



*Research article*

## **Evaluating public expenditures on tourism: the utility of the Italian public accounting reforms**

**Fabrizio Antolini\***

University of Teramo, CAMPUS Universitario “A. Saliceti”, Contrada, Coste Sant’Agostino, Via Renato Balzarini, 1, 64100 Teramo, Italy

\* **Correspondence:** Email: [fantolini@unite.it](mailto:fantolini@unite.it).

**Abstract:** The accounting reforms of the state, regional and local budgets that began in 2009 and finished in 2016 have improved the quality of public accounting data. Mainly, these reforms were completed for the adoption of the functional classification of expenditures in the administrative balances of all Public Administration (PA) entities. This process is the same one that is utilized in government financial statistics for the Macroeconomic Imbalance Procedure (MIP), even if some differences remain. However, to evaluate the effectiveness of political actions it is necessary, first of all, to have a reference scheme, identifying a recognized set of Key Performance Indicators (KPIs). Public expenditure after the public accounting reform, is linked to the policies undertaken and this is particularly useful to assess it. As far as tourism is concerned, in order to have an adequate measure of the resources managed in tourism field, it is necessary to consider as public domain the Enlarged Public Sector (EPS), including also public enterprise. Using arrivals and nights spent as KPIs in a panel econometric model, this research examines the net change over time. In the model, the explicative variables are “public tourism expenditures” and “environment, transport and mobility expenditures” considering the EPS sector as referred domains in the period 2000–2017.

**Keywords:** national account; Italian accounting reform; public tourism expenditures; evaluation; panel econometric model

**JEL Codes:** H10, H50, H61, H72, M38, M41, P24, P41

---

## 1. Introduction

It is common for people around the world to think poorly of the effectiveness of their country's public policies. This is often due to the lack of a model and a system of impact indicators that can be used to empirically evaluate policy performance. Program evaluation inevitably takes on two temporal dimensions: one before the implementation of the policies (the ex-ante evaluation), and the other after their implementation (ex-post evaluation).

First, it is necessary to evaluate public policies using statistical data that can represent the link between financial resources and the public policies that are undertaken. The accounting reforms made in Italy—first at the central state level, then for the regions and local authorities—have favored transparency in the use of financial resources. When analyzing tourism as a sector, the importance of statistical data is always stressed. The production of tourism statistics, governed by EU Regulation 692/2011, concerns only the private sector, while not referring to the public sector. The assessment of the impact of tourism on the economy should go hand in hand with the evaluation of public policies on tourism, and both approaches must be consistent and reliable to provide accurate data. Tourism is a cross-cutting phenomenon whose impact on the overall economy can be measured by direct and indirect effects. The same applies to public policies; some are implemented in other sectors—for example, in transportation—but they have an indirect effect on tourism (Antolini et al., 2017). The necessity of having a reference model for public policy evaluation, such as the one proposed in this paper, indicates how useful the Italian public accounting reforms have been.

In order to assess public policies, it is important to be able to make transparent their aims and actions. However, both of these requirements have become the objectives around which to build the public accounting reforms implemented by the state, regional and local authorities. The most important element has been the introduction of the Classification of Function of Government (COFOG) in administrative budgets. In this way, the financial resources have been linked to public policies. When COFOG (United Nations, 1999) was applied to the statistical government institutional sector (S13 is the classification code in national sectoral account), it was too generic to evaluate public expenditures related to tourism. In the period 2009–2016, the budgets of the state, regional and local authorities changed their structure, introducing “missions” and “programs,” where missions coincided with the “classes” in the COFOG classification. Subsequently, “actions” were introduced in the administrative balance, enabling an assessment of the financial resources and the related policies that were implemented in the field of tourism. It is also important to bear in mind the peculiarities of the Italian public *tourism* sector, in which there are many public enterprises that manage financial resources. Thus, the traditional public sector, as defined by the law or by the statistical criteria used in national accounts, does not seem to be appropriate for the analysis.

It is therefore necessary to also include in this sector (Public Sector), public enterprises because they manage—both at the national and local government levels—marketing and tourism promotion activities (Enlarged Public Sector). Once the financial resources allocated to tourism are known, those who manage them and the actions that are taken can follow the evaluation program proposed in this paper using some Key Performance Indicators (KPIs). The KPIs used, number of arrivals and nights spent, will enable an estimation of the effectiveness of Italian public expenditures on tourism. Furthermore, using an econometric panel model allows us to determine whether the financial resources,

as accounted in the public balances of the Italian regions, have produced an increase in tourist arrivals and nights spent.

This paper is organized as follows. The first section includes an overview of tourism sectors, highlighting the importance of public sector data in evaluating public policies.

Accounting data are useful for this purpose only if they have been identified by one or more KPIs.

In the second section, the importance of functional classification for public policy analysis is highlighted. Before the reform of the balance of the State, this classification has been used only by national accounts. After the public accounting reform of 2009, the functional classification was adopted by the State Budget Acts, while after 2016, also by regions and local authority. This is why a comparative analysis between several countries about tourism public expenditure is carried out, using national account data, at this step of the paper, because of their major homogeneity in respect of administrative data.

The third section clarifies the importance of defining the domain of public administration to represent the particularities of the Italian tourism sector. In fact, different rules can modify the size of public administration and consequently the measure of public administration and public expenditure. In addition, the peculiarity of the Italian public tourism sector, suggests considering the Enlarged Public Sector (EPS) as reference domain.

In the fourth section, a descriptive analysis of public expenditure on tourism in EPS sector, together with the arrivals and tourist stays in the Italian regions will be carried out.

In the final section, using an econometric panel model and considering the number of arrivals and nights spent as KPIs, this paper estimates the effectiveness of tourism public expenditures in the Italian regions.

## **2. The complexity of evaluation in the tourism field: models, data and institutional organization**

To understand the structure and importance of tourism within an economic system, it is necessary first to offer a definition of tourism, and this is not an easy task. Tourism is not a sector, by itself, but is diffused across most economic and social fields. Although researchers have an exact definition and classification for tourism (RE 692/2011) and tourist when examining the private sector, the same is not true for classifying data from the public sector.

However, to have a measure of the whole tourism sector, it is necessary to consider both private and public sector.

As pointed out by Eurostat (2014), tourism in the private sector considers the number of visitors, not the number of tourists, as a measure of its size. Tourism is defined as the results of the activities of visitors who travel to a main destination outside their usual environment for less than a year. The “usual environment” in the tourism surveys is differently defined in each country. Moreover, three aspects have to be considered in order to identify the usual environment: the purpose of the visit and of the trip, which must not be part of the regular life routines of the traveler; the crossing of administrative borders (i.e., going outside the municipality or other administrative area); and a limitation of the duration of the visit and its frequency. These criteria are provided in the metadata published on the Eurostat website, but their application among countries remains quite different (Antolini and Grassini, 2019). Therefore, in order to obtain a correct evaluation of the sector by making

a reasonable comparative analysis, homogeneous statistical information is required; this means that a homogeneous business register, homogeneous key indicators and the definitions and “domains” must be considered (Pollak, 1995; Knicker, 2011; Birkland, 2019). Moreover, in evaluating the impact or contribution of tourism on the overall economy, regardless of the methodology utilized (Computable General Equilibrium (CGE) models or Tourism Satellite Accounts (TSAs) (Dwyer et al., 2007), it is necessary to count the number of visitors as well as their level of private expenses during the trip.

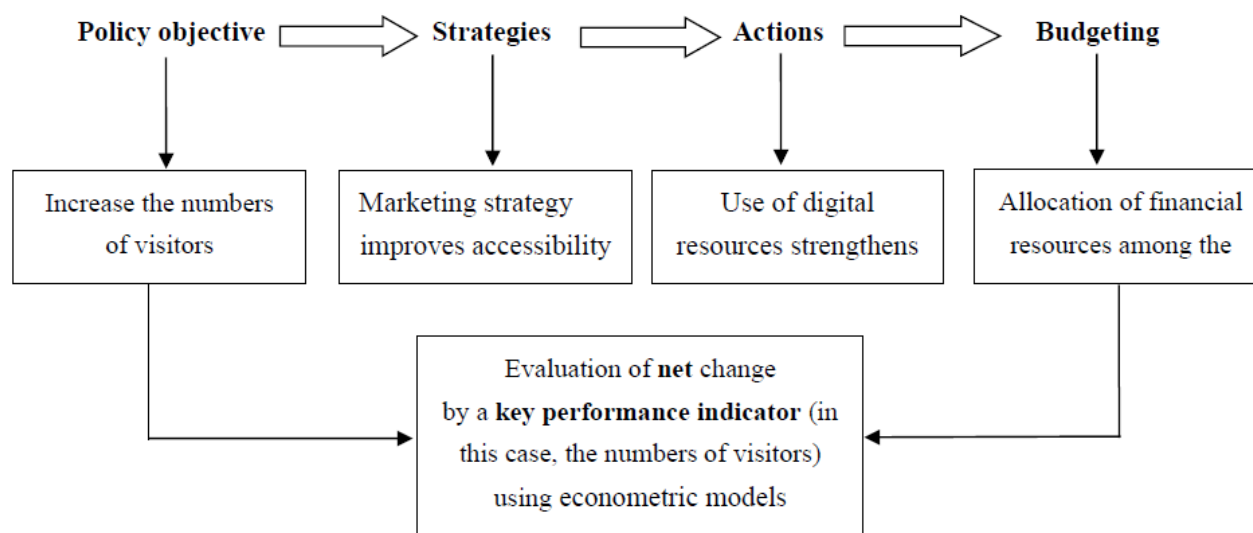
Moreover, to obtain an internationally comparable definition of the tourism sector, it is necessary to organize the data for the public sector as systematically and consistently as possible while taking into consideration many institutional factors (Chan, 2010; Birkland, 2019).

However, an international recognized definition of “public sector” has not yet been provided and therefore it makes more difficult to have a financial representation of the policies, measuring the “quality” or “productivity” of public expenditure (Scriven, 1991; Oxman et al., 2010). In this regard, trends in accounting data, obtained from the administrative balances of the central and local public authorities, can be seen as a consequence of the necessity to evaluate the policies financed by the public administration.

Statistical data, in particular national accounts data did not allow this type of analysis.

In fact, the financial flows for policies, for many years, has not been adequately represented by national accounts, especially for regions and local authorities.

Figure 1 shows the evaluation scheme process proposed for measuring the impact of policies, where administrative accounting data can play a very important role.



**Figure 1.** Evaluation process scheme. Source: Made by the Author.

In order to understand the evaluation process described above, it is important to find one or more KPIs and evaluate their net change, before (ex-ante evaluation) and after (ex-post evaluation) the “actions” taken (Storey, 2004).

As shown later, the Italian reforms of accounting systems have simplified the evaluation of policies (Gerrard et al., 2001; OECD, 2014; Howlett, 2019); this is illustrated in the first row of Figure 1, which

reflects the new accounting structure put in place after the Italian reforms. The only difference, as shown in the next paragraph, is the inversion of “actions” with respect to budgeting activities.

The comparative perspective, or a cross-sectional analysis, is frequently used to identify the best policies, and the homogeneity of the data is an important precondition, even if it is not the only one necessary (Tran et al., 2020). However, this exercise of policies of best practices is more difficult to accomplish for the public sector for two main reasons. First, no EU regulation exists for the production of this type of administrative data, and their homogeneity is not guaranteed. Second, there are many institutional aspects that make governance very different between countries (Barnes et al., 2003; Haynes, 2008). This is particularly evident in Italy, where the financial resources for tourism development are managed by each level of government, often without coordination (Leruth and Paul, 2006). Thus, to compare the effectiveness of public expenditures among countries, it is necessary to consider the role that the central and local administrations have in the tourism field (Key, 1940). The national law, 135/2001, has sanctioned the exclusive role of regions in the field of tourism policies. This institutional organization seems coherent if politicians want to enhance the territorial units to promote economic growth from a local development perspective. Tourism, in fact, is characterized not only for the economic activities related to it, but also for the whole landscape of the locations. Local communities and politicians should be better able to encourage tourism, and a policy that places control close to the territories should be more effective at this.

The problem is that many policies that have an indirect influence on tourism, such as those dealing with transportation and other infrastructure, are managed directly by the central administration. In all countries with multilevel governance, policy coordination across levels is an issue (Innes and Booher, 2018). In Italy, there have been many institutional changes (e.g., National Committee, Ministry of Tourism, Tourism Department) and public policy reforms over the years, particularly in the tourism field, but the lack of a consolidated scheme to plan and evaluate progress (Barnes et al., 2003; Haynes, 2008) has made coordination more complicated.

### **3. Public spending after the public accounting reform: the partial convergence with national accounts data**

#### *3.1. Balance of the state and national accounts data*

For many years, Italy has been characterized from a divergence between the national accounts data and those considered in the Balance of the State. The latter is the administrative document by which the Parliament approves the expenditures and revenues that will be completed by the state in the following three years. However, the state budget is only a *part* of the public sector, since the public administration also includes the expenditures and the revenues of the regional and local authorities and other public welfare institutions (Chuaire et al., 2017).

As regards the most important innovation, the COFOG classification—until the public accounting reform was only in national accounts (D.lgs 196/2009)—it was the only instruments available to measure the effects of policies. Instead in the analysis of public spending, it is useful to have a measure of the policies adopted for considering the socio-economic targets that policy makers aim to reach (Devarajan et al., 1996). It must be considered that at the beginning the reform of public accounting scheme was not

extended to the regions and local authorities. Therefore, it was valid for the state, but not for the public administration as a whole. At this stage, the reform was not yet useful to measure Italy's public tourism spending because the regions have exclusive competence in this field.

The fact that in Italy, until the 2009 reform of Balance of the State (Law 196/200), the COFOG classification was not utilized in the administrative balances, means that financial resources allocated to policies and decided by Parliament on the basis of the Budget Act cannot be evaluated in their socio-economic target, making it more difficult to assess the effectiveness of public policies. Although the first introduction of the functional classification took place in Italy with the 2007 Budget Law—which introduced the “missions” and “programs”—it did not match the statistical COFOG nomenclature.

It was only after the 2009 reform that the “missions” were redefined to strengthen the link between the financial resources allocated (i.e. public spending on tourism) and the objectives set by the policy objectives. After the 2009 reform, the COFOG classification at “class” level has officially become the reference for the state budget, and the “missions” (sometimes the programs) have become coincident with the “classes”.

Table 1 clarifies all the administrative steps in the national balance of the State, and how they can be applied to measure public expenditure in tourism sector.

**Table 1.** Knowing tourism policy in the balance of the state.

<b>Ministry of Cultural Heritage and Tourism</b>			
Mission	Programmer	Center of Administrative Responsibility	Action
031 Tourism	001 Development and competitiveness of Tourism	16 Directorate General of Tourism	0002 Promotion and planning and coordination of national tourism policies 0003 Development and promotion of tourism 0004 Promotion of the national tourism supply

Source: Made by the Author.

After the mission (see Table 1) we find the programmer, the administrative center of responsibility and, finally, the actions. Furthermore, this scheme supports and satisfies the evaluation scheme proposed in Figure 1.

Empirical evidence of the budget resources allocated in tourism sector, using the new schedule of the administrative Balance of the State is shown in Figure 1, where both current and capital expenditures are provided. It should be noted that the “action” considered is the only one denominated “Development and competitiveness of Tourism” (Table 2), managed mainly by the Ministry of Cultural Heritage. It must be considered that this first reform was not applied to the regions and local authorities' expenditures (see par.2.3)

**Table 2.** Financial resources for tourism in the Italian Balance of the State (millions of Euro).

Programmer	Titles	Budgets settled			
		2018	2019	2020	2021
Development and competitiveness of Tourism	C	43.3	44.13	44.13	44.12
	K	0.19	0.2	0.19	0.19
Total		43.62	44.3	44.3	44.3

Note: C = Current Accounts; K = Capital Accounts. Source: Balance of the State.

Furthermore, these financial resources are provisional expenditures for the subsequent three years. Until that time, the assessment of public expenditure could only be made by using statistical data, in particular national accounts data.

One of the differences between S13 and the balance of the state, regions and local authorities after the reforms is the criterion used for the registration of the revenues and expenditures. All the operators in S13 apply the “accrual basis” (Dabbicco, 2015; De Jesus and Jorge, 2011). This means that the transactions between institutional units must be recorded when claims and obligations arise, are transformed or are canceled. The same occurs for the transactions internal to one institutional unit that are recorded when economic value is created, transformed or extinguished (SNA, 2008). The administrative balances of the public administration (state, regions and municipalities) record instead the flows when they are paid (cash-flow criterion). The reconciliation from one to the other can produce significant differences in the amounts of the resources considered (Peter Van Der Hoek, 2005).

### 3.2. *Measuring public tourism expenditure in national accounts*

The COFOG classification is very useful in the evaluation of public policies. The steps reported in Table 3, are important because after the reform, this nomenclature has also been introduced in the administrative structure of the budget.

The “divisions” (Code 1) identify the primary aims pursued by the administrations; the “groups” (Code 2) the intervention areas for the public policies; and the “classes” (Code 3) identify the single targets, in compliance with the intervention areas that are structured. There is a coincidence between the class in Table 3 and the mission in Table 1; in some cases, this coincidence also includes the programmers.

Keep in mind that while the structure of the Balance of the State, is an administrative document that changes in each country, the statistical classification used by National Accounts is homogeneous for all countries and it is the only system that allows us to make comparative analyses of the expenditures but not of the policies.

**Table 3.** COFOG classification applied to the tourism sector.

Code I	Functions	Code II	Sectors	Code III	Class	Description
04	Economic Affairs	04.7	Others Sectors	04.7.3	Tourism	Administration of activities and services related to tourism; promotion and development of tourism; links with the transport, hotel and tourism sector; catering and other sectors related to tourism; operation of the tourist offices in the national territory and abroad, etc.; organization of advertising campaigns, including the production and dissemination of material advertising and similar; compilation and publication of tourism statistics.

Source: United Nations (1999).

The reform of the State budget, as formulated in Italy, allows a more homogeneity between the financial resources allocated by Parliament and those produced by Eurostat to determine the size of public expenditure. In addition, in recent years the European Union's Statistical Office (Eurostat) has disseminated national accounts data, down to class level, allowing a more analytical measurement of public expenditure and of the sectoral policies, for example in tourism field.

Because the economic crisis affected the countries of Europe in different ways, both at the beginning and throughout the duration, tourism expenditures are analyzed as actual values of total public expenditures, rather than in percentage of GDP (Devarajan et al., 1996).

The analysis is conducted by taking as a reference some of the European countries with higher levels of tourism (Table 4).

**Table 4.** Public Tourism expenditure in national accounts (percentage of total expenditure).

Countries	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EU16	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Germany	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Ireland	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4
Greece	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Spain	0.9	0.7	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.4
France	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.8
Croatia	0.6	0.8	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
Italy	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2

Sources: Eurostat database.

As shown, in 2018, Italy and Greece are the countries with the lowest level of expenditure in the tourism sector. Although Italy has only recently decreased funding, it was previously similar to Germany.



### 3.3. *The completion of the reform for regional and local authorities and the convergence with national accounts data*

Since 2009, the reforms that have taken place have reduced (but not eliminated) the divergence between the administrative and statistical accounts systems. Only after 2015—the year the reform was completed by the D.lgs 118/2011 as integrated by D.lgs 126/2014—was it possible to extend the harmonization of public balances to the regional and local authorities.

The main innovations introduced by all these legislative measures should be stressed. The first one is the adoption of uniform accounting rules and a common integrated schedule of accounts to allow consolidation and monitoring during forecasting, management and reporting activities. The schedule of accounts was functional to the introduction of a “dual accounting system” that permits the local and regional authorities and their instrumental bodies that adopt a financial accounting system (cash-flow budgeting) to record in the economic and equity accounting (Van Der Hoek, 2005) revenue and expenditure items simultaneously (accrual budgeting). This was done in order to better match these flows with the accounting rules adopted at the European level for the MIP procedure based on the economic accounting system (Dabbicco, 2015). The government financial statistics of EU countries (Dasí et al., 2016) consider the public administration sector (S13) in order to evaluate the sustainability of national public budgets for each EU country. The macroeconomic indicators used for this evaluation—i.e., the ratio of the deficit and the debt, in percentage of GDP—are calculated by national accounts aggregates of S13 economic accounts. This mechanism, known as the Macroeconomic Imbalance Procedure (MIP), aims to identify potential macroeconomic risks due to macroeconomic imbalances and allows legislators to design policies to correct them (Monteiro and Gomes, 2013; Dasí et al., 2016).

The second innovation was the adoption, also for the local public administration, of common budget schemes for expenditure in “missions” and “programs” and “macro-aggregates” consistent with the economic and functional classification and with what already happens for the State budget, according to the rules of the national account. The third innovation was the definition of a system of result indicators (the KPIs shown in Figure 1) associated with budget programs and built according to common methodologies, to be defined based on the first results of these new accounting rules. Finally, the fourth innovation was the introduction of rules for the instrumental bodies of local authorities in civil accounting, which consist of the preparation of an economic budget and the obligation to reclassify their receipts and payments into “missions” and “programs” in order to allow the preparation of the consolidated cash accounts of local governments (for details on this analysis, see section 3.2).

The planned harmonized budget scheme changes the budget structure of revenue and expenditure. As far as revenues are concerned, they have been divided into (1) “titles”, for which it is useful to describe their origin and which define their nature within the source of origin, and (2) “categories”, which instead detail their object within the category to which they belong.

Before the reform (DPCM, 14 October 2016) the expenditures reported in the administrative budgets of the regional and local authorities were classified in *missions*, which represent the main functions; *programs*, which are homogeneous aggregates of the activities carried out; *titles*, which clarify the nature of the expenditures (macro-aggregates, which represent the additional units of expenditures); and *chapters*, which are the elementary units of the second level. This structure was implemented in 2016, introducing the “actions” in order to better articulate the programs, specifying

how each achieves the finality of the expenditure. By the introduction of the actions, all the bodies of the public administration are included in the conditions, using accounting data to measure the impact of policies following the steps in Figure 1. As regards the tourism sector, looking at the missions of the administrative balances—especially for the regions, since they have exclusive competence in the tourism field—the financial resources can be identified. In the harmonized administrative regional and local authorities' balances, the financial resources are present in the mission code 07, followed by two different programs that are, respectively, the “development and enhancement of tourism” and the “unitary regional policy for tourism.” These items implement that included in the State budget.

#### **4. Italian public tourism expenditure: from public administration in administrative and statistical classification, to Enlarged Public Sector**

##### *4.1. Measuring public administration in different “public” domains*

In the Italian system, the public administration can be defined following the administrative regulation (law 165/2001) or the national accounts rules.

In contrast with the Public Administration (S13) as defined in National accounts (ESA, 1996; ESA, 2010), the “administrative” public sectors (Law 165/2001) is the only reference for wage bargaining for public employees. Within these two domains (national accounts and administrative public sector) it is possible to change the criterion applied for the registration of revenues and expenditures, as well as the one used to consider the single unit portion of public administration (Chuaire et al., 2017). Adjusting these criteria can change the measures of the size of public administration. In national accounts, to define the S13 sector, the institutional units must be satisfied by the criterion of the “economic significance of the price” (SNA, 2008). This means that it must be able to influence supply and demand behavior (Mahadi et al., 2017). In contrast, the administrative public sector, which uses only a legal criterion, indicates when the property of the institutional units is public. This distinction is important for selecting the data utilized to measure regional public tourism expenditures (see Table 2); even for the Italian tourism sector, it is necessary to consider a broader version of public administration. Because the balance among the regions and the local authorities in Italy has been one of the causes of the national deficit and debt, the link between the administrative balances of local authorities (regions and municipalities) and the Balance of the State and their convergence to the S13 sector has become a strategic issue.

##### *4.2. Analyzing the enlarged public sectors and the size of tourism public sector*

Both PA domains represent only a part of tourism expenditures because, in Italy, the “public” tourism sector is characterized by some peculiarities or institutional aspects (Chan, 2010). Many financial resources for tourism purposes are managed by public enterprises that are linked with the central and local authority without being considered part of the public sector (Setiyawati et al., 2018). To analyze their financial behavior using the total amount of tourism public expenditures it is necessary to take, as a frame of reference, the Enlarged Public Sector (EPS).

At first, the creation of the EPS in Italy is related to the application of the additional criteria concerning the payments coming from the Structural Funds. The Territorial Public Accounts (TPA) is the database that allows for evaluating the tourism public expenditures of the institutions included in the EPS. Moreover, the public sector included in the TPA can be compared to the public administrations (PA) of the national accounting (S.13 Esa95 par.2.68 and 2.69). Whereas the EPS was introduced by the law, n. 468/1978, which reformed the public accountancy, it was abrogated by the law, 196/2009. In order to include an enterprise within the EPS, the business needs to be subject to “public control” and matched by power and benefit conditions; this means that managers are designated by the public authorities or that companies are subject to certain forms of control (e.g. golden rule). The application of these criteria to local companies (or to any other similar juridical body) has been permitted to be included within the EPS 2.200 units.

However, in regard to the specific case of the tourism sector, the EPS does not fully correspond with the institutional - economic scenario. In some Italian regions, the units within the TPA cover 85% of the total (Cuccu and De Luca, 2006). The EPS includes, more or less, the units of the public sector of S13 (government national accounts), together with the public national and local enterprises that are controlled by different government levels (see Table 5).

**Table 5.** PA and EPS public domains. Source: Made by Author.

Situation Outlined by Local Public Accounts (CTP)		
	Public Administration (PA) Institutional Subsectors	Enlarged Public Sector (EPS)
Central Level	State Welfare Institutions ANAS (state agency for public routes) Other Central Admin. Institutions	Central level + National Public Enterprises
Regional Level	Regional Administration ASL (Local Healthcare Authorities), Hospital Centers, and IRCCS (Medical Research Centers) Regional Institutions dependent on a Public Authority	Regional Consortia and Associations Regional Companies and Institutions Regional Organizations and Foundations
Sub regional Level	Sub regional Institutions dependent on a Public Authority Towns Provinces and Metropolitan Cities Universities Chambers of Commerce Mountain Communities and various Unions	Sub regional Level + Public Enterprise Port Authorities and Port Institutions Sub regional Consortia and Associations Sub regional Companies and Institutions Sub regional Organizations and Foundations

As far as the number of institutions in these two domains, the difference between S13 and EPS is reported in Table 6 (Giungato and Tancredi, 2019). Some institutions (in the number of 5.088) are included in the EPS sector, but not in the national accounts domain (S13). On the other hand, there are

some institutions that are in the public sector as defined in national accounts, but not in the EPS sector. Therefore, is very important to integrate the two information sources in order to have a complete measure of public institutions operating in tourism and, more analytically, of their tourism public expenditure.

**Table 6.** Institutions in S13 and EPS.

Public Domain	Number of institutions
EPS and S13	10.682
EPS YES - No S13	5.088
EPS NO - Yes S13	1.169

Sources: Territorial Public Accounts, methodological notes.

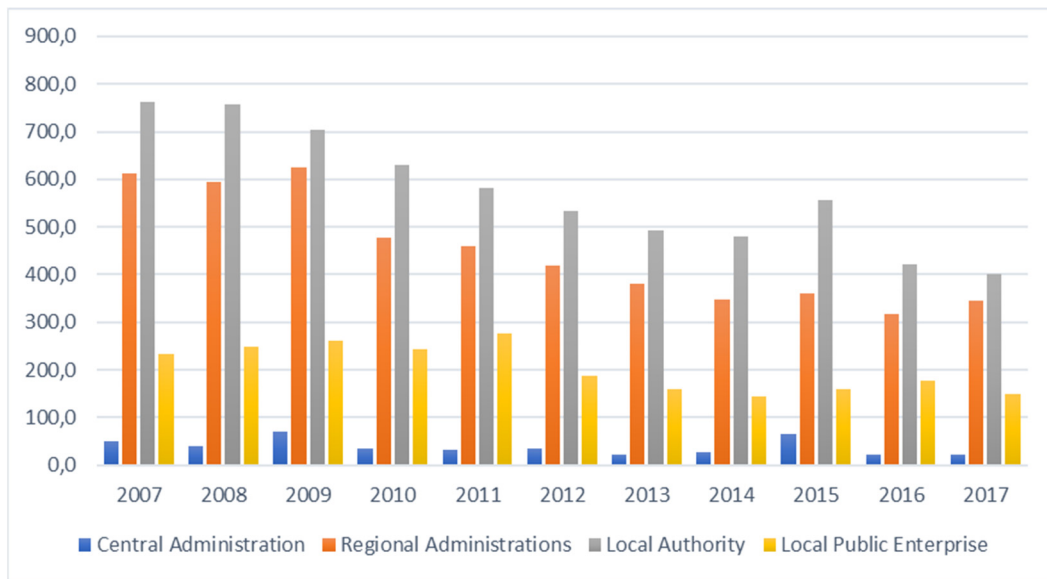
Another aspect that can produce differences between these two domains is the criterion used in recording income and expenditure. As far as the institutions included in the EPS are concerned, they use the cash principle, while those included in the national accounts follow the accrual principle.

## 5. An evaluation of the effectiveness of tourism public expenditures in Italian regions

### 5.1. The trend of tourism expenditures over the years

Using a different definition of audience domain, the evaluation of public expenditure may change. Our analysis considers the EPS as our reference for the public domain in order to analyze also the public funding managed by public enterprises. These operators work with the regions and municipalities using public resources to promote activities in the tourism sector and play a very important role. The data processed by the EPS are taken from the final balance sheets according to the recording criteria used by the financial accounts, that is, the “cash flow” criterion.

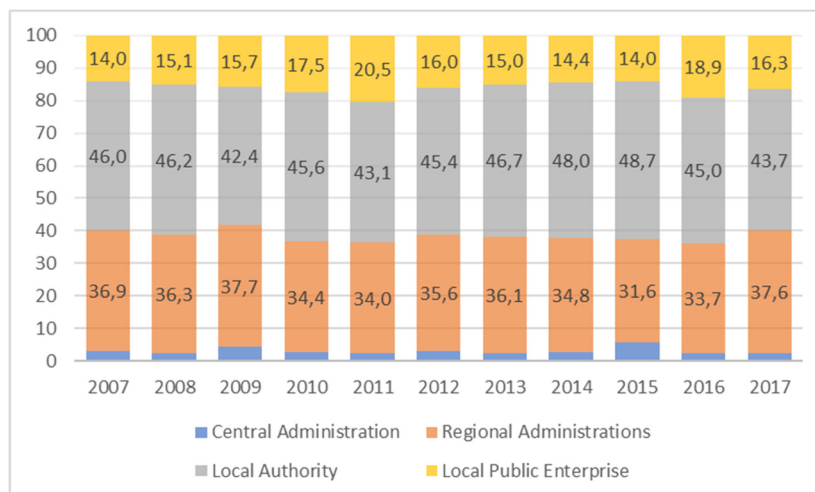
Figure 2 shows the trend of tourism public expenditures for each level of government. Since the financial crisis, there has been a decreasing trend for overall tourism expenditures (−5.7% on average, per year): the central administration has reduced its level of expenditures by 7.8%; the regions reduced by 5.6%; the local authority declined by 6.2%, and public enterprise reduced by 4.2%.



**Figure 2.** Level of government and tourism public expenditures (2007–2017). (millions of Euro). Sources: Author’s processing of TPA data.

In contrast, Figure 3 shows that the composition of the expenditures in its amount is, more and less, the same in the period 2007–2017. It is evident that there are many actors who manage financial resources for tourism purposes, showing, once again, how important it is to have good coordination of actions between different levels of government.

The search for a model to improve their coordination becomes, perhaps, one of the most critical and urgent issues to be addressed.



**Figure 3.** Level of government and tourism public expenditures (2007–2017). (Percentage of total expenditures). Sources: Author’s processing of TPA data.

Looking at the compositions of the expenditures managed by the different operators, local authorities have seen their quota reduced by 2.3%, while the same quota has been rising for local public enterprise; regions and the central administration have kept approximately the same quota compared to 2007. Obviously, there are other expenditures that can have an indirect effect on the tourism sector,

such as expenditures on infrastructure or for the preservation of the environment. Therefore, measuring effectiveness or the productivity of tourism public expenditures (Aschauer, 1989) in the tourism field is still more complex than for other sectors.

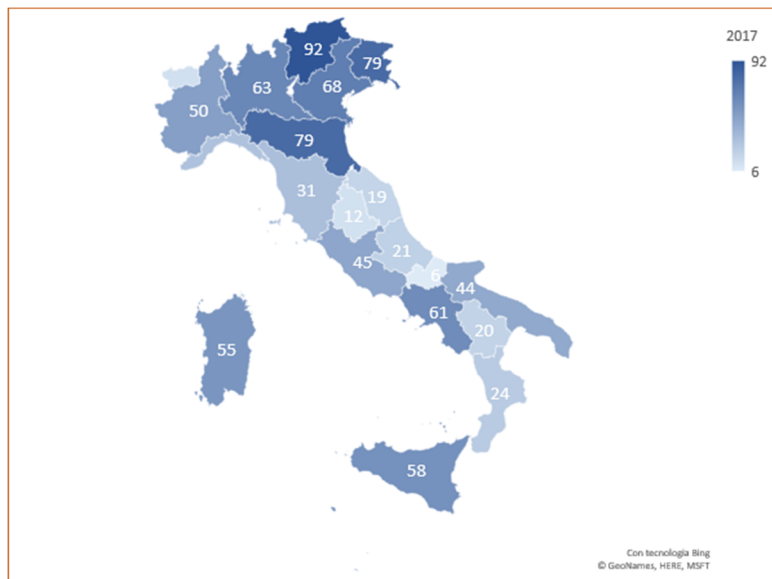
It is necessary to coordinate these different levels of government, bearing in mind that each has competencies that can be important for the development of tourism. In Italy, now, there is only the State-Regions Conference (CPQR, 2016), but it is not enough to put in place a strong model of governance (Birkland, 2019). There is a need for an institution with the power to coordinate all policies that influence the tourism sector. One of the most important examples of this is the transportation sector, which is key to improving mobility and increasing travel to the territories. The job of handling infrastructure (e.g., roads, airports, railways, ports) belongs to the central administration and to the regions (which have exclusive responsibility over tourism), and they can only point out opportunities to build or upgrade infrastructure. However, the regions also have competence over an important part of local transport. In the tourism sector, the concept of economic interdependence (Cooper, 1985) is strategic both for different levels of government (central, regional and local administrations) and among different operators at the same level of government, as in the case of the regions (Pollack, 1995). An example of a failure of coordination is the construction of lightweight infrastructure (the Adriatic cycle route) for sustainable mobility that crosses many regions on the Adriatic Sea. The construction of the bikeways completed so far is different both in their design and in their completion status.

## 5.2. *Tourism public expenditures in Italian regions*

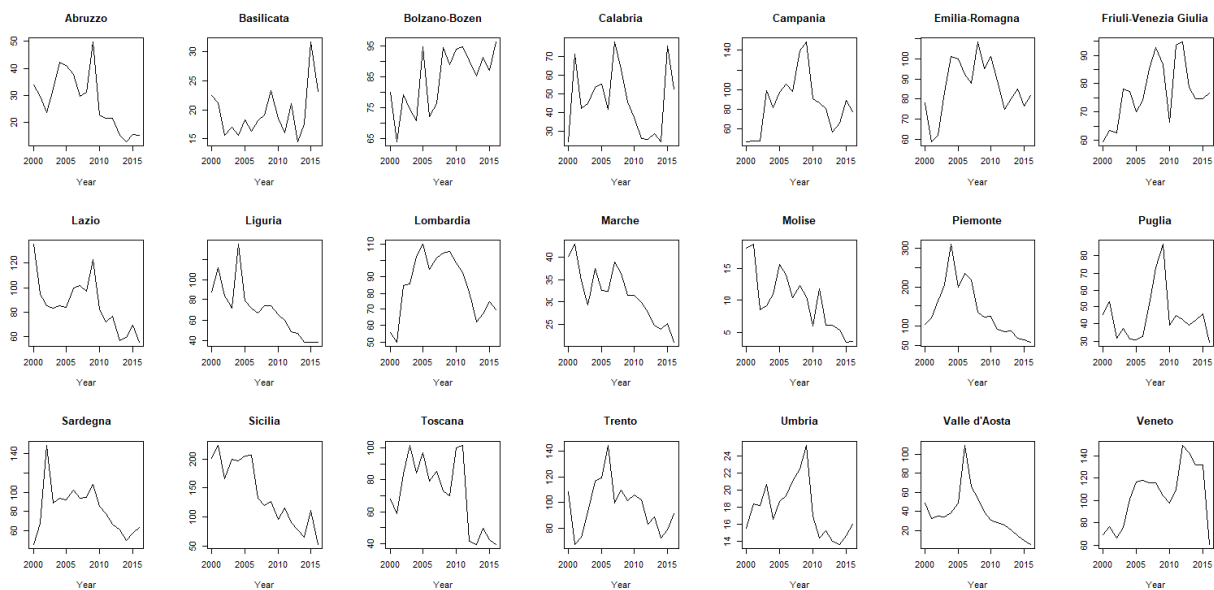
Considering only the public tourism expenditures of the Italian regions in the year 2017 (see Figure 4), it is evident that the level of tourism public expenditure (expressed in millions of euro) in the south of Italy is quite lower, except for the Campania region, compared to the central and northern regions. Moreover, Campania is the region where the Tourism Public expenditure amount to 61 millions of euro, is the region with the highest value.

Figures 5a and 5b are interesting. These figures allow us to analyze the space-time dimension of arrivals and nights spent at the regional level, comparing them with public spending on tourism in the period 2000–2017. The first Figure 5a, shows that, since 2013, only the regions of Friuli Venezia Giulia and Basilicata and the Province of Bolzano have registered an increasing trend in public spending for tourism. In the case of Basilicata, the aim of having Matera recognised as a cultural capital has led the local administration to increase the financial resources allocated to tourism, particularly for territorial marketing.

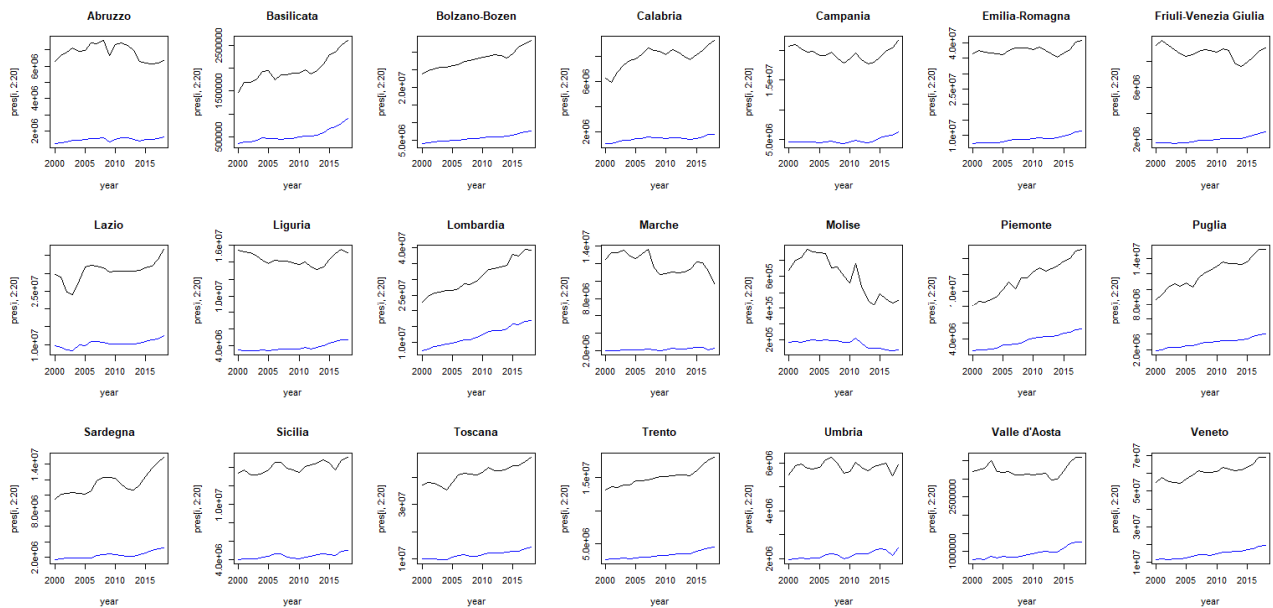
For the other regions, the variability of public expenditure trends—with peaks in different years, indicating that the changes are not attributable to the economic crisis—seems to decrease over time.



**Figure 4.** Public expenditures in Italian regions (2017 - millions of euro). Source: Author’s analysis on TPA data.



**Figure 5a.** Tourism public Expenditures in Italian Regions and Provinces. Sources: Author’s Analysis of EPS data.



**Figure 5b.** Arrivals (down line) and nights-spent (upper line) in Italian Regions and Provinces. Sources: Author's analysis of TSA and Istat data.

It can also be observed (Figure 5b) that the nights-spent and the arrivals have the same growing trend in all territories considered, except for Lombardy, Liguria and Marche.

Moreover, nights spent are in many regions a multiple of arrivals. Only a few regions have recorded a different trend between arrivals and nights spent. These include Abruzzo, which has recorded a decrease in nights spent since 2013; Friuli Venezia Giulia, albeit for a limited period (2013–2015); and Marche, starting in 2015. The case of Tuscany is very interesting and has been highlighted. The graph of public spending on tourism in this region, shows that over the years public spending on tourism has steadily decreased while arrivals and presences have increased. This situation shows that the effectiveness of spending is not only due to its amount, but rather to the way in which it is used. In Tuscany, tourism spending has identified the development of inland areas as a priority strategy. This has stimulated agritourisms to enhance the services they offer, allowing these areas to become a tourist attraction (Antolini and Truglia, 2019).

The other example of land development is undoubtedly Umbria, where in recent years there has been a gradual increase in the attention paid to the Valnerina valley as a place to experiment slow tourism. Although our analysis stops at 2017 (the last year in which data is available), it is worth pointing out that in 2020 the region decided to strengthen transport lines, for example by providing twice-weekly flights between Palermo and Perugia. In addition, the region was awarded as the best destination for its gastronomic offer. All this was done with the Marmore Falls as the main attraction.

In Italy in 2018, the ratio between the nights spent and the arrivals—the average nights spent—is equal to 3.3 nights (INs 2020).



## 6. The econometric specification: the effectiveness of public tourism expenditures

### 6.1. The choice of the model

The space-time dimension in econometric models is maintained only in a panel regression. However, many studies, especially in impact assessment, use pooled regressions (Zeynep, 2000; Clements et al., 2007). In doing so, however, the space-time dimension is lost when it should be maintained. Pooled regression is a method that does not consider data in their cross-sectional dimensions and time series (Gujarati and Porter, 2009; Baltagi, 2008), and its main problem is that the heterogeneity of individuals can be underestimated.

In contrast, an econometric panel model, in both the fixed and causal estimation, has the advantage of combining these two dimensions, providing more informative data, more variability, less collinearity, more degrees of freedom and more efficiency (Baltagi and Li, 1995; Wooldridge, 2001). Panel data are also better at measuring effects that cannot be observed in pure cross-sectional or time series regressions. The efficiency of the institutions, the dotation of human capital, the culture, and the different characterizations of the territories are examples of unobserved variables. Therefore, the pooled model, despite being used in the literature in the presence of heterogeneity of individuals, can produce distorted estimates of regression coefficients. The same can be found by using the Weighted Least Squares estimators (WLS) —using the weights based on per-unit error variance—instead of the Ordinary Least Squares (OLS) method, as in the pooled model.

### 6.2. The specification of the model: the framework theory

The theoretical framework for the model construction is based on the hypothesis that the public tourism policy can be defined *as effective if an increase in spending produces an increase in arrivals and nights spent*. As illustrated before, there are many other expenditures—the environment, transportation, and the mobility sector—that can influence tourism flows. The econometric estimation was done using official statistical data, although in the last period there have been experiments with the use of mobile phone data in measuring tourist flows (Grassini and Dugheri, 2021).

Our model considers separately the arrivals and the nights spent as the dependent variables, while the public tourism expenditures and those related to “environment, transport and mobility” are the independent variables (IV). Moreover, the model provides for the inclusion of some temporal lags (three years, in this case) of the independent variables to capture any delayed effects produced by it.

The Hausman test values ( $H = 23.8$ ) suggest that we should use fixed effects in the model. The original model, estimated as a panel regression, then became (model 1):

$$Y_{it} = \beta_1 X_{it} + \beta_2 X_{it-1} + \beta_3 X_{it-2} + \beta_4 X_{it-3} + \beta_1 X^*_{it} + \beta_2 X^*_{it-1} + \beta_3 X^*_{it-2} + \beta_4 X^*_{it-3} + \alpha_i + u_{it} \quad (1)$$

where:

$Y_{it}$  = arrivals or nights spent

$X_{it}$  = tourism public expenditures (temporal lag = 0, 1, 2, 3)

$X^*_{it}$  = environmental, transport and mobility public expenditures (temporal lag = 0, 1, 2,)

$\beta$  and  $\beta^*$  = are the coefficients for each IV

$\alpha_i$  ( $i = 1 \dots n$ ) is the unknown intercept for each entity ( $n$  entity-specific intercepts)

$u_{it}$  = the error term

$i$  = regions

$t$  = 2000–2017

However, the trends in Figure 5a and 5b show a negative relationship between the dependent and the independent variables in Model 1. Therefore, the coefficient should have a negative sign, and the magnitude of the coefficient of nights spent should be higher than that of arrivals.

### 6.3. Estimation of the model

The results from the estimated panel regressions are shown in Tables 7 and 8, and we report only the variables that are statistically significant.

**Table 7a.** Panel model fixed effects. Dependent variable: Arrivals.

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	4.74680e + 06	271185	17.50	<0.0001	***
Env_Trans_Mob	-397.569	89.1343	-4.460	<0.0001	***
Env_Trans_Mob_3	526.064	77.2276	6.812	<0.0001	***
Tourism_Exp	-5562.50	1720.90	-3.232	0.0014	***

**Table 7b.** Main values of descriptive statistics and related statistical tests.

	<i>Values</i>		<i>Values</i>
Mean dependent var	4708443	S.D. dependent var	4177433
Sum squared resid	1.23e + 14	S.E. of regression	675995.9
LSDV R-squared	0.975870	Within R-squared	0.226383
LSDV F (23, 270)	474.7472	P-value(F)	1.0e - 203
Log-likelihood	-4351.289	Akaike criterion	8750.578
Schwarz criterion	8838.983	Hannan-Quinn	8785.981

Joint test on named regressors

Test statistic:  $F(3, 270) = 26.3366$

with p-value =  $P(F(3, 270) > 26.3366) = 5.65779e-015$

Test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic:  $F(20, 270) = 212.748$

with p-value =  $P(F(20, 270) > 212.748) = 1.74674e-152$

**Table 8a.** Panel model fixed effects. Dependent variable: Nights Spent.

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	1.60199e+07	456436	35.10	<0.0001	***
Env_Trans_Mob_3	1081.02	158.659	6.814	<0.0001	***
Tourism Exp	-16315.3	3283.93	-4.968	<0.0001	***

**Table 8b.** Main values of descriptive statistics and related statistical tests.

	<i>Values</i>		<i>Values</i>
Mean dependent var	17777761	S.D. dependent var	14853048
Sum squared resid	5.35e + 14	S.E. of regression	1404767
LSDV R-squared	0.991727	Within R-squared	0.186356
LSDV F(22, 271)	1476.589	P-value(F)	5.5e-268
Log-likelihood	-4566.875	Akaike criterion	9179.751
Schwarz criterion	9264.473	Hannan-Quinn	9213.680

Joint test on named regressors

Test statistic:  $F(2, 271) = 31.0348$

with  $p\text{-value} = P(F(2, 271) > 31.0348) = 7.30893e - 013$

Test for differing group intercepts -

Null hypothesis: The groups have a common intercept

Test statistic:  $F(20, 271) = 968.699$

with  $p\text{-value} = P(F(20, 271) > 968.699) = 4.43088e - 239$

Some considerations must be addressed. While the exogenous variables are always statistically significant in both regressions, the “public expenditure on protection, transport and mobility” (Env\_Trans\_Mob) in the arrival regression of Table 7a retains its significance at the present time and in the lagged version (lag = 3), but in the latter case, the sign of the coefficient changes. In contrast, in the nights-spent regression (Table 8a), the “environment, transport and mobility” variable is statistically significant only in its lagged formulation, with a positive sign on the coefficient. The sign on the 3-year lagged variable never changes the sign of the relevant coefficient.

The coefficient for the variable “public tourism expenditures” (Tourism\_Exp) remains negative in both panel regressions, and the magnitude of the coefficients is always higher in the nights-spent regression compared to the arrivals. Furthermore, the ratio between the nights-spent coefficient estimated in Table 7 and the arrivals coefficient estimated in Table 8 is equal to 2.9. This result is theoretically consistent with the values of average nights spent (3.3) previously illustrated. Of course, 2.9 is the result of the ratio between the variations of nights-spent and arrivals, while 3.3 is the ratio between their absolute values or levels. Despite this difference, this comparison seems to be of some use to check the correct estimation of the regression coefficients of the panel, showing the estimation is consistent. In addition, the 2.9 value, once again confirms, as shown in Figures 5a, the nights spent are a multiple of arrivals.

Going further, the negative sign of the coefficient relating to “public expenditure on tourism” in both regressions can be easily explained. Public tourism expenditures mainly involve territorial marketing and promotion activities. These “actions”—to follow the same terminology that is used in

the administrative balances—are taken by the regions, often without any planning, and they are not directed toward specific market segments. In addition, in many cases, the marketing actions proposed remain in the territorial area. This is what happened for fairs and festivals that were organized to enhance local food and wine products.

The effects of these actions and expenditures on tourism flows normally have results in the same year that they are carried out. Therefore, the coefficients are significant at the same time as the dependent variable. The negative value of the coefficient is due to the decreasing trend in public spending over the years, while both the number of arrivals and nights spent have grown (see Figures 5a and 5b).

This is not the case for public expenditure “on environmental protection, transport and mobility” (Env\_Trans\_Mob); in the case of the nights-spent regression, shown in Table 8, produces effects only some years later. Nevertheless, the low Durbin Watson values (equal to 0.36 and 0.44, respectively) suggest that we should apply a different estimation for the model.

However, the presence of autocorrelation in the residuals does not cause the loss of consistency for the usual estimators, but it does produce the loss of validity of the standard errors and the related tests (Verbeek, 2006, 2012). One way to account for this is to use a robust correct estimator (Arellano, 1987, 2003; Bramati and Croux, 2007) to adjust for heteroscedasticity and autocorrelation (HAC).

Tables 9 and 10 report the coefficient and the related standard errors obtained using the complete version of model 1.

**Table 9a.** Fixed effects, HAC Estimator. Dependent variable: Arrivals. Robust (HAC) standard errors.

	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>	
Const	4.03737e + 06	679865	5.938	<0.0001	***
Tourism_Exp	-8601.41	3151.65	-2.729	0.0063	***
Env_Trans_Mob_3	474.261	300.654	1.577	0.1147	

**Table 9b.** Main values of descriptive statistics and related statistical tests.

	<i>Values</i>		<i>Values</i>
Mean dependent var	4708443	S.D. dependent var	4177433
Sum squared resid	1.32e + 14	S.E. of regression	699164.7
LSDV R-squared	0.974092	Within R-squared	0.169380
Log-likelihood	-4361.740	Akaike criterion	8769.480
Schwarz criterion	8854.202	Hannan-Quinn	8803.408

Joint test on named regressors

Test statistic:  $F(2, 20) = 3.7668$

with  $p\text{-value} = P(F(2, 20) > 3.7668) = 0.040895$

Robust test for differing group intercepts

Null hypothesis: The groups have a common intercept

Test statistic: Welch  $F(20, 99.2) = 92.0538$

with  $p\text{-value} = P(F(20, 99.2) > 92.0538) = 6.67507e - 055$

**Table 10a.** Fixed-effects, HAC Estimator. Dependent variable: Nights-Spent. Robust (HAC) standard errors.

	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>	
Const	1.60199e + 07	1.19797e + 06	13.37	<0.0001	***
Tourism_Exp	-16315.3	5909.53	-2.761	0.0058	***
Env Tran Mob 3	1081.02	519.188	2.082	0.0373	**

**Table 10b.** Main values of descriptive statistics and related statistical tests.

	<i>Values</i>		<i>Values</i>
Mean dependent var	17777761	S.D. dependent var	14853048
Sum squared resid	5.35e+14	S.E. of regression	1404767
LSDV R-squared	0.991727	Within R-squared	0.186356
Log-likelihood	-4566.875	Akaike criterion	9179.751
Schwarz criterion	9264.473	Hannan-Quinn	9213.680

The HAC regressions modify the coefficients and standard error specifications. The coefficient *Env\_Trans\_Mob* at the current time for the dependent variable is never statistically significant in the arrivals regression, while it is significant in the nights-spent regression, at least for the 3-year lagged version. It means that the expenditure made on environment and transportation and mobility did not produce an increase in the number of arrivals, while as far as nights spent are concerned, the effects were produced with a temporal lag of three years. The empirical result shows that, as illustrated above, expenditure on transport and mobility has never been set to increase tourist flows. On the contrary, the fact that overnight stays have a positive coefficient means that their growth is due to other factors, such as the ability of the territories to better organise their tourist attractions by offering more services. In fact, the coefficient is only significant with a three-year delay, confirming that time must be taken to improve tourist services and facilities.

However, the coefficient for *Tourism\_Exp* remains significant in both regressions and always with a negative sign. It is a very important results because it suggests that in the regions where the public tourism expenditures have increased, both arrivals and nights spent are decreased.

## 7. Conclusions

The culture of public policy evaluation in Italy, and in other countries, is not yet sufficiently widespread for several reasons. First, there is no consolidated methodology for identifying all the phases that can be translated into quantitative measures. Moreover, in the evaluation process, one of the most delicate aspects is to be able to find impact indicators that can represent the net changes that have occurred after implementing policy choices. That is why it is important that the relevant measures are available as public data; being inconsistent with theory and methodology risks making such evaluations an arbitrary exercise.

The accounting reform that began in Italy in 2009 and concluded in 2016 represents an important opportunity to obtain accounting data that can link, in great detail, financial resources with the public

policies that are promoted. Moreover, these account reforms guarantee the homogeneity of administrative budgets of all public administration entities, as well as their convergence with national accounts data, which were, until the reform, the only sources that could be used for benchmarking. The functional analysis introduced in administrative balance sheets, along with the introduction of missions and their similarity to the class functional classification of COFOG, have been used for public policy assessments.

Because of the existence of multilevel governance in the tourism sector, measuring the effectiveness of policies requires us to redefine the “public” domain. There, many public enterprises manage public finances but are not in the government sector (S13) or in the administrative public administration. Therefore, neither the national accounting data of the S13 sector (used to evaluate the public finance sustainability of European countries) nor the administrative data of the public administration are exhaustive for the purposes of analyses of tourism spending. This makes clear how important it is from a governance perspective, since there are policies that, while carried out in other sectors, are managed by different authorities that have an indirect effect on the tourism sector, as well. For this reason, the Enlarged Public Sector, which also includes public enterprises, is the public sector considered in this study. We focus our analysis on the regional level because it is these bodies in Italy that have exclusive authority over the tourism sector.

Some elements of this analysis can be highlighted here. First, the graphic representations of tourist arrivals and stays show an inverse relationship to the trends of public spending on tourism for the period 2000–2017. It would seem that the effectiveness of financial resources is compromised since the underlying hypothesis is that financial resources are spent on tourism in order to generate an increase in arrivals and in the number of nights spent. The econometric estimate used a fixed-effects panel regression, and the independent variables in the models were “public spending on tourism” and public spending “on the environment, transport and mobility.” The two estimated regressions used either arrivals or nights spent as the dependent variable. While the effect of “tourist public expenditure” is always negative on both arrivals and nights spent. The results of these regressions show the failure of tourism public expenditure. As regards the variable “expenditure for the environment, transport and mobility”, the panel regression estimated, produces a positive effect only on the dependent variable nights spent. These results are consistent not only with the way the regions have managed their financial resources during this period, but also with the different natures of the expenditures considered, that are capital expenditures.

### **Conflict of interest**

The author declares no conflicts of interest in this paper.

## References

- Antolini F, Truglia FG (2019) Ecotourism and food geographical areas, In: Carpita-Fabbris, M. Carpita, L. Fabbris, Asa Conference, *Statistics for Health and Well-being Book of Short Paper*. Isbn: 9788854951358
- Antolini F, Giusti A, Grassini L (2017) Attrattività dei territori e flussi turistici: l'importanza di una corretta programmazione settoriale. *Turistica*, 1–31.
- Antolini F, Grassini L (2019) Il turismo nella statistica ufficiale, Convegno sul turismo sensoriale, Florence University.
- Arellano M (1987) Computing Robust Standard Errors for within Group Estimators. *Oxf Bull Econ Stat* 49: 431–434.
- Arellano M (2003) *Panel Data Econometrics*, Oxford University Press.
- Aschauer DA (1989) Is public expenditure productive? *J Monetary Econ* 23: 177–200.
- Baltagi BH, Li Q (1995) Testing AR (1) against MA (1) disturbances in an error component model. *J Econometrics* 68: 133–151.
- Baltagi B (2008) *Econometric analysis of panel data*, John Wiley & Sons.
- Barnes M, Matka E, Sullivan H (2003) Evidence, understanding and complexity: evaluation in non-linear systems. *Evaluation* 9: 265–284.
- Birkland TA (2019) *An introduction to the policy process: Theories, concepts, and models of public policy making*, Routledge.
- Chan JL (2010) IPSAS: Conceptual and Institutional Issues. Chan GA Seminar, 1–96.
- Chuaire MF, Scartascini C, Tommasi M (2017) State capacity and the quality of policies. Revisiting the relationship between openness and government size. *Econ Policies* 29: 133–156.
- Clements MP, Joutz F, Stekler HO (2007) An evaluation of the forecasts of the Federal Reserve: a pooled approach. *J Appl Econometrics* 22: 121–136.
- Cooper RN (1985) Economic interdependence and coordination of economic policies. *Handb Int Econ* 2: 1195–1234.
- Commissione Parlamentare per le Questioni Regionali (2016) Resoconto stenografico, Seduta n. 23 di Giovedì 13 ottobre 2016, Roma.
- Cuccu O, De Luca S (2006) The Policies and the planning instruments for Tourism, In: *Svimez*, Report on Tourism Industry in the Mezzogiorno, Il Mulino, Bologna.
- Dabbicco G (2015) The impact of accrual-based public accounting harmonization on EU macroeconomic surveillance and governments' policy decision-making. *Int J Public Adm* 38: 253–267.
- Dasí RM, Montesinos V, Murgui S (2016) Government financial statistics and accounting in Europe: is ESA 2010 improving convergence? *Public Money Manage* 36: 165–172.
- De Jesus MAJ, Jorge SM (2011) Cash-accruals adjustments from governmental accounting to national accounts: Implications on the Italian, Portuguese and Spanish central governmental budgetary balances, In: XVI Congreso AECA-Nuevo modelo económico: Empresa, Mercados y Culturas.
- Devarajan S, Swaroop V, Zou HF (1996) The composition of public expenditure and economic growth. *J Monetary Econ* 37: 313–344.

- Dwyer L, Forsyth P, Spurr R (2007) Contrasting the Uses of TSAs and CGE models: Measuring Tourism Yield and Productivity. *Tourism Econ* 13: 537–551.
- Eurostat (1996) European System of Accounts (ESA). Luxembourg.
- Eurostat (2010) European System of Accounts (ESA). Luxembourg.
- Eurostat (2014), Methodological manual for tourism statistics, version 3.1. Available from <https://ec.europa.eu/eurostat/documents/3859598/6454997/KS-GQ-14-013-EN-N.pdf/166605aa-c990-40c4-b9f7-59c297154277?t=1420557603000>.
- Gerrard CD, Ferroni M, Mody A (2001) Global Public Policies and Programs: Implications for Financing and Evaluation. The World Bank.
- Giungato G, Tancredi A (2019) Confronto tra il sistema CPT e i Conti delle Amministrazioni Pubbliche Istat. In: *CPT Informa*.
- Grassini L, Dugheri G (2021) Mobile phone data and tourism statistics: a broken promise? *Natl Accounting Rev* 3: 50–68.
- Haynes P (2008) Complexity theory and evaluation in public management: A qualitative systems approach. *Public Manage Rev* 10: 401–419.
- Howlett M (2019) *Designing public policies: Principles and instruments*, Routledge.
- Innes JE, Booher DE (2018) *Planning with complexity: An introduction to collaborative rationality for public policy*, Routledge.
- Istat (2000) *Movimento negli Esercizi Ricettivi*, Roma.
- Key VO (1940) The lack of a budgetary theory. *Am Political Sci Rev* 34: 1137–1144.
- Leruth MLE, Paul E (2006) A principal-agent theory approach to public expenditure management systems in developing countries. IMF Working Paper No. 06/204.
- Mahadi R, Khalid SNA, Mail R, et al. (2017) Accrual Accounting in Public Sectors: Possible Contextual and Application Gaps for Future Research Agenda. *Asian J Financ Accounting* 9.
- Monteiro BRP, Gomes RC (2013) International experiences with accrual budgeting in the public sector. *Revista Contabilidade Finanças* 24: 103.
- OECD (2004) *Evaluation of Sme policies and programmes. Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a more responsible and inclusive Globalization*. Istanbul Turkey.
- Oxman AD, Bjørnda, A, Becerra-Posada F, et al. (2010) A framework for mandatory impact evaluation to ensure well informed public policy decisions. *Lancet* 375: 427–431.
- Peter Van der Hoek M (2005) From cash to accrual budgeting and accounting in the public sector: The Dutch experience. *Public Budg Financ* 25: 32–45.
- Pollack M (1995) Regional Actors in an intergovernmental play: the making and implementation of EC structural policy, In: Rhodes C and Mazey S, *The state of the European Union*, (eds.), Longman: Harlow.
- Scriven M (1991) *Evaluation thesaurus*, 4th Edition, Sage, Newbury Park.
- Setiyawati H, Iskandar D, Basar YS (2018) The quality of financial reporting through increasing the competence of internal accountants and accrual basis. *Int J Econ Bus Manage Stud* 5: 31–40.
- Storey D (2004) Evaluation of SME Policies and Programmes, presented at 2nd Conference of Ministers Responsible for Small and Medium Sized Enterprises, OECD, Paris (online), available from: <http://www.oecd.org/cfe/smes/31919294.pdf>.



- Tran VH, Jo V, Pham QT (2020) Vietnam's sustainable tourism and growth: a new approach to strategic policy modelling. *Natl Accounting Rev* 2: 324–336.
- United Nations (1999) Classifications of expenditure according to purpose: COFOG, COICOP, COPNI, COPP. In: Series M, *Miscellaneous Statistical Papers*, No. 84, New York. Available from: <https://unstats.un.org/unsd/classifications/Family/Detail/4>.
- United Nations (2008) *System of National Accounts*, (SNA), Washington.
- Wooldridge J (2001) *Econometric Analysis of Cross Section and Panel Data*, Cambridge.
- Zeynep O (2000) Determinants of health outcomes in industrialized countries: a pooled, cross- countries, time series analysis OECD. *Econ Stud* 30: 53–78.



AIMS Press

© 2021 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)