

## EXTENDED ABSTRACT

# BEYOND TOTAL EXPENDITURE: THE RELEVANCE OF THE TOURISM CONSUMPTION VECTOR IN ESTIMATING ECONOMIC IMPACT

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### 1. INTRODUCTION

In recent years, tourism has not only generated employment at an above-average rate within the European Union (EU) economy but has also created a significant number of job opportunities for young people, women, and low-skilled workers (European Commission, 2010; Ladkin, 2011; Turner, 2013). These characteristics make tourism a key sector for promoting smart, sustainable, and inclusive growth, objectives originally set out in the Europe 2020 strategy and once again reinforced within the framework of the 2030 Agenda.

A substantial body of academic literature has examined the economic impact of tourism at both national and regional levels. In most of these studies, tourism impacts are analyzed in an aggregated manner, using different economic impact models, predominantly based on input–output techniques. The widespread adoption of this approach partly explains why public administrations responsible for tourism promotion and management have traditionally prioritized increasing visitor numbers as a means of maximizing economic impact through higher aggregate demand.

However, the literature on tourism economic impacts has progressively evolved from aggregate approaches—focused on total tourism expenditure—towards more disaggregated analyses that examine the structure and composition of tourism consumption (Benur & Bramwell, 2015; Figini *et al.*, 2025; Guaita *et al.*, 2023). This shift reflects, on the one hand, the growing recognition that not all spending patterns generate the same economic effects, even when total expenditure is identical, and on the other hand, increasing con-

cern about tourism sustainability, which often conflicts with continuous growth in visitor numbers. If the composition of tourism expenditure is more decisive than its aggregate volume, tourism can maintain its income-generating capacity without requiring a constant increase in visitor flows, thereby avoiding the constraints associated with overtourism.

To address these issues, this research proposes an alternative methodological framework based on input–output analysis that systematically captures sectoral interrelations within the regional economy while incorporating a higher level of disaggregation in tourism consumption categories. This disaggregation constitutes a relevant contribution compared to more traditional approaches, as it enables a more detailed representation of expenditure flows and, consequently, a more accurate estimation of direct, indirect, and induced effects associated with tourism activity.

To illustrate the analytical potential of the proposed methodology, this paper quantifies the direct and indirect effects generated by different types of tourists—residents, non-residents, and pilgrims—within the Galician economy, using a demand model product by product (industry technology assumption) derived from the Supply and Use Tables of the Galician input–output framework. In addition, induced effects are estimated following an approach inspired by Miyazawa’s model (Miller & Blair, 2009). Although induced effects are present in all economic activities, their estimation is particularly relevant in tourism due to the sector’s high employment intensity and strong linkages with local consumption. Nevertheless, their measurement remains subject to significant methodological limitations.

In this study, the estimation of induced effects aims to demonstrate that these impacts may also differ substantially depending on the composition of tourism consumption, since not all activities generate income in the same way. To assess the robustness of the proposed framework, results are presented for three different years: 2016, 2019, and 2021.

In line with the research objectives, the paper first presents the economic definition of tourism activity and its global relevance. It then outlines the different types of economic effects through which tourism influences the host economy. The Miyazawa model is subsequently introduced to explain the calculation of induced effects, followed by a presentation of the proposed estimation model based on the direct use of origin and destination matrices. The empirical results for the Galician economy are then discussed, distinguishing between visitor groups, thereby confirming the importance of considering the different components of tourism demand when estimating its economic impact.

A second key contribution of this study is the identification of the pilgrim as a visitor profile that, although initially considered of lower relevance, exhibits the highest total economic impact per unit of expenditure in two of the analysed periods. Finally, the main conclusions are summarized, emphasizing the importance of comprehensively measuring all tourism-related impacts to inform effective economic policy decisions.

## **2. GENERAL OBJECTIVE**

The main objective of this research is to provide empirical evidence highlighting the importance of identifying and analysing the spending patterns of different tourist segments as a key element for a rigorous and accurate assessment of their economic impact at the local, regional, or national level. Heterogeneity in tourist behaviour can generate differ-

entiated economic effects, whose correct estimation is essential for the design of public policies, territorial planning, and the efficient management of tourism-related resources.

### 3. METHODOLOGY

Rectangular input–output tables can be integrated into a single accounting framework, commonly referred to as Supply and Use Tables. For the calculation of multipliers and the subsequent estimation of induced effects, a demand model based on the industry technology assumption is employed, whereby each product is assumed to be produced using the technology of the industry, and the production of by-products does not differ from that of primary products. Market coefficients are assumed to be stable. Demand models are developed using Leontief inverses and tourism consumption vectors.

The empirical application of the proposed methodology relies on the Galician input–output framework for the reference years 2016, 2018, and 2021, published by the Galician Institute of Statistics (IGE). This framework includes detailed origin and destination tables with a breakdown of flows by source, allowing for a richer exploitation of information than that available in the corresponding symmetrical input–output tables.

Three tourism consumption vectors are constructed, one for each type of visitor. The non-resident tourism consumption vector is derived from the disaggregation of Non-Resident Consumption provided directly by the IGE. The resident tourism consumption vector is adapted using data on domestic tourism expenditure from the Spanish Tourism Satellite Accounts (2016, 2018, and 2021), assigning equal weights to characteristic and non-characteristic tourism goods, followed by a calibration process based on the structures of resident and non-resident vectors, with a lower overall weight assigned to resident consumption. Finally, the pilgrim consumption vector, which includes both resident and non-resident pilgrims, is constructed using information from a survey conducted among pilgrims (Fernández & Riveiro, 2018), complemented with data from the Resident Tourism Survey (ETR) carried out by the National Institute of Statistics (INE).

### 4. RESULTS

Transport services, in all their dimensions, account for the largest share of direct and indirect effects, followed by catering services, accommodation, and, finally, arts and entertainment services, travel agencies, and real estate activities. When induced effects are included, activities with a higher labour share exhibit greater impacts, reflecting the influence of direct income effects in tourism-related activities. Arts and entertainment services, followed by accommodation, therefore show the largest induced effects.

However, in the case of accommodation services, a significant decline in induced effects is observed in 2021, possibly linked to a sharp reduction in the labour share of value added in this activity. Increasing automation and the restructuring of service provision, particularly after the COVID-19 pandemic, have reduced the need for permanent labour in accommodation services, thereby lowering the induced effects generated through employees' consumption.

Overall, the results reveal an increase in direct and indirect effects associated with higher tourism consumption across visitor types over the analysed years. However, the induced effect exhibits a declining trend, indicating a weaker impact on household consumption generated by workers employed in tourism-related activities. This outcome is directly linked to the reduction in the labour income share, which has been particularly pronounced in the sectors most closely associated with tourism.

Finally, the estimation of tourism consumption multipliers by visitor type (resident, non-resident, and pilgrim) shows that the pilgrim multiplier was the highest in 2016 and 2018, while in 2021 it is slightly surpassed by that of non-resident tourists. This result is explained by the decline in induced effects. Given their spending patterns, pilgrims' impacts are largely concentrated in accommodation and catering services—activities traditionally characterized by a high labor share. Changes in production processes within these sectors may therefore be significantly affecting the income-generating capacity associated with pilgrim tourism. The publication of future Supply and Use Tables will allow this hypothesis to be further tested.

## 5. CONCLUSIONS

This paper emphasizes the need to improve the estimation of tourism's economic impact through the detailed identification of spending patterns across different tourist segments and their incorporation into highly disaggregated analytical models. To this end, an innovative methodological framework based on input–output analysis using rectangular Supply and Use Tables has been proposed.

Explicit consideration of tourist heterogeneity is essential, as different consumption behaviours generate differentiated economic effects whose accurate measurement is critical for public policy design, territorial planning, and the efficient management of tourism resources. The proposed approach represents an advance over traditional methods by avoiding symmetrical matrices, which often involve high levels of aggregation and analytical limitations, such as the inability to distinguish between accommodation and catering activities.

A second major contribution of this study is the rigorous incorporation of induced effects. The flow matrix is expanded by including wages as income and household consumption as demand, applying criteria that prevent the overestimation of impacts. Only wage income and domestic consumption by resident households are considered, excluding other components of gross value added and non-resident household demand.

The empirical application to the Galician economy, with particular emphasis on the Camino de Santiago, yields several relevant conclusions. First, it confirms the importance of distinguishing between tourist types, as economic multipliers differ substantially. In Galicia, pilgrims exhibit a high economic impact per unit of expenditure, despite their lower average daily spending. Second, the product-level disaggregation reveals significant differences between accommodation and catering services and their evolution over time. Finally, the results highlight how changes in income distribution, increased automation, and the expansion of digital platforms can significantly influence the induced impacts of tourism.