2.545***	2.379***	2.564***	2.743***	2.375***
	(0.702)	(0.719)	(0.681)	(0.707)	(0.684)	(0.710)
TP	0.00189**	0.00227**	0.00261***	0.00241**	0.00286***	0.000464
	(0.000955)	(0.000969)	(0.000920)	(0.000980)	(0.000968)	(0.000970)
SI	-0.0587***	-0.0585***	-0.0529***	-0.0548***	-0.0530***	-0.0577***
	(0.0143)	(0.0137)	(0.0136)	(0.0143)	(0.0141)	(0.0135)
WHS	0.114**					
	(0.0566)					
ICH		0.0116**				
		(0.00463)				
MON			0.000606***			
			(0.000114)			
NIC				0.00446***		
				(0.00155)		
MUS					0.0193***	
					(0.00508)	
BUS						0.0402**
						(0.0160)
Cons	2.671***	2.732***	2.465***	2.474***	2.374***	2.876***
	(0.665)	(0.637)	(0.627)	(0.662)	(0.649)	(0.635)
W*TOUR	0.247***	0.269***	0.189**	0.239***	0.267***	0.773***
	(0.0691)	(0.0750)	(0.0833)	(0.0781)	(0.0697)	(0.271)
W*GDP	-0.0624	-0.0578	-0.0427	-0.0298	-0.0549	-0.00227
	(0.0383)	(0.0414)	(0.0406)	(0.0471)	(0.0439)	(0.0632)
W*EQI	-2.262	-1.555	-2.555	-2.453	-2.262	-4.022
	(2.286)	(2.173)	(2.072)	(2.280)	(2.232)	(2.648)
W*HHI	68.02***	59.87**	50.53**	41.48	51.02*	19.58
	(25.77)	(28.34)	(24.90)	(32.26)	(30.91)	(42.21)
W*TP	-0.0698	-0.0422	-0.0964*	-0.0406	-0.0784	-0.0538
	(0.0585)	(0.0611)	(0.0558)	(0.0590)	(0.0623)	(0.0628)
W*SI	-0.155	-0.172*	-0.0925	-0.138	-0.0791	-0.130
	(0.0975)	(0.0956)	(0.0911)	(0.103)	(0.128)	(0.163)
W*WHS	1.511					
	(2.809)					
W*ICH		-0.0742				
		(0.300)				
W*MON			0.00912			
			(0.00563)			
W*NIC				0.0254		
				(0.0642)		
W*MUS					-0.0490	
					(0.176)	
W*BUS						0.870**
						(0.440)
λ	6.877***	7.766***	7.886***	6.876***	6.883***	13.65***
	(0.315)	(0.341)	(0.467)	(0.313)	(0.299)	(1.413)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
Pseudo R^2	0.4493	0.4546	0.5652	0.4509	0.4371	0.7044
AIC	49.87554	47.91138	27.62248	45.58599	39.96791	18.6914

Table A 16. Recovery Phase (2022): SDEM Model Estimates with Controls, Coastal Regions

	(A3a3.1)	(A3a3.2)	(A3a3.3)	(A3a3.4)	(A3a3.5)	(A3a3.6)
TOUR	0.00893***	0.0110***	0.00882***	0.0109***	0.0117***	0.00990***
	(0.00272)	(0.00274)	(0.00264)	(0.00273)	(0.00260)	(0.00380)
GDP	0.000235	0.000375	-0.000256	0.000331	-0.0000721	-0.000189
	(0.000638)	(0.000639)	(0.000624)	(0.000649)	(0.000633)	(0.000726)
EQI	0.0665**	0.0605**	0.0526*	0.0553*	0.0534*	0.0749***
	(0.0300)	(0.0299)	(0.0285)	(0.0301)	(0.0297)	(0.0286)
HHI	1.386***	1.225***	1.146***	1.264***	1.322***	1.119***
	(0.331)	(0.336)	(0.317)	(0.334)	(0.320)	(0.332)
TP	0.000864*	0.00101**	0.00117***	0.00108**	0.00129***	0.000168
	(0.000444)	(0.000451)	(0.000430)	(0.000460)	(0.000449)	(0.000454)
SI	-0.0884***	-0.0876***	-0.0812***	-0.0847***	-0.0811***	-0.0869***
	(0.0164)	(0.0163)	(0.0156)	(0.0165)	(0.0161)	(0.0154)
WHS	0.0550**					
	(0.0266)					
ICH		0.00550**				
		(0.00216)				
MON			0.000287***			
			(0.0000534)			
NIC				0.00203***		
				(0.000726)		
MUS					0.00897***	
					(0.00239)	
BUS						0.0177**
						(0.00746)
Cons	1.838***	1.849***	1.724***	1.765***	1.679***	1.928***
	(0.310)	(0.306)	(0.291)	(0.311)	(0.302)	(0.294)
W*TOUR	0.102***	0.119***	0.0892**	0.105***	0.122***	0.374***
	(0.0323)	(0.0344)	(0.0384)	(0.0365)	(0.0310)	(0.124)
W*GDP	-0.0203	-0.0193	-0.0172	-0.00940	-0.0228	0.00337
	(0.0169)	(0.0188)	(0.0184)	(0.0210)	(0.0179)	(0.0308)
W*EQI	-1.195	-1.290	-1.512	-1.149	-1.354	-2.025
	(1.112)	(1.109)	(1.054)	(1.104)	(1.134)	(1.262)
W*HHI	25.96**	23.59*	21.71**	16.52	22.74*	8.071
	(10.74)	(12.36)	(10.66)	(14.03)	(11.69)	(17.08)
W*TP	-0.0348	-0.0231	-0.0448*	-0.0220	-0.0356	-0.0281
	(0.0248)	(0.0259)	(0.0240)	(0.0250)	(0.0251)	(0.0282)
W*SI	-0.162**	-0.184**	-0.104	-0.147	-0.105	-0.142
	(0.0823)	(0.0821)	(0.0791)	(0.0953)	(0.108)	(0.148)
W*WHS	0.820					
	(1.307)					
W*ICH		-0.0529				
		(0.140)				
W*MON			0.00372			
			(0.00266)			
W*NIC				0.00364		
				(0.0328)		
W*MUS					-0.00856	
					(0.0802)	
W*BUS						0.333
						(0.245)
λ	7.878***	7.782***	7.874***	7.816***	6.889***	13.60***
	(0.427)	(0.351)	(0.454)	(0.383)	(0.300)	(1.373)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	201	201	201	201	201	183
Pseudo R^2	0.8065	0.7860	0.8328	0.7992	0.7719	0.8924
AIC	-256.3046	-258.6656	-279.1431	-259.7382	-265.9136	-259.6355

Table A 17. Resistance Phase: SDEM Model Estimates with Controls, Mountain Regions

	(A3b1.1)	(A3b1.2)	(A3b1.3)	(A3b1.4)	(A3b1.5)	(A3b1.6)
TOUR	-0.185***	-0.212***	-0.191***	-0.203***	-0.191***	-0.309***
	(0.0335)	(0.0356)	(0.0332)	(0.0349)	(0.0332)	(0.0465)
GDP	-0.0111***	-0.0121***	-0.0103**	-0.0137***	-0.00898**	-0.00802
	(0.00414)	(0.00413)	(0.00411)	(0.00422)	(0.00418)	(0.00497)
EQI	-0.218	-0.242	-0.237	-0.236	-0.322	-0.230
	(0.240)	(0.234)	(0.234)	(0.233)	(0.237)	(0.265)
HHI	-7.372***	-5.905**	-6.426***	-6.353***	-7.379***	-4.395*
	(2.386)	(2.428)	(2.375)	(2.375)	(2.377)	(2.627)
TP	-0.00833**	-0.00848**	-0.00989***	-0.00789**	-0.00929**	-0.00321
	(0.00361)	(0.00371)	(0.00365)	(0.00376)	(0.00374)	(0.00382)
SI	0.271***	0.283***	0.317***	0.304***	0.297***	0.253***
	(0.0802)	(0.0780)	(0.0772)	(0.0794)	(0.0779)	(0.0933)
WHS	-0.210					
	(0.176)					
ICH		-0.0288*				
		(0.0170)				
MON			-0.000999***			
			(0.000386)			
NIC				-0.00719		
				(0.00537)		
MUS					-0.0239*	
					(0.0142)	
BUS						-0.0501
						(0.0612)
Cons	-10.20***	-11.06***	-12.23***	-11.82***	-11.45***	-10.25**
	(3.801)	(3.663)	(3.612)	(3.661)	(3.670)	(4.206)
W*TOUR	-6.221***	-4.567**	-5.733***	-4.608**	-4.992**	-3.682
	(2.118)	(2.190)	(2.085)	(2.127)	(2.174)	(2.748)
W*GDP	0.133	0.207	0.193	0.333	0.234	0.0137
	(0.198)	(0.196)	(0.197)	(0.209)	(0.195)	(0.208)
W*EQI	11.55	12.54	11.48	10.22	10.51	20.34*
	(9.563)	(9.465)	(9.451)	(9.445)	(9.485)	(10.71)
W*HHI	-65.60	-115.6	-41.73	-164.5	-148.7	-126.2
	(95.17)	(116.5)	(108.7)	(133.2)	(115.5)	(129.7)
W*TP	0.709***	0.723***	0.733***	0.620***	0.632***	0.403*
	(0.212)	(0.236)	(0.210)	(0.215)	(0.218)	(0.227)
W*SI	-0.514	-0.541	-0.764	-0.408	-0.172	0.163
	(0.470)	(0.466)	(0.491)	(0.508)	(0.613)	(0.581)
W*WHS	-9.232					
	(9.292)					
W*ICH		1.905*				
		(1.108)				
W*MON			-0.00189			
			(0.0195)			
W*NIC				0.366*		
				(0.200)		
W*MUS					-1.165*	
					(0.693)	
W*BUS						2.080
						(1.485)
λ	5.026	5.171*	4.285	4.492	5.408*	3.941
	(3.082)	(3.069)	(3.129)	(3.002)	(3.106)	(3.302)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
Pseudo R^2	0.6376	0.6453	0.6477	0.6486	0.6439	0.6219
AIC	504.937	500.7831	500.3594	499.7071	500.8376	481.2964

Table A 18. Recovery Phase (2021): SDEM Model Estimates with Controls, Mountain Regions

	(A3b2.1)	(A3b2.2)	(A3b2.3)	(A3b2.4)	(A3b2.5)	(A3b2.6)
TOUR	0.0273***	0.0332***	0.0279***	0.0309***	0.0282***	0.0377***
	(0.0101)	(0.0106)	(0.00988)	(0.0105)	(0.00996)	(0.0138)
GDP	0.00125	0.00145	0.00102	0.00137	0.000690	0.00000613
	(0.00126)	(0.00125)	(0.00123)	(0.00128)	(0.00128)	(0.00153)
EQI	0.0826	0.0854	0.0920	0.0821	0.0925	0.0464
	(0.0758)	(0.0740)	(0.0747)	(0.0746)	(0.0753)	(0.0801)
HHI	2.367***	2.061***	2.286***	2.211***	2.501***	2.317***
	(0.723)	(0.741)	(0.730)	(0.736)	(0.718)	(0.796)
TP	-0.000366	-0.000132	0.000145	-0.0000451	0.000252	-0.00109
	(0.00107)	(0.00111)	(0.00107)	(0.00112)	(0.00111)	(0.00113)
SI	-0.0681***	-0.0678***	-0.0731***	-0.0720***	-0.0684***	-0.0784***
	(0.0124)	(0.0122)	(0.0119)	(0.0125)	(0.0122)	(0.0146)
WHS	0.0304					
	(0.0543)					
ICH		0.00711				
		(0.00502)				
MON			0.000255**			
			(0.000116)			
NIC				0.00171		
				(0.00153)		
MUS					0.00885**	
					(0.00433)	
BUS						0.0379**
						(0.0182)
Cons	3.144***	3.161***	3.298***	3.282***	3.089***	3.545***
	(0.620)	(0.601)	(0.580)	(0.602)	(0.603)	(0.663)
W*TOUR	0.120	-0.199	0.129	0.0339	0.0123	0.0670
	(0.634)	(0.630)	(0.603)	(0.631)	(0.629)	(0.768)
W*GDP	-0.0857*	-0.100*	-0.112**	-0.0727	-0.111**	-0.0687
	(0.0492)	(0.0511)	(0.0499)	(0.0599)	(0.0526)	(0.0542)
W*EQI	-2.916	-3.203	-2.826	-3.114	-2.583	-1.090
	(3.119)	(3.092)	(3.050)	(3.126)	(3.102)	(3.497)
W*HHI	28.69	30.76	41.05	8.559	37.66	31.51
	(29.77)	(34.78)	(32.48)	(39.46)	(36.71)	(40.70)
W*TP	-0.0323	-0.0243	-0.0422	-0.0193	-0.0297	-0.0147
	(0.0672)	(0.0740)	(0.0660)	(0.0679)	(0.0690)	(0.0719)
W*SI	0.0137	0.0247	0.0388	0.0530	0.00934	-0.0436
	(0.130)	(0.127)	(0.128)	(0.134)	(0.159)	(0.144)
W*WHS	0.823					
	(2.733)					
W*ICH		-0.256				
		(0.311)				
W*MON			-0.00656			
			(0.00555)			
W*NIC				0.0267		
				(0.0556)		
W*MUS					0.133	
					(0.181)	
W*BUS						-0.121
						(0.395)
λ	14.60***	14.82***	14.93***	14.55***	14.66***	14.69***
	(1.662)	(1.659)	(1.652)	(1.658)	(1.674)	(1.673)
Ctr. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
Pseudo R^2	0.6220	0.6236	0.6302	0.6244	0.6255	0.6423
AIC	51.62459	48.58077	44.09784	50.68949	47.71055	47.04855

Table A 19. Recovery Phase (2022): SDEM Model Estimates with Controls, Mountain Regions

	(A3b3.1)	(A3b3.2)	(A3b3.3)	(A3b3.4)	(A3b3.5)	(A3b3.6)
TOUR	0.0132***	0.0161***	0.0132***	0.0152***	0.0136***	0.0185***
	(0.00465)	(0.00490)	(0.00456)	(0.00485)	(0.00459)	(0.00636)
GDP	0.000547	0.000644	0.000487	0.000580	0.000303	0.00000695
	(0.000583)	(0.000581)	(0.000571)	(0.000595)	(0.000592)	(0.000707)
EQI	0.0402	0.0415	0.0438	0.0387	0.0435	0.0218
	(0.0352)	(0.0344)	(0.0348)	(0.0347)	(0.0353)	(0.0373)
HHI	1.141***	0.992***	1.104***	1.055***	1.206***	1.098***
	(0.336)	(0.344)	(0.340)	(0.341)	(0.334)	(0.369)
TP	-0.000178	-0.0000619	0.0000663	0.0000153	0.000124	-0.000520
	(0.000499)	(0.000516)	(0.000499)	(0.000522)	(0.000516)	(0.000523)
SI	-0.908***	-0.904***	-0.962***	-0.962***	-0.908***	-1.020***
	(0.145)	(0.143)	(0.140)	(0.146)	(0.142)	(0.170)
WHS	0.0149					
	(0.0253)					
ICH		0.00351				
		(0.00234)				
MON			0.000124**			
			(0.0000543)			
NIC				0.000981		
				(0.000730)		
MUS					0.00424**	
					(0.00201)	
BUS						0.0175**
						(0.00845)
Cons	15.45***	15.40***	16.31***	16.32***	15.42***	17.30***
	(2.443)	(2.390)	(2.347)	(2.438)	(2.389)	(2.836)
W*TOUR	0.0433	-0.113	0.0691	-0.00835	0.00604	0.0546
	(0.299)	(0.296)	(0.285)	(0.295)	(0.294)	(0.360)
W*GDP	-0.0440*	-0.0513**	-0.0525**	-0.0374	-0.0540**	-0.0303
	(0.0253)	(0.0261)	(0.0248)	(0.0284)	(0.0256)	(0.0261)
W*EQI	-1.147	-1.276	-1.421	-1.050	-1.050	-0.587
	(1.574)	(1.558)	(1.550)	(1.570)	(1.563)	(1.645)
W*HHI	13.17	14.56	21.23*	1.487	16.39	13.35
	(11.00)	(13.96)	(12.73)	(16.13)	(12.47)	(16.99)
W*TP	-0.0141	-0.00937	-0.0177	-0.00474	-0.0139	-0.00780
	(0.0308)	(0.0340)	(0.0301)	(0.0313)	(0.0308)	(0.0327)
W*SI	0.0348	0.0430	0.0164	0.0921	0.0377	-0.0428
	(0.101)	(0.0996)	(0.107)	(0.112)	(0.127)	(0.138)
W*WHS	0.404					
	(1.264)					
W*ICH		-0.123				
		(0.145)				
W*MON			-0.00305			
			(0.00276)			
W*NIC				0.0208		
				(0.0277)		
W*MUS					0.0484	
					(0.0865)	
W*BUS						-0.0694
						(0.223)
λ	14.57***	14.81***	14.90***	14.54***	14.63***	14.62***
	(1.659)	(1.656)	(1.658)	(1.656)	(1.670)	(1.674)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	192	192	192	192	192	184
Pseudo R^2	0.8628	0.8635	0.8661	0.8640	0.8644	0.8688
AIC	-241.9127	-245.2655	-249.9241	-243.377	-245.968	-234.8033

Table A 20. Resistance Phase: SDEM Model Estimates with Controls, Urban Regions

	(A3c1.1)	(A3c1.2)	(A3c1.3)	(AA3c1.4)	(A3c1.5)	(A3c1.6)
TOUR	-0.00199	-0.00231	-0.00210	-0.00223	-0.00473	0.000842
	(0.00587)	(0.00572)	(0.00556)	(0.00568)	(0.00583)	(0.00806)
GDP	-0.000500	-0.00158	-0.000334	-0.00204	0.00238	-0.00420
	(0.00355)	(0.00349)	(0.00335)	(0.00348)	(0.00353)	(0.00370)
EQI	-0.0755	-0.0707	-0.0254	-0.105	-0.162	-0.0863
	(0.198)	(0.194)	(0.188)	(0.191)	(0.195)	(0.189)
HHI	-19.48***	-19.77***	-19.01***	-19.81***	-21.36***	-8.503***
	(2.810)	(2.756)	(2.697)	(2.739)	(2.846)	(3.079)
TP	-0.00773**	-0.0102***	-0.00813***	-0.00999***	-0.00951***	-0.00568*
	(0.00323)	(0.00326)	(0.00312)	(0.00324)	(0.00335)	(0.00326)
SI	0.0933	0.0633	0.0831	0.0556	0.0906	0.106
	(0.102)	(0.101)	(0.0983)	(0.101)	(0.102)	(0.0941)
WHS	-0.912***					
	(0.305)					
ICH		-0.211***				
		(0.0543)				
MON			-0.00305***			
			(0.000582)			
NIC				-0.0660***		
				(0.0159)		
MUS					-0.0396**	
					(0.0170)	
BUS						0.0178
						(0.0462)
Cons	0.521	2.261	1.087	2.895	0.705	-3.030
	(4.650)	(4.641)	(4.475)	(4.640)	(4.675)	(4.299)
W*TOUR	-0.0111	-0.0163	-0.0177	-0.0179	-0.0275	0.0530
	(0.0391)	(0.0381)	(0.0372)	(0.0379)	(0.0388)	(0.181)
W*GDP	-0.0337	-0.0382	-0.0277	-0.0192	0.0170	-0.122
	(0.0736)	(0.0757)	(0.0729)	(0.0767)	(0.0775)	(0.0937)
W*EQI	2.429	4.986	5.030	4.711	1.372	7.569
	(5.685)	(5.587)	(5.279)	(5.711)	(5.669)	(7.931)
W*HHI	-121.3	-129.3	-105.0	-139.7*	-174.7*	34.64
	(80.65)	(79.57)	(78.17)	(83.44)	(92.43)	(152.9)
W*TP	0.749***	0.755***	0.638***	0.777***	0.582**	0.385*
	(0.223)	(0.218)	(0.216)	(0.218)	(0.245)	(0.234)
W*SI	-0.459	-0.338	-0.338	-0.406	0.0352	-0.372
	(0.310)	(0.304)	(0.298)	(0.311)	(0.487)	(0.519)
W*WHS	-13.13					
	(18.54)					
W*ICH		-1.827				
		(1.972)				
W*MON			-0.00699			
			(0.0178)			
W*NIC				-0.103		
				(0.279)		
W*MUS					-0.894	
					(0.671)	
W*BUS						-0.289
						(1.412)
λ	3.030*	2.690*	2.115	2.704*	2.926*	1.750
	(1.558)	(1.571)	(1.717)	(1.623)	(1.582)	(2.357)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
Pseudo R^2	0.5204	0.5349	0.5620	0.5394	0.5218	0.3599
AIC	655.7264	650.1244	638.3592	647.8325	655.6197	573.9174

Table A 21. Recovery Phase (2021): SDEM Model Estimates with Controls, Urban Regions

	(A3c2.1)	(A3c2.2)	(A3c2.3)	(A3c2.4)	(A3c2.5)	(A3c2.6)
TOUR	0.00459***	0.00490***	0.00488***	0.00488***	0.00537***	0.000252
	(0.00153)	(0.00155)	(0.00149)	(0.00155)	(0.00154)	(0.00216)
GDP	-0.00220**	-0.00218**	-0.00225**	-0.00211**	-0.00286***	-0.00224**
	(0.000945)	(0.000961)	(0.000912)	(0.000961)	(0.000948)	(0.000991)
EQI	0.166***	0.178***	0.156***	0.183***	0.192***	0.178***
	(0.0529)	(0.0535)	(0.0515)	(0.0532)	(0.0526)	(0.0507)
HHI	4.123***	4.213***	3.974***	4.220***	4.623***	2.345***
	(0.742)	(0.754)	(0.730)	(0.754)	(0.759)	(0.827)
TP	0.00305***	0.00334***	0.00322***	0.00331***	0.00357***	0.00191**
	(0.000845)	(0.000888)	(0.000834)	(0.000886)	(0.000888)	(0.000857)
SI	-0.0392***	-0.0386***	-0.0382***	-0.0380***	-0.0388***	-0.0377***
	(0.0141)	(0.0145)	(0.0139)	(0.0145)	(0.0143)	(0.0132)
WHS	0.298***					
	(0.0808)					
ICH		0.0272*				
		(0.0148)				
MON			0.000711***			
			(0.000157)			
NIC				0.00864**		
				(0.00437)		
MUS					0.0108**	
					(0.00450)	
BUS						0.0358***
						(0.0124)
Cons	1.374**	1.382**	1.340**	1.317*	1.347**	1.837***
	(0.652)	(0.677)	(0.640)	(0.681)	(0.665)	(0.615)
W*TOUR	0.0198*	0.0220**	0.0222**	0.0221**	0.0247**	0.0691
	(0.0102)	(0.0103)	(0.00994)	(0.0103)	(0.0102)	(0.0486)
W*GDP	-0.0242	-0.0257	-0.0255	-0.0278	-0.0403*	-0.0341
	(0.0196)	(0.0207)	(0.0193)	(0.0213)	(0.0211)	(0.0259)
W*EQI	-0.943	-1.325	-1.578	-1.357	-1.333	-0.725
	(1.748)	(1.763)	(1.664)	(1.785)	(1.738)	(2.201)
W*HHI	26.03	27.19	22.52	29.53	42.88	45.68
	(24.58)	(25.42)	(25.17)	(26.46)	(27.59)	(47.62)
W*TP	-0.0285	-0.0347	-0.0177	-0.0363	0.00708	0.0261
	(0.0613)	(0.0626)	(0.0604)	(0.0637)	(0.0650)	(0.0627)
W*SI	-0.0847	-0.0924	-0.0959	-0.0909	-0.203	-0.177
	(0.111)	(0.112)	(0.111)	(0.118)	(0.140)	(0.155)
W*WHS	1.647					
	(4.929)					
W*ICH		0.307				
		(0.545)				
W*MON			0.00398			
			(0.00495)			
W*NIC				0.0286		
				(0.0780)		
W*MUS					0.198	
					(0.141)	
W*BUS						-0.405
						(0.376)
λ	3.436**	3.167**	2.920*	3.389**	3.110**	2.292
	(1.440)	(1.483)	(1.560)	(1.448)	(1.365)	(2.412)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
Pseudo R^2	0.5303	0.5128	0.5509	0.5112	0.5252	0.5664
AIC	52.52931	62.42034	44.92024	61.8894	56.52637	18.08499

Table A 22. Recovery Phase (2022): SDEM Model Estimates with Controls, Urban Regions

	(A3c3.1)	(A3c3.2)	(A3c3.3)	(A3c3.4)	(A3c3.5)	(A3c3.6)
TOUR	0.00208***	0.00224***	0.00224***	0.00222***	0.00245***	0.000169
	(0.000709)	(0.000718)	(0.000693)	(0.000719)	(0.000713)	(0.000992)
GDP	-0.00101**	-0.001000**	-0.00104**	-0.000963**	-0.00132***	-0.00104**
	(0.000437)	(0.000447)	(0.000423)	(0.000447)	(0.000441)	(0.000459)
EQI	0.0774***	0.0829***	0.0719***	0.0860***	0.0888***	0.0816***
	(0.0247)	(0.0250)	(0.0241)	(0.0250)	(0.0247)	(0.0234)
HHI	1.970***	2.011***	1.905***	2.019***	2.210***	1.128***
	(0.343)	(0.349)	(0.337)	(0.349)	(0.352)	(0.381)
TP	0.00143***	0.00156***	0.00151***	0.00153***	0.00169***	0.000881**
	(0.000388)	(0.000411)	(0.000386)	(0.000412)	(0.000410)	(0.000395)
SI	-0.0651***	-0.0644***	-0.0639***	-0.0640***	-0.0647***	-0.0635***
	(0.0160)	(0.0165)	(0.0157)	(0.0165)	(0.0162)	(0.0149)
WHS	0.143***					
	(0.0373)					
ICH		0.0131*				
		(0.00686)				
MON			0.000339***			
			(0.0000725)			
NIC				0.00405**		
				(0.00203)		
MUS					0.00514**	
					(0.00210)	
BUS						0.0161***
						(0.00572)
Cons	1.205***	1.208***	1.187***	1.183***	1.191***	1.431***
	(0.300)	(0.312)	(0.295)	(0.314)	(0.307)	(0.282)
W*TOUR	0.00897*	0.0101**	0.0103**	0.0101**	0.0112**	0.0286
	(0.00473)	(0.00480)	(0.00460)	(0.00479)	(0.00476)	(0.0239)
W*GDP	-0.00985	-0.0108	-0.0104	-0.0123	-0.0147	-0.0110
	(0.00888)	(0.00942)	(0.00879)	(0.00964)	(0.00921)	(0.0112)
W*EQI	-0.564	-0.710	-0.749	-0.789	-0.715	-0.311
	(0.914)	(0.923)	(0.883)	(0.946)	(0.933)	(1.043)
W*HHI	10.36	10.95	7.398	13.09	13.49	9.253
	(10.32)	(10.97)	(10.59)	(11.60)	(11.18)	(17.42)
W*TP	-0.0170	-0.0210	-0.0142	-0.0194	-0.0110	0.00797
	(0.0262)	(0.0269)	(0.0266)	(0.0281)	(0.0265)	(0.0288)
W*SI	-0.0732	-0.0751	-0.0594	-0.0916	-0.127	-0.0938
	(0.0943)	(0.1000)	(0.0953)	(0.118)	(0.114)	(0.125)
W*WHS	0.648					
	(2.248)					
W*ICH		0.114				
		(0.259)				
W*MON			0.00130			
			(0.00223)			
W*NIC				0.00442		
				(0.0415)		
W*MUS					0.0676	
					(0.0603)	
W*BUS						-0.161
						(0.187)
λ	3.412**	3.171**	2.840*	3.411**	3.101**	2.082
	(1.438)	(1.489)	(1.594)	(1.433)	(1.434)	(2.472)
Ctry. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	227	227	227	227	227	211
Pseudo R^2	0.8277	0.8206	0.8353	0.8199	0.8247	0.8406
AIC	-298.3158	-287.672	-305.7521	-288.2391	-292.7688	-308.6979

Table A 23. Resistance Phase: SDEM Model Estimates with Controls, Rural Regions

	(A3d1.1)	(A3d1.2)	(A3d1.3)	(A3d1.4)	(A3d1.5)	(A3d1.6)
TOUR	-0.355***	-0.356***	-0.354***	-0.358***	-0.352***	-0.345***
	(0.0476)	(0.0465)	(0.0472)	(0.0469)	(0.0473)	(0.0496)
GDP	-0.00735	-0.00997	-0.00547	-0.00906	-0.00760	-0.00762
	(0.00622)	(0.00633)	(0.00626)	(0.00630)	(0.00635)	(0.00637)
EQI	0.0717	0.0658	0.0557	0.0416	0.107	0.0902
	(0.335)	(0.334)	(0.337)	(0.336)	(0.340)	(0.346)
HHI	-0.202	1.290	-0.172	0.270	-0.397	-0.674
	(3.033)	(3.076)	(3.048)	(3.013)	(3.020)	(3.032)
TP	0.00131	-0.00354	-0.000539	-0.00235	0.00145	0.000980
	(0.00433)	(0.00461)	(0.00437)	(0.00449)	(0.00442)	(0.00453)
SI	0.0357	0.0599	0.0584	0.138	0.0322	0.0340
	(0.0759)	(0.0773)	(0.0812)	(0.0936)	(0.0769)	(0.0859)
WHS	0.167					
	(0.199)					
ICH		-0.0420**				
		(0.0195)				
MON			-0.000560			
			(0.000447)			
NIC				-0.0134**		
				(0.00665)		
MUS					0.0162	
					(0.0210)	
BUS						0.00507
						(0.0612)
Cons	-0.836	-1.623	-1.726	-4.836	-0.661	-0.643
	(3.488)	(3.538)	(3.720)	(4.154)	(3.531)	(3.842)
W*TOUR	-7.991	-2.467	-7.754	0.179	-6.497	-5.832
	(8.535)	(9.015)	(8.626)	(9.579)	(8.808)	(9.317)
W*GDP	0.364	0.690	0.439	0.579	0.417	0.339
	(0.461)	(0.469)	(0.467)	(0.524)	(0.454)	(0.467)
W*EQI	3.131	-3.531	-0.536	-3.535	-0.689	-7.516
	(11.80)	(11.87)	(11.96)	(12.16)	(12.70)	(15.07)
W*HHI	210.5	-21.59	150.3	107.5	95.63	79.84
	(200.0)	(217.0)	(196.8)	(201.8)	(229.6)	(214.3)
W*TP	-0.177	-0.130	-0.171	-0.297	-0.193	-0.224
	(0.326)	(0.345)	(0.334)	(0.325)	(0.322)	(0.333)
W*SI	-1.015	-0.707	-0.901	-0.800	-0.494	-0.632
	(0.914)	(0.877)	(0.894)	(0.913)	(1.025)	(0.944)
W*WHS	14.77					
	(12.66)					
W*ICH		1.335				
		(1.514)				
W*MON			0.00913			
			(0.0342)			
W*NIC				-0.149		
				(0.308)		
W*MUS					-0.901	
					(1.311)	
W*BUS						2.448
						(3.152)
λ	8.471	12.23**	10.44*	12.10**	9.887*	9.508*
	(5.850)	(5.363)	(5.493)	(5.745)	(5.455)	(5.632)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
Pseudo R^2	0.6369	0.6384	0.6338	0.6354	0.6332	0.6103
AIC	403.5517	399.5891	403.2025	400.9231	403.9383	401.39

Table A 24. Recovery Phase (2021): SDEM Model Estimates with Controls, Rural Regions

	(A3d2.1)	(A3d2.2)	(AA3d2.3)	(A3d2.4)	(A3d2.5)	(A3d2.6)
TOUR	0.0725***	0.0722***	0.0726***	0.0706***	0.0703***	0.0681***
	(0.0145)	(0.0143)	(0.0141)	(0.0145)	(0.0143)	(0.0148)
GDP	0.00278	0.00361*	0.00236	0.00347*	0.00286	0.00252
	(0.00185)	(0.00190)	(0.00183)	(0.00189)	(0.00185)	(0.00188)
EQI	-0.115	-0.122	-0.0950	-0.126	-0.0943	-0.114
	(0.0985)	(0.0987)	(0.0967)	(0.0978)	(0.0982)	(0.101)
HHI	-0.348	-0.829	-0.428	-0.540	-0.275	-0.460
	(0.913)	(0.928)	(0.901)	(0.910)	(0.904)	(0.905)
TP	-0.00212	-0.00125	-0.00171	-0.00157	-0.00208	-0.00185
	(0.00130)	(0.00138)	(0.00128)	(0.00135)	(0.00132)	(0.00135)
SI	-0.0373***	-0.0400***	-0.0342***	-0.0397***	-0.0412***	-0.0468***
	(0.00999)	(0.0101)	(0.0106)	(0.0128)	(0.0101)	(0.0111)
WHS	-0.0292					
	(0.0592)					
ICH		0.00834				
		(0.00586)				
MON			0.000158			
			(0.000131)			
NIC				0.00172		
				(0.00185)		
MUS					-0.00000985	
					(0.00650)	
BUS						0.0385**
						(0.0179)
Cons	2.064***	2.136***	1.961***	2.089***	2.216***	2.367***
	(0.501)	(0.500)	(0.513)	(0.584)	(0.499)	(0.526)
W*TOUR	6.716***	6.445***	8.320***	6.522**	8.031***	6.938***
	(2.422)	(2.486)	(2.415)	(2.547)	(2.448)	(2.559)
W*GDP	-0.109	-0.204	-0.0411	-0.171	-0.0205	-0.123
	(0.135)	(0.142)	(0.134)	(0.145)	(0.155)	(0.137)
W*EQI	1.074	1.837	0.771	1.825	-1.249	2.707
	(3.356)	(3.361)	(3.289)	(3.367)	(3.746)	(4.286)
W*HHI	-103.1*	-52.19	-120.7**	-82.48	-146.9**	-73.71
	(60.82)	(63.07)	(55.67)	(59.82)	(63.08)	(63.48)
W*TP	0.0959	0.0420	0.0315	0.0901	0.0984	0.127
	(0.0987)	(0.104)	(0.100)	(0.0996)	(0.0991)	(0.0997)
W*SI	0.343	0.387*	0.492**	0.384*	0.445**	0.284
	(0.217)	(0.205)	(0.205)	(0.210)	(0.211)	(0.216)
W*WHS	2.403					
	(3.996)					
W*ICH		-0.811				
		(0.514)				
W*MON			-0.0260**			
			(0.0106)			
W*NIC				-0.0844		
				(0.106)		
W*MUS					-0.548	
					(0.385)	
W*BUS						-0.866
						(0.936)
λ	-2.006	-0.433	-1.657	-3.683	-3.526	-0.716
	(4.951)	(5.014)	(4.993)	(5.182)	(5.053)	(4.908)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
Pseudo R^2	0.7236	0.7297	0.7366	0.7248	0.7255	0.7311
AIC	41.63612	38.46051	34.4218	40.49485	40.19289	39.63287

Table A 25. Recovery Phase (2022): SDEM Model Estimates with Controls, Rural Regions

	(A3d3.1)	(A3d3.2)	(A3d3.3)	(A3d3.4)	(A3d3.5)	(A3d3.6)
TOUR	0.0339***	0.0333***	0.0338***	0.0332***	0.0328***	0.0318***
	(0.00675)	(0.00662)	(0.00656)	(0.00673)	(0.00668)	(0.00689)
GDP	0.00136	0.00177**	0.00118	0.00164*	0.00139	0.00124
	(0.000854)	(0.000872)	(0.000844)	(0.000874)	(0.000856)	(0.000869)
EQI	-0.0578	-0.0642	-0.0508	-0.0616	-0.0499	-0.0586
	(0.0455)	(0.0455)	(0.0449)	(0.0453)	(0.0454)	(0.0466)
HHI	-0.106	-0.325	-0.179	-0.202	-0.0877	-0.163
	(0.422)	(0.427)	(0.419)	(0.423)	(0.419)	(0.420)
TP	-0.000870	-0.000440	-0.000641	-0.000638	-0.000823	-0.000812
	(0.000601)	(0.000637)	(0.000599)	(0.000623)	(0.000614)	(0.000628)
SI	-0.499***	-0.522***	-0.471***	-0.533***	-0.530***	-0.607***
	(0.117)	(0.118)	(0.126)	(0.151)	(0.117)	(0.132)
WHS	-0.0136					
	(0.0273)					
ICH		0.00374				
		(0.00271)				
MON			0.0000818			
			(0.0000610)			
NIC				0.000757		
				(0.000860)		
MUS					0.000104	
					(0.00301)	
BUS						0.0170**
						(0.00835)
Cons	8.734***	9.085***	8.278***	9.275***	9.251***	10.49***
	(1.955)	(1.971)	(2.092)	(2.501)	(1.960)	(2.192)
W*TOUR	3.142***	3.160***	3.636***	2.977***	3.641***	3.236***
	(1.096)	(1.128)	(1.084)	(1.155)	(1.100)	(1.160)
W*GDP	-0.0582	-0.117*	-0.0260	-0.0780	-0.0202	-0.0595
	(0.0625)	(0.0666)	(0.0631)	(0.0659)	(0.0715)	(0.0628)
W*EQI	1.760	2.598	1.741	1.985	0.995	2.437
	(1.853)	(1.874)	(1.829)	(1.864)	(1.979)	(2.162)
W*HHI	-42.80*	-16.32	-41.91*	-32.50	-57.42**	-28.96
	(23.90)	(25.46)	(22.10)	(25.46)	(24.86)	(24.99)
W*TP	0.0512	0.0213	0.0232	0.0487	0.0524	0.0635
	(0.0462)	(0.0479)	(0.0472)	(0.0467)	(0.0464)	(0.0466)
W*SI	0.393*	0.505**	0.466**	0.399*	0.469**	0.317
	(0.214)	(0.214)	(0.201)	(0.206)	(0.206)	(0.213)
W*WHS	1.208					
	(1.836)					
W*ICH		-0.495**				
		(0.248)				
W*MON			-0.0104**			
			(0.00483)			
W*NIC				-0.0291		
				(0.0465)		
W*MUS					-0.226	
					(0.176)	
W*BUS						-0.456
						(0.423)
λ	-2.622	-1.304	-2.047	-3.501	-3.887	-1.015
	(4.919)	(4.963)	(4.964)	(5.023)	(4.979)	(4.914)
Cty. dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	151	151	151	151	151	149
Pseudo R^2	0.9067	0.9096	0.9105	0.9070	0.9071	0.9088
AIC	-191.3222	-195.7249	-197.4419	-191.9849	-192.312	-189.707

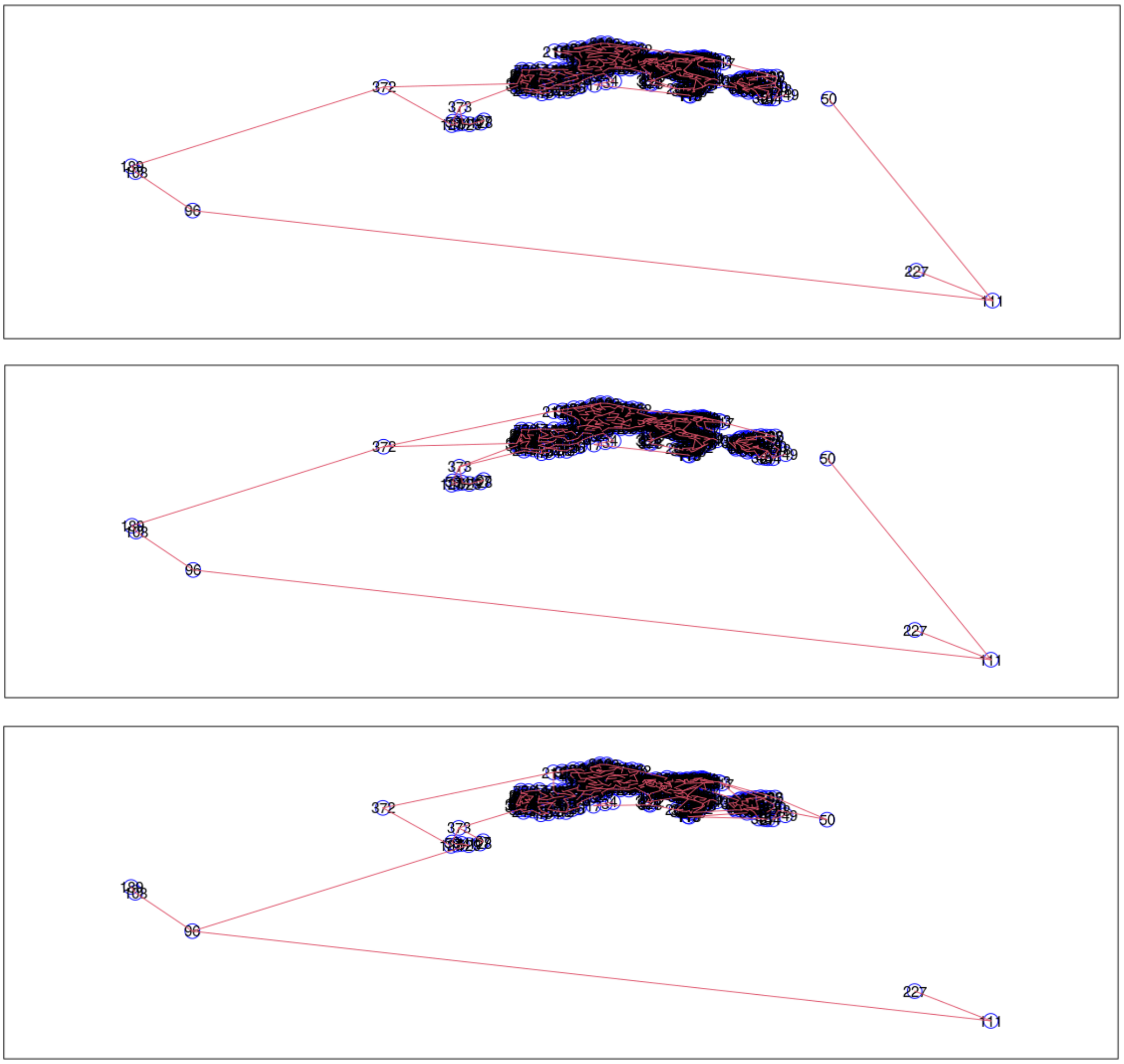

Figure A 1. Neighborhood graph (spatial regimes): WHS, ICH, MON in the Resistance Phase

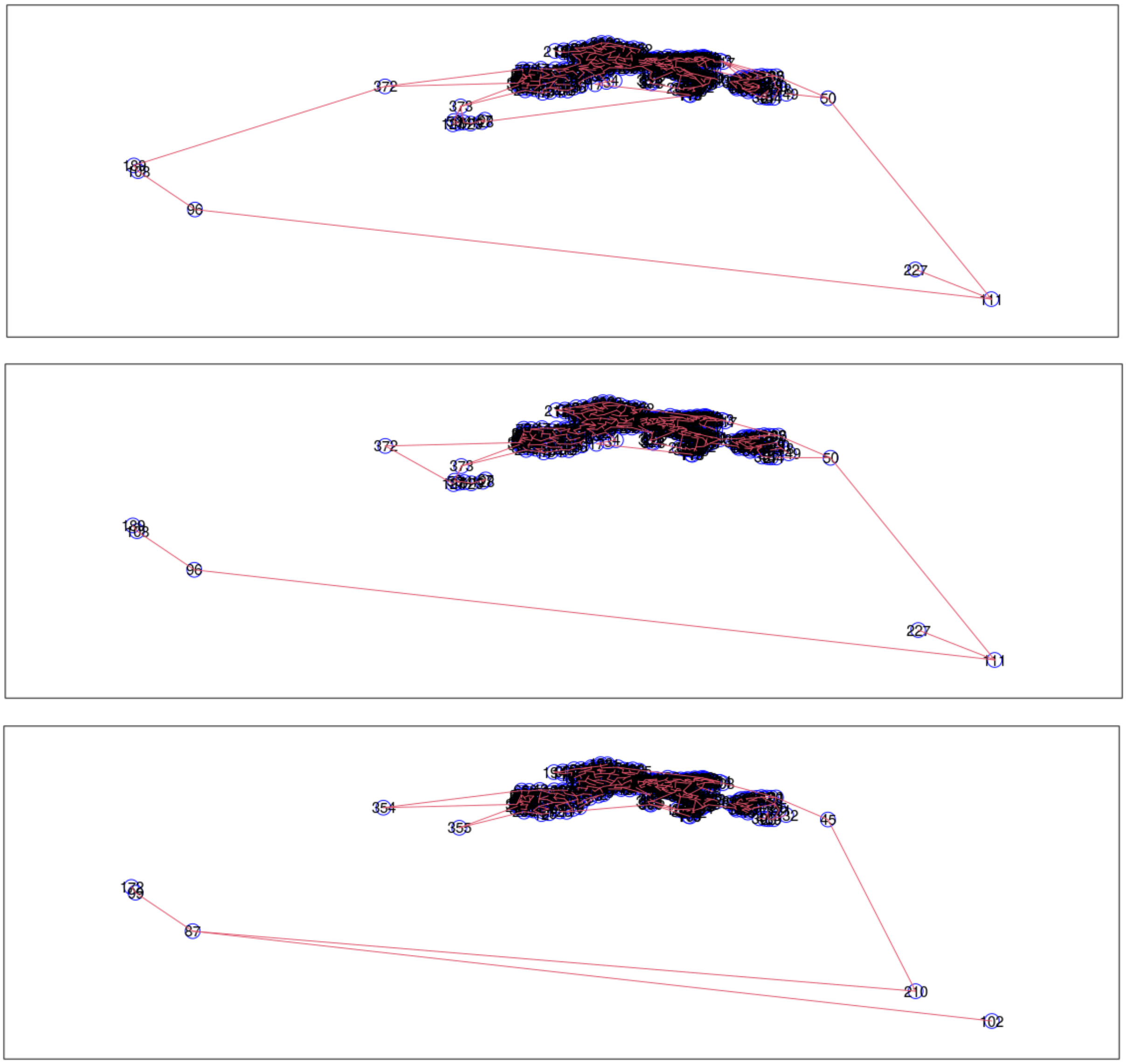

Figure A 2. Neighborhood graph (spatial regimes): NIC, MUS, BUS in the Resistance Phase

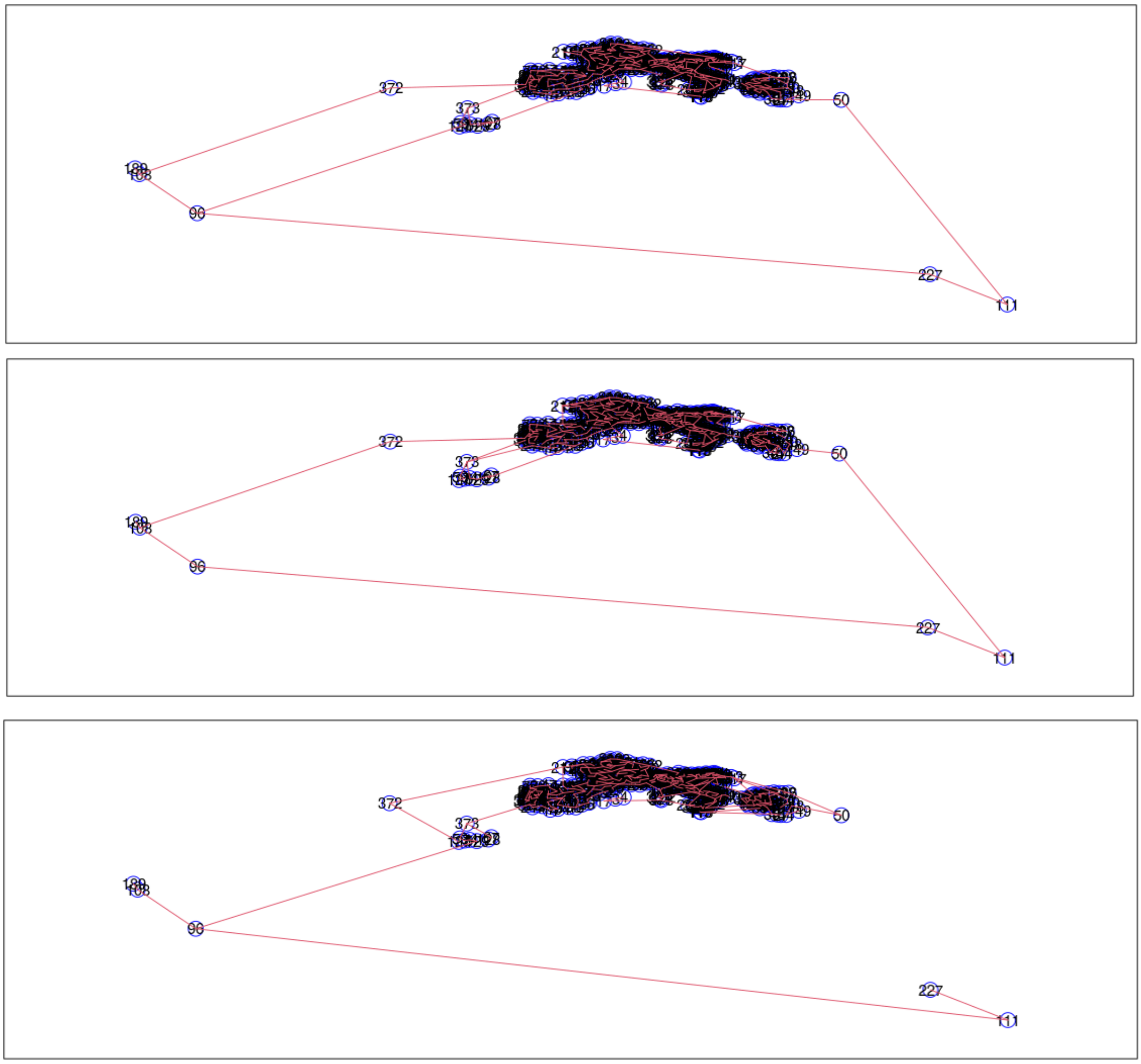

Figure A 3. Neighborhood graph (spatial regimes): WHS, ICH, MON in the Recovery (2021) Phase

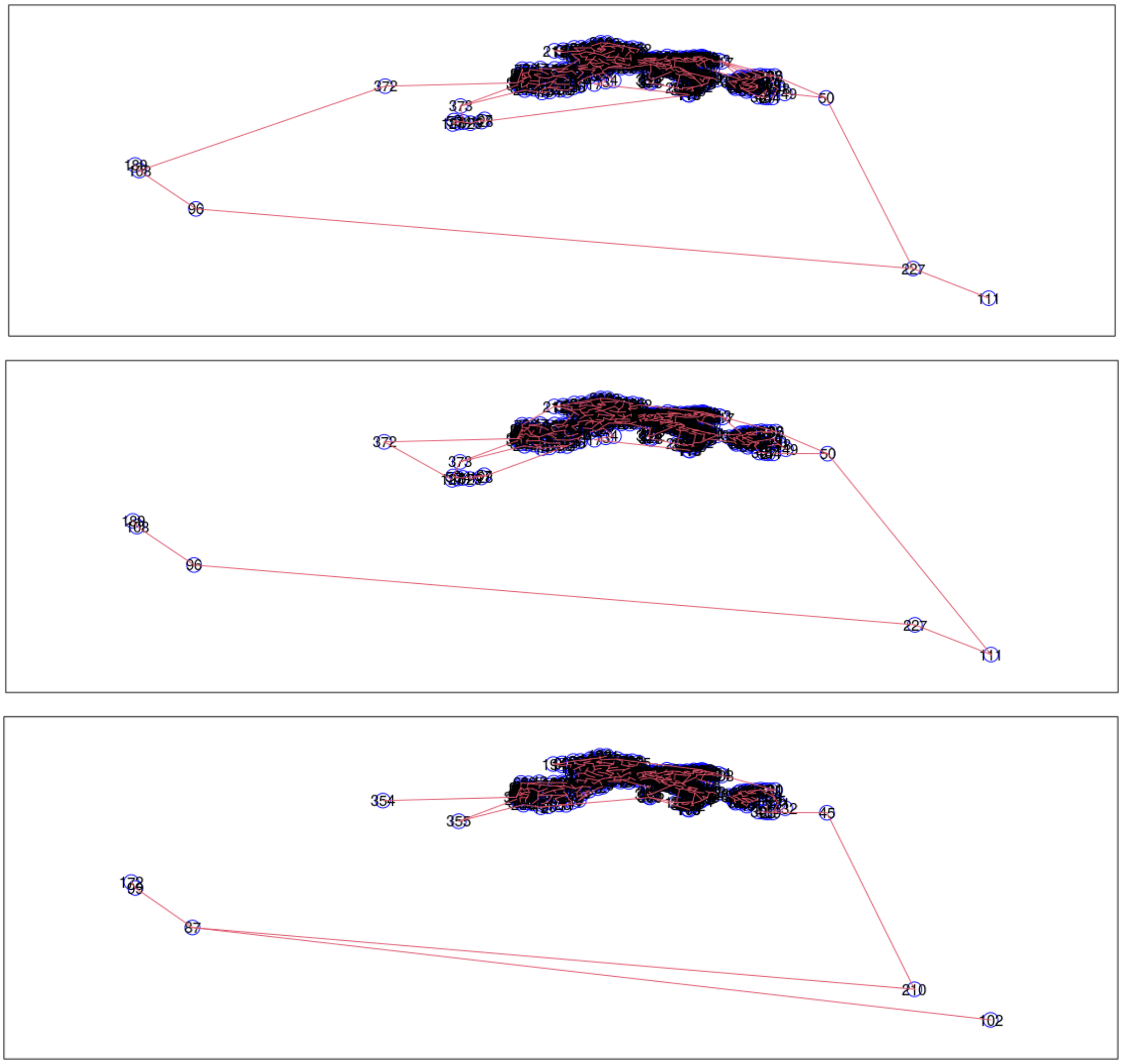

Figure A 4. Neighborhood graph (spatial regimes): NIC, MUS, BUS in the Recovery (2021) Phase

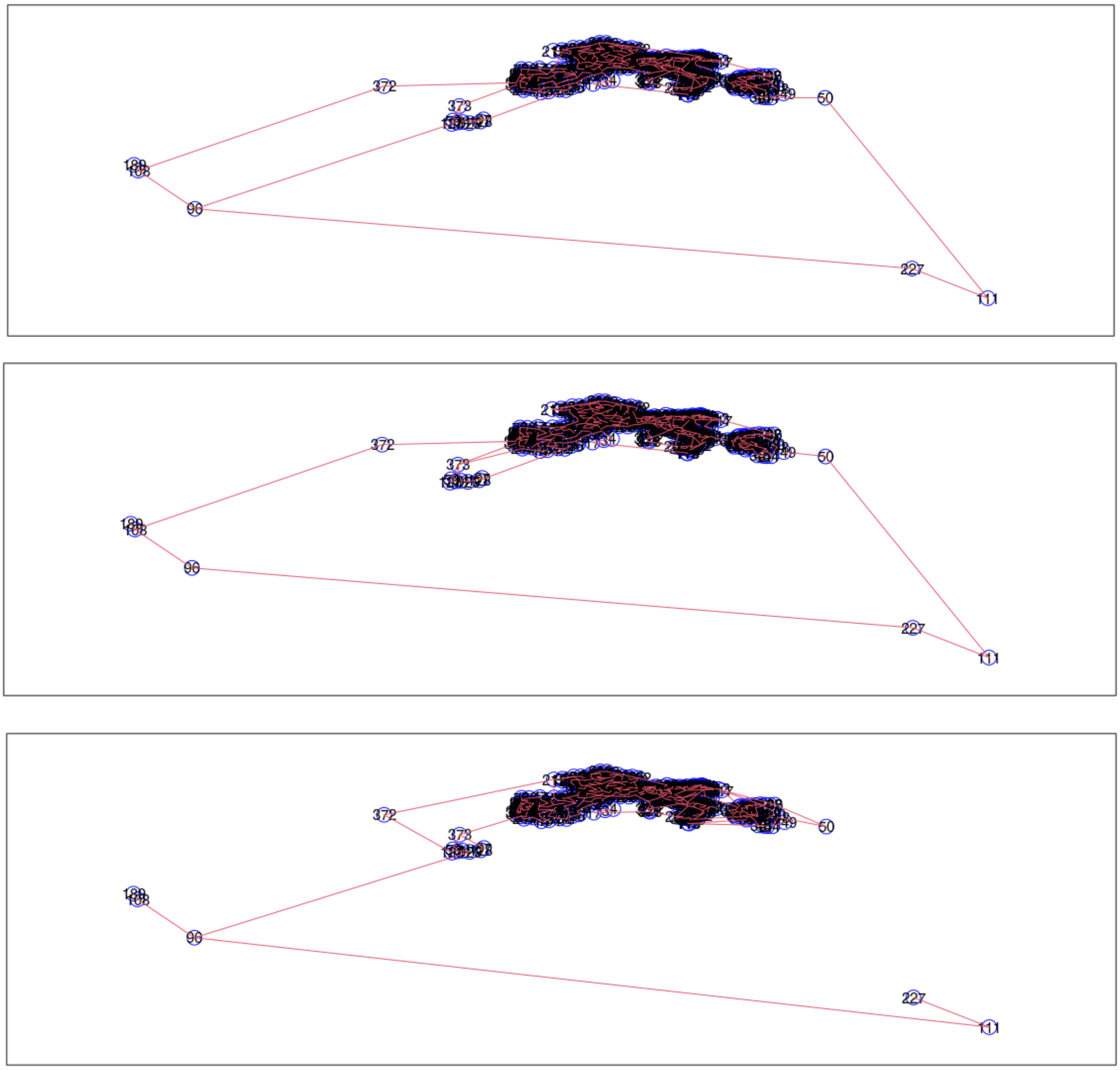

Figure A 5. Neighborhood graph (spatial regimes): WHS, ICH, MON in the Recovery (2022) Phase

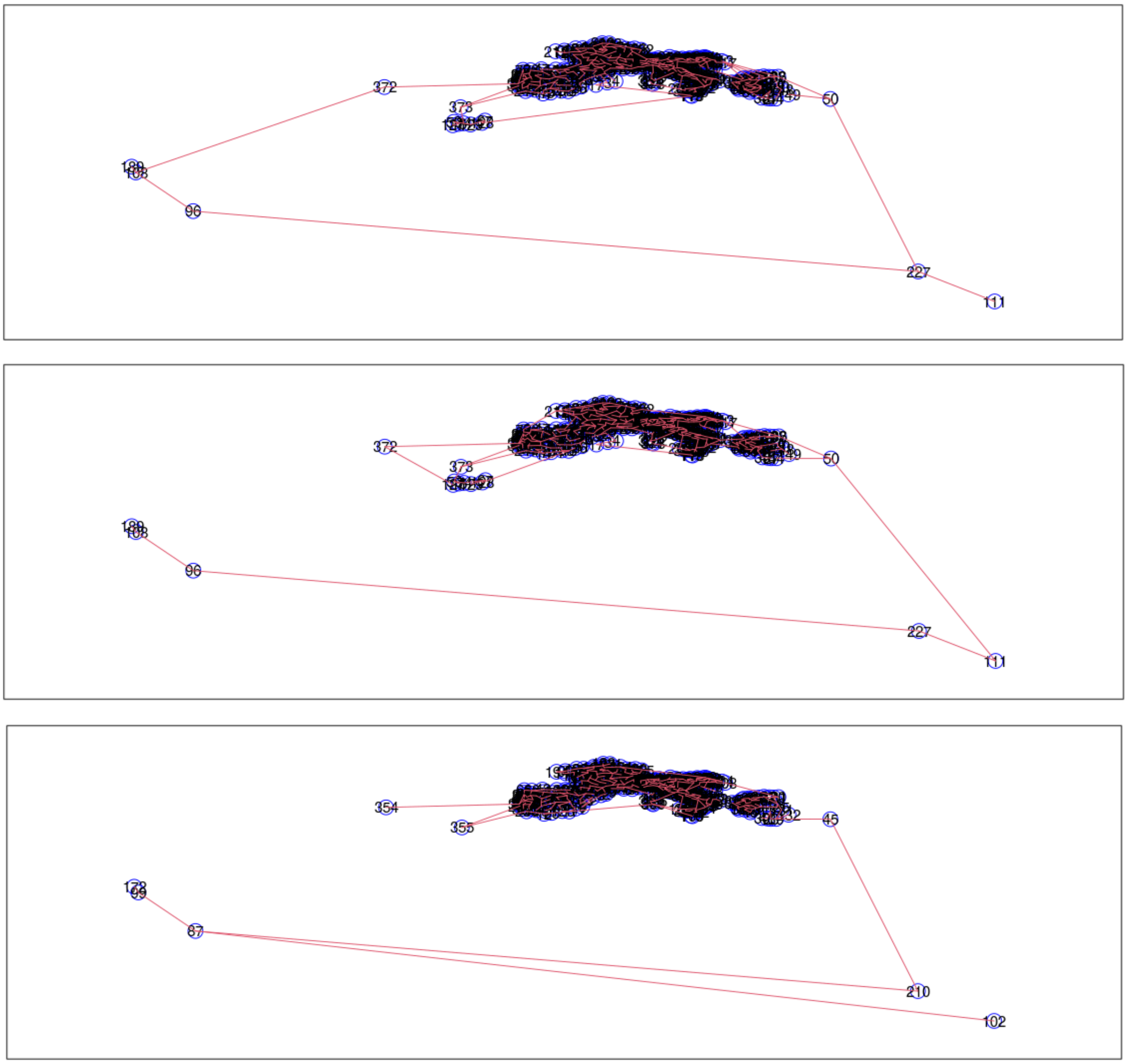

Figure A 6. Neighborhood graph (spatial regimes): NIC, MUS, BUS in the Recovery (2022) Phase

APPENDIX 2: CV OF DOCTORAL CANDIDATE

Zvonimir Kuliš, born on March 10, 1992, completed his elementary education in Split and graduated from IVth Gymnasium "Marko Marulić". In 2010, he enrolled in the Tourism program at the Faculty of Economics, Business, and Tourism (FEBT), University of Split, completing his undergraduate studies in 2013 and a graduate program in Tourism and Hotel Management in 2015, earning the Dean's Award for academic excellence.

During his studies, Zvonimir served as a student assistant for various courses and worked as a receptionist at the Le Meridien Lav hotel. After graduation, he worked as a director's assistant in organizing ITF and WTA tennis tournaments in Bol on Brač and as a data analyst in a consulting company. In January 2021, he became a doctoral candidate at FEBT through a Croatian Science Foundation (HRZZ) project and enrolled in a doctoral program in March 2021.

Zvonimir is actively involved in teaching, conducting courses at both undergraduate and graduate levels in Croatian and English. He participated in the Horizon2020 "SmartCulTour" project and other faculty initiatives, collaborating on feasibility studies and local economic projects. He was a member of the organizing committee for the "Challenges of Europe" conference in 2023 and involved in organizing World Tourism Day and the University of Split Fair.

From 2021 to 2024, Zvonimir served as the secretary of the Department of Tourism and Economy and as a member of the Faculty Council. Through the Erasmus+ program, he spent time at KU Leuven University (2022-2023) and completed training at the Barcelona School of Economics (2022), Vrije Universiteit Amsterdam (2024) and University of Azores (2024). He has published ten scientific papers and presented at seven international conferences. Zvonimir is a member of the Croatian section of the European Regional Science Association (ERSA) and proficient in English (CAE, C1) and Spanish (B1). He actively uses the statistical software Stata and SPSS.

APPENDIX 3: LIST OF PUBLICATIONS

Publications in Academic Journals

1. Muštra, V., Šimundić, B., & Kuliš, Z. (2023). Effects of Smart Specialisation on Regional Labour Resilience. *Economy of Regions, 19*(1), 136-149.
2. Muštra, V., Šimundić, B., & Kuliš, Z. (2020). Does innovation matter for regional labour resilience? The case of EU regions. *Regional Science Policy & Practice*, 12(5), 955-970.
3. Muštra, V., Šimundić, B., & Kuliš, Z. (2017). Effects of smart specialization on regional economic resilience in EU. *Revista de Estudios Regionales*, (110), 175-195.
4. Šimundić, B., & Kuliš, Z. (2016). Tourism and economic growth in Mediterranean region: dynamic panel data approach. *Acta Economica Et Turistica*, 2(1), 65-84.

Publications in Conference Proceedings

5. Kuliš, Z., Šimundić, B., & Kuliš, B. (2022). Re-orientation as a Tool for Resistance and Recovery: Analysis of Regional Economic Resilience in Croatian NUTS 3 Regions. In *Proceedings of FEB Zagreb 13th International Odyssey Conference on Economics and Business* (p. 272-287). University of Zagreb, Faculty of Economics & Business.
6. Pivčević, S., Kuliš, Z., Šerić, N. (2016). The pull factors of tourism demand: a panel data analysis for Latin American and Caribbean Countries. In *Faculty of Tourism and Hospitality Management in Opatija. Biennial International Congress. Tourism & Hospitality Industry* (p. 319-333). University of Rijeka, Faculty of Tourism & Hospitality Management.
7. Šimundić, B., Kuliš, Z., & Šerić, N. (2016). Tourism and economic growth: an evidence for Latin American and Caribbean countries. In *Faculty of Tourism and Hospitality Management in Opatija. Biennial International Congress. Tourism & Hospitality Industry* (p. 457-469). University of Rijeka, Faculty of Tourism & Hospitality Management.
8. Kuliš, Z. (2024). The Role of Tourism in Regional Economic Recovery in Croatia. In *Economic and Social Development (Book of Proceedings), 114th International Scientific Conference on Economic and Social Development* (p. 219-232). Varazdin Development and Entrepreneurship Agency.

Book Chapters

9. Šimundić, B., Kuliš, Z., & Muštra, V. (2021). Resilience Conceptualisation and Protected Areas in the Jadranska Hrvatska Region. In *Mediterranean Protected Areas in the Era of Overtourism* (pp. 351-369). Springer, Cham.
10. Kuliš, Z., Šimundić, B., & Pivčević, S. (2018). The Analysis of Tourism and Economic Growth Relationship in Central and Eastern European Countries. In *Economy, Finance and Business in Southeastern and Central Europe* (pp. 537-551). Springer, Cham.