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An Empirical Investigation of Italian Provinces

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An Empirical Investigation of Italian Provinces

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ABSTRACT. The importance of cultural events for attracting tourism has been often posited in research, however rarely tested in relation to non-cultural activities. This paper investigates the association between participation in entertainment activities and tourism flows in Italian provinces, and find that admission to theatre-type activities increases as the number of domestic tourists goes up, whereas admission to museums or concerts rises with an increase in foreign tourists. Admissions to exhibitions and shows expose a positive association with both domestic and international tourists, while non-cultural activities remain statistically insignificant. The results provide empirical support for the existence of a strong relationship between tourism flows and cultural participation. The findings also imply that the demand for entertainment varies depending on the origin of the tourist.

KEYWORDS: Cultural tourists, cultural participation, tourism flows, Italian Provinces.

JEL CODES: L83, Z11.

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Introduction

Cultural tourism is perceived as an important economic driver and authorities endeavour to exploit this by fostering cultural activity in their respective countries or regions. Consequently, the attention given to the relationship between tourism and the cultural sector has recently increased significantly. The research is, however, usually constrained to analyses of a single type of cultural activity (e.g. McKercher *et al.*, 2005) and therefore any comparison of results across different cultural activities becomes very difficult. Furthermore, little is known on the relative importance of other, non-cultural activities, such as sport events, in attracting tourism. In this study we attempt to fill this gap and investigate the participation for different types of cultural/leisure activity and tourism flows. We also shed some light on the differences in those relationships depending on the origin of the tourist.

According to Richards and Binink (1995), and in line with European Association for Tourism and Leisure Education (ATLAS), cultural tourism is defined as ‘the movement of persons to cultural attractions away from their normal place of residence with the intention to gather new information and experiences to satisfy their cultural needs’ (Bonet, 2003). Cultural tourism covers a wide range of activities such as: visits to cultural festivals or cultural sites, longer tours constructed around a cultural theme (museums, performing arts centres, archaeological and historical sites, religious centres and zoos) and a combination of features focusing on historic, cultural and/or heritage elements (Bonn *et al.*, 2007; Boyd, 2002; Throsby, 2001). The focus of economic studies rests, in particular, on the following three areas: the pull factor of different cultural attractions, the attributes of the cultural tourist and the identification of different segments of cultural tourists (Barbieri and Mahoney, 2010).

Research considering tourism and cultural industries, highlights the reciprocal benefit that industries can gain from common strategies (Hughes, 2002; McKercher *et al.*, 2005;

Tighe, 1986). Other studies also focus on the influence of culture on tourist behaviour (Bracalente *et al.*, 2011; Correia *et al.*, 2011; March, 1997; Tohmo, 2005). Empirical studies investigate the relationship between tourism and a wide range of cultural experiences (de Guzman *et al.*, 2006; Formica and Uysal, 1998; Kim *et al.*, 2007; McKercher, 2002; McKercher *et al.*, 2005; Stoddard *et al.*, 2006).

The main contribution of this research to the aforementioned literature is the investigation of the association between tourism flows and the demand for a wide set of cultural/leisure activities. Knowledge of the role of various types of activities in attracting flows of tourists is important in order to develop effective policies (Richards, 1996). This work is also related to a recent study by Massidda and Etzo (2012), in which the determinants of Italian domestic tourism are studied. By investigating patterns of the demand for entertainment by tourists our study focuses on the consequences, rather than causes, of tourism and hence, the insights are complementary to the work by Massidda and Etzo (2012). Furthermore, following Garin-Munoz (2009) who divides tourists into domestic and foreign, our model sheds some light on the differences in demand for those activities depending on the origin of the tourist. This is particularly relevant in light of the influential article by Kim *et al.* (2007), in which the authors investigate the influence of personal traits on participation patterns by cultural tourists without, however, addressing the issue of the origin of such tourists. Finally, in this study we provide a rough estimation of the direct financial benefits that emerge from cultural tourism.

The empirical analysis is based on a panel of 110 Italian provinces for the two-year period 2006–2007. Regions, provinces, municipalities, metropolitan cities (e.g. Turin, Milan, Venice, Florence, Rome and eleven more) and the central state are the five elements of the Italian Republic. There are twenty regions; five of these have a special status (Sicily, Sardinia, Trentino–Alto Adige, Valle d'Aosta and Friuli Venezia Giulia). The Trentino–Alto

Adige region entails only two autonomous provinces (Trento and Bolzano), both provinces have the same legislative powers to those of the regions. The province is a territorial local authority which belongs to a region and consists of several municipalities. In 1861 (year of the Italian Unification) the number of provinces has been fixed at 59, but it increased over time until 110 in 2004.

The data utilised in this research provides records of a large number of leisure activities (e.g. museums, theatres, concerts, sports, etc.). Employing ordinary least squares methodology we provide reliable estimates and find a strong and positive association between tourism flows and participation in cultural events. Tourist arrivals correspond with a significantly higher number of visits to museums, theatres, concerts and exhibitions and shows. The highest share of tourists among all visitors is detected for the exhibition and shows category: around one in three visitors is a tourist. Moreover, tourists account for around 12.8 per cent of museum visits, 4.4 per cent for theatre and 6.8 per cent for concerts. Other forms of entertainment, such as sports or multi-genre activities do not exhibit any significant relationship with tourist inflows, underlining the predominant role of cultural activities in attracting tourism. Furthermore, the findings indicate a very high heterogeneity in demand for leisure activity depending on the origin of tourists. Domestic tourists tend to prefer theatre, while foreign tourists prefer museums and concerts. The exhibitions and shows category attracts both types of tourists.

There are several reasons for focusing on Italy. First, it is a country with a long and remarkable cultural history. As a result the supply of cultural goods is plentiful and varied. Second, the geographic distribution of cultural supply is very wide. More than 9 per cent of municipalities host cultural and historical goods of some interest (Ministero del Turismo, 1991).¹ This ensures that estimates from cross-sectional analysis are reliable. Third, the Società Italiana degli Autori ed Editori (Italian Authors and Publishers Association - SIAE)

provides databases for a wide set of entertainments that allow us to make comparisons between various activities.

In Italy there is no official definition of culture, nor are the boundaries of cultural field clearly defined by government. Since 2000 the *Ministero per i beni e le attività culturali* (Ministry of Heritage and Cultural Activities) has been entrusted with authority over a wide range of cultural institutions, such as museums, libraries and archives, visual arts, performing arts and cinema, and copyright (Bodo and Bodo, 2011). In 17 out of 20 regions, ministerial authoring is delegated to Regional Boards for Cultural Goods and Landscapes, and the local *Soprintendenze*.²

Provincial governments have little involvement in cultural policies, although there are some exceptions such as the autonomous provinces of Trento and Bolzano (Bodo and Bodo, 2011). After the central government, the municipalities are the most prominent public actors on the cultural scene in Italy. Through their municipal departments for culture (*Assessorati Comunali alla Cultura*) they play an important role in the direct and indirect management of cultural institutions: museums and sites of cultural interest, archives, libraries, theatres etc (Bodo and Bodo, 2011).

The paper is organized as follows: next section presents the literature review, followed by the methodology applied and data utilised. The last two sections discuss the results and conclude the paper.

Literature Review

The determinant of cultural participation has been study in deep both at microeconomic and macroeconomic levels (see for example: Ateca-Amestoy, 2008; Bonato *et al.*, 1990; Seaman, 2006). The results of these studies have demonstrated that the main determinants of different kinds of cultural participation are income and education.

The tourism sector has been also studied from different perspective: tourism demand, both international and domestic (Brida and Risso, 2009; Ong, 1995; Papatheodorou, 1999); tourist expenditure (O'Hagan and Harrison, 1984; Papatheodorou, 1999; Syriopoulos and Sinclair, 1993; White, 1985) public spending for tourism (Cellini and Torrisi, 2009) using different econometric techniques (Wu *et al.*, 2011).

Research considering tourism and cultural industries highlights mainly the reciprocal benefit that industries can gain from common strategies (Hughes, 2002; McKercher *et al.*, 2005; Tighe, 1986). Previous studies have demonstrated that cultural tourists have relatively high income or wealth, better education, higher age and are female (Kim *et al.*, 2007). Other studies focus on the influence of culture on tourist behavior (Bracalente *et al.*, 2011; Correia *et al.*, 2011; March, 1997; Tohmo, 2005). For example, Correia *et al.* (2011) demonstrate that the national culture influences directly the pattern of vacation decision in various ways (quality, brand and price). Empirical studies investigate the relationship between tourism and a wide range of cultural experiences (de Guzman *et al.*, 2006; Formica and Uysal, 1998; Kim *et al.*, 2007; McKercher, 2002; McKercher *et al.*, 2005; Stoddard *et al.*, 2006). According to Cuccia and Rizzo (2011) cultural tourism is an increasing segment of tourism demand that can reduce seasonality in tourism. But they also show that the contribution of cultural heritage is rather limited in destinations close to the sea.

Difference in domestic and foreign tourism are also investigated in various studies (Massida and Etzo, 2012; Papatheodorou, 1999), for two main reasons, from one hand domestic tourism is dominant with respect to international tourism flows in terms of both size and economic contribution (Massida and Etzo, 2012). On the other hand, international tourism has become a mass activity in the post-war years. This for several reasons: shorter working hours, greater individual prosperity, faster and less expensive travel, simpler bureaucratic procedures and the internationalization of markets and the impact of advanced

technology (Papatheodorou, 1999)

For what concerns Italy, it is important to highlight that tourism is considered of primary importance (Cellini and Torrìsi, 2009). Moreover, according to Valdani and Ancarani (2000) in Italy there has been a growing awareness on the importance of valorizing and promoting the territory through the creation of itineraries that can be considered as location tourist packages. Asero and Patti (2009) study the importance of wine tourism and assert that it can represent the most innovative and evident phenomenon of the more general tourism supply created around territorial intensive products, while Contine, *et al.* (2009) show the importance and the potentiality of Agri-tourism and rural development.

Empirical Model

The aim of this study is to investigate whether there exists any relationship between the demand for certain types of leisure activities and tourism flows. We test this hypothesis by estimating the following model:

$$Attendance_{pc,jit} = \beta_0 + \beta_1 Tourism_{pc,it} + \beta_2 Price_{jit} + \beta_3 GDP_{pc,it} + \beta_4 Year_t + \beta Region_i + \delta_{it}$$

where the attendance at leisure activities is measured by the number of admissions per capita to a leisure activity j in province i in year t ($Attendance_{pc,jit}$). The coefficient of major interest is β_1 which measures the relationship between per capita tourism flows to province i in year t ($Tourism_{pc,it}$) and the dependent variable. In this study we account for tourism intensity in two ways. First, we adopt a measure of *tourist arrivals*, which is the number of tourists who stayed at least one night in a province which is not their home province. Second *tourists' duration of stay* (i.e. the number of nights that the average tourist sojourned in a province which is not their home province) is taken into account. Furthermore, in order to account for

varying sizes of provinces both tourism flow measures are expressed in relation to the population size of a province (e.g. $tourist\ arrivals_{it}/population_{it}$). According to Cellini and Torrì (2009) tourism in Italy cannot be evaluate simply in aggregate terms: because in this case regions such as Veneto, Trentino Alto-Adige and Emilia Romagna attract the highest number, while Molise, Basilicata and Valle d'Aosta the lowest one, but this is due to different dimension of regions. The same applies if one looks at provincial level. For this reason, "it is meaningful to consider the presence normalised according to resident population or territorial sizes" (Cellini and Torrì, 2009: 11). As such our approach resembles the approach conducted by Istituto Tagliacarne (1992), where the tourism intensity relative to habitants has been employed and has been termed as the "touristicity rate".³

We account for varying prices of a performance by introducing the admission price ($Price_{jit}$) as a control variable and controls for GDP per capita, in order to account for wealth heterogeneity between provinces. As the Italian leisure activity database is available for two years at provincial level, 2006 and 2007, an indicator function equal to one for each of the two years is also included in the estimations.⁴ In order to deal with unobserved geographical heterogeneity, we include a set of indicator functions that take the value of one for each of the twenty Italian regions ($Region_i$). Finally, the model contains a robust estimation of variance (δ_{it}), which prevents any bias arising from the presence of outliers or heteroskedasticity. The model is estimated using a standard ordinary least squares methodology.⁵

Data, variables and descriptive statistics

The data used in this analysis comes from three sources: SIAE, the Ministry of Cultural Heritage and Activities, and ISTAT (*Istituto Nazionale di Statistica* – the National Institute of Statistics).

The SIAE data are taken from the “Annuario dello spettacolo” (The yearbook of the entertainment activities) 2006 and 2007, those data show the number of performances, number of tickets sold, box office revenue, public expenditure and turnover per geographical area, region and type of municipality.⁶ All this information is displayed for theatrical activities (theatre, opera, revue and musical, ballets, puppets and marionettes, performing arts and circuses), concerts (classical, pop and jazz), sports (soccer, team sports other than soccer, individual sports and other sports), dance and recitals, touring amusements, exhibitions and show and multi-genre. Those data have all been utilized at annual level. As suggested by SIAE the price variable has been constructed as the ratio between the box office revenue and the number of ticket sold. This because the majority of box office revenue comes from the ticket sold.

This dataset is complemented by records on museum attendance (number of visitors and revenue) provided at provincial level by the Ministry of Cultural Heritage and Activities. Museums are divided into paying and non-paying. Data on the number of visitors for paying museums are collected according to the numbers of tickets issued while for the non-paying museums estimations are based on register attendance or a counting device. The content of each entertainment activity variable is further described in Table 1

Data provided by ISTAT comes from different sources. Arrivals and stays for Italians and foreign are taken from the *Capacità e Movimento degli esercizi ricettivi* (2006 and 2007) survey. This monthly survey (it is also summarized in an annual version that we utilise in our work) is carried out at national, regional and provincial levels through a census that provides data on the flow of Italians and foreign in Italy based on the daily declaration that the owners of the tourist accommodation send to the local tourist board. The statistical information is collected with the survey form, where the number of customers arriving and departing, their country or Italian region of residence, and the length of stay are reported. The objective of

this survey is to quantify arrivals, stays and the average length of stay in tourist accommodation. Arrivals refer to the numbers of customers, Italians or foreign, staying at least one night in any accommodation for tourists in the period considered. Stays refers to the numbers of nights that customers, Italians or foreign, spend in the accommodation. The ratio between presences (number of nights) and arrivals (number of customers) represents the average length of stay. The tourist accommodation includes all types of facilities: hotels, motels, residences, camp sites, holiday villages, farm accommodation, holiday flat and houses, hostels, alpine refuges and so on.

Population at provincial level has been obtained from the annual survey on the labour force (Indagine sulle forze lavoro – ISTAT, 2007 and 2008). The GDP is taken from disposable household income in Italian regions (Il reddito disponibile delle famiglie nelle regioni italiane – ISTAT 2011). The price index is taken from the publication of the value of money 2007 in Italy (Valore della moneta in Italia - ISTAT 2009).

Table 2 presents summary statistics of the variables used in the analysis. In Panel A it can be observed that the average province has been visited by around 884,000 tourists in a year that stay at least one night (*arrivals*). The average stay lasted approximately 4 nights. Around 491,000 tourists (55.5 per cent) come from other parts of Italy, while the remaining tourists come from abroad. Panel B reports the admission rates to various entertainment activities. Theatre performances are the most popular and have been visited by around 2.2 people per each resident in a province. Museums and dance and concertinos have been visited each year by around 6 tourists per 10 residents in a province, followed by exhibitions and shows, sports, touring amusements and concerts..

Figure 1 presents the geographic distribution of arrivals in Italian provinces. The distribution is marked in different shades of grey, where provinces that have seen higher tourism inflows are marked with a darker shade. It is interesting to observe the high degree of

heterogeneity in the arrivals.⁷ Several provinces in northern Italy have been extensively visited, especially the region of Lombardy and Emilia-Romagna, but also central Italy provides popular destinations, in particular in the Lazio region, as well as certain parts of Campania, Calabria and on Sicily. There are also a large number of provinces, spread quite evenly across the map of Italy, that are rarely ever visited. The distribution of participation to any type of leisure activity, as can be viewed in Figure 2, is more concentrated in the northern provinces, however exhibits sufficient heterogeneity. It can be observed that some provinces in immediate proximity to each other expose a very different entertainment activity supply. Some similarities with the tourism flows can be observed, for instance, the clustering of leisure activity admissions in north-central Italy.

All in all, the conducted geographical inspection is important for two reasons. First, the figures provide some tentative evidence on the comparability of the patterns of concentration of tourism flows and participation in entertainment activities. Second, we observe a sufficient degree of heterogeneity across Italy for each of the variables. This allows us to statistically exploit this cross-sectional variety in order to detect a more meaningful association between tourism flow and demand for entertainment.

Finally, preliminary evidence on the positive association between demand for entertainment and tourist arrivals in Italy is shown in Figure 3. The diagram provides some indication of the heterogeneous demand for leisure activities depending on the origin of the tourist.

Empirical Results

Main Results

The association between admission to various types of entertainment and tourism flows is reported in Table 3. Panel A reports the coefficients for tourist arrivals to a province while

Panel B summarizes the results for tourist stays (i.e. duration of stay). The correlation-coefficient between tourist arrivals per capita and the number of admissions to museums is found to be positive and highly significant. This implies that an arrival of one additional tourist per citizen corresponds with a 0.0765 higher admission rate per citizen. Moreover, around every thirteenth tourist visited a museum. Given the average admission rate of around 0.59 per capita (compare Table 2) the results suggest that 12.8 per cent of museum demand is from tourists. The coefficient for theatre is equal to 0.091 and implies that every eleventh tourist participated in such activity, which accounted for 4.2 per cent of the overall theatre admissions. The increase resulting from tourist arrivals for concerts is equal to 0.0093 which explains a share of around 6.6 per cent of the total concert attendance. The largest admission rate increase can be observed for the exhibitions and shows category: an additional tourist arrival is associated with a 0.085 higher admission rate which corresponds with a high 33.7 per cent of the total visits to exhibitions and shows. The relationship between attendance to the dance and concertinos with tourist arrivals implies that every sixth tourist attended such activity.⁸ The coefficients for the remaining categories are positive, though statistically insignificant. In Panel B it can be observed that the duration of tourist stays is found to be positively correlated with each of the studied entertainment activity admission rates. Statistically significant associations can, however, be detected only for the exhibitions and shows, as well as for dance and concertinos. Each additional night spent implies a higher admission rate by 0.015 to an exhibition or show. This coefficient suggests that, on average, every tenth tourist who stays a week in a province would visit this activity.

Table 4 displays the results when we disentangle tourism flows by their origin and differentiate between domestic tourism (i.e. tourists from a different Italian province) and foreign tourism (i.e. tourists from abroad). It can be observed that the significant positive association between tourism flows and admissions to museums persists only for the case of

foreign tourists, both in terms of arrivals and duration. Almost every fourth foreign tourist has visited a museum and the admission rate increases by 3.6 per cent for every additional night stayed in the province. The point estimates for theatre remain significant only for domestic tourists indicating that it is primarily Italians who demand such attractions: close to one in five tourists' visits a theatre during their stay and this value increases by 2.5 per cent for each additional night. The relationship between admissions to concerts and tourism flows prevails only for foreign tourists' arrivals and duration of stay. Around 2.5 per cent of foreign tourists attend a concert performance and are more likely to do so if they stay longer. Once again the point estimates increase when compared to the aggregated tourist demand, and are highly significant. The correlation between admissions to exhibitions and shows remains positive and significant for Italian as well as foreign tourists, with an attendance rate approximately twice as high for domestic tourists. The results further indicate that Italian tourism inflows reveal a significantly positive relationship with admissions to touring amusement activities; however the attendance of such attractions does not increase with the duration of a stay. Italian tourism also evidences somewhat higher attendance to multi-genre activity, although the estimates are carried out with little precision. Activities covered in the sports category do not attract any additional tourism inflows.

Robustness Tests

In order to ensure the reliability of our results, we conduct a series of robustness tests. The point estimate on the number of nights a tourist stays in a province (*Tourism flows-stay*) might not adequately capture the duration of a stay. This could be particularly the case if the relationship between duration of a stay and participation in an entertainment activity was not linear. For this reason we estimate two further specifications in which we include an additional quadratic term, in order to allow for decreasing returns, or the variable is recorded

at its logarithm. The emerging results are reported in Table 2.1 and are in general coherent with our previous conclusions. Another way of estimating the importance of tourism flows is by including both measures employed in this study into one model. The results of such specification are presented in Table 2.2. The role of tourism flows is found to be particularly strong for museums, theatre and concerts. Each tourist arrival corresponds positively with the admission rate to those forms of entertainment. The relationship is however negative with the duration of stay, providing some indication of decreasing returns. No other category has a significant association with tourism flows, which reconfirms the predominant role of cultural activities in attracting tourism.

The data-set contains records for two years and we include a dummy variable in order to account for temporal variation. Such an indicator would not capture time-variation if, for some reason, equal changes in the dependent as well as the tourism flow variable occurred. It is quite unlikely that any large cointegrated movements would occur in those variables during the short time span of one year. Nonetheless, we re-estimate the model for each year separately. The results are reported in Tables 2.3 and 2.4. It can be observed that the coefficients are very robust in sign, size and significance for both years.

The divergence between the northern and southern part of Italy is believed to be quite marked and might not be sufficiently captured by the regional indicator variables introduced. For this reason we include additional dummy variables in order to take account of whether a province is located in the north, centre or south (including the islands). The point estimates are summarized in Table 2.5 and provide very consistent findings.

Some previous studies suggest a strong relationship between tourism flows and heritage sites (e.g. Borg and Costa, 1996; Murrillo *et al.*, 2008). In order to control for the impact of such sites on tourism flows, we obtained data on the number of UNESCO world heritage sites (UNESCO, 2012) and on archaeological and cultural sites for each Italian

province provided by the Ministry of Cultural Heritage and Activities. Cultural places include museums, monuments, archaeological sites, archives, libraries and theatres. The UNESCO World Heritage List includes 936 properties all over the world forming part of the cultural and natural heritage which the World Heritage Committee considers as of outstanding universal value. These include 44 cultural and 3 natural sites in Italy. Additional specification with controls for those sites are estimated and presented in Table 2.6 to 2.8. It is encouraging to observe that the results remain unchanged.

A word of caution regarding our results is necessary, given that the variable measuring tourism flows does not take into account day-visitors. In fact, a tourist could travel through a province without staying overnight in it and yet visit a museum or attend an entertainment event.⁹ Country-wide records on the extent of day-visitors are not available and in similar research settings are usually based on “touristicity rate”, a ratio between tourism arrivals and habitants (Istituto Tagliacarne, 1992, Cellini and Torrìsi, 2009). In the underlying study a similar coefficient is being calculated and utilised, as an approximation of the overall tourism flows to a province. This proxy would be biased if day tourists were choosing consistently different provinces for their visit than tourists staying at least one night. While it is possible that some tourists stay overnight outside the location that offers cultural attractions, it is quite unlikely that they would stay outside the province. For example, Cellerino (1998) argues that Venice experiences a proportionally high number of day visitors. It is nonetheless probable that those day visitors stay overnight in proximity, for example in Mestre on mainland, where accommodation prices are also considerably lower.¹⁰ The day-visitor bias is even less likely for foreign visitors. It is fairly out of scope to fly over to an Italian city, participate in an entertainment activity and fly out on the same day.

It is nonetheless possible that some tourists travel through Italy and that they participate also in some entertainment activities during this travel. Since the investigation is

conducted at province level, the distances across three adjoining provinces are somewhat large to be covered within one day. The distance to be covered would be even more extreme, if the analysis was conducted at the region level. Therefore, in a further robustness test, we have aggregated all observations over the twenty regions of Italy. Those estimations have delivered consistent results.¹¹ Obviously, travel through two or three regions within one day is technically possible, given however the sample of tourists under observation – usually people on vacation, who are consuming their leisure – such intense and tiresome travels are rather unlikely. We have also exploited further any arising bias by dropping provinces with the smallest geographical surface, as such provinces are arguably most likely to be travelled through in one day. The results are found once again to be consistent.

Discussion

The results are in line expectations. Museum attendance is primarily driven by foreign tourism, which could reflect a higher interest in Italian culture by international tourists (Lynch *et al.*, 2011). In addition, many museums across Italy have very similar exhibitions and are presumably less attractive for Italian tourists. For example, the life and works of Leonardo da Vinci are exhibited, among other places, in the *Museo Leonardiano* in Vinci, *Museo Leonardo da Vinci* in Florence, National Museum of Science and Technology in Milan or *Museo il Genio di Leonardo da Vinci* in Venice. Foreign tourists are more likely to be unique visitors (i.e. visiting for the first time) and therefore, more interested in museums, as opposed to returning visitors who have probably visited a museum already during their previous stay.¹² This argument would not apply to a theatre performance, as the repertoire changes on a regular basis, hence attracting recurring visitors. The positive association between admissions to the theatre and Italian tourists could also be due to the language barrier that prevents foreign tourists, who may not speak Italian, from attending some events,

particularly theatre or comedy shows. In addition, some performers might be known to the Italian audience from television and hence be particularly attractive for domestic tourists. Also the marketing of theatre events usually takes place in media that are not easily accessible to foreign tourists, for example, in daily newspapers or magazines. On the other hand, concerts are an attractive option even for those who do not speak Italian. Concerts seem also to be advertised more often in publicly visible areas, such as on wall posters or street banners. Moreover, the legacy of classical composers might constitute another significant factor that attracts foreign tourists.¹³ A significant association between tourism flows and admissions is found for the exhibitions and shows category. This category usually covers large events, such as cultural exhibitions and trade fairs, and therefore it is primarily targeted for tourists from outside the province. Exhibition and shows are however organised on irregular basis and associated with substantial preparatory and marketing costs. Activities encompassed by the touring amusements (e.g. amusement parks) and multi-genre (e.g. open-air shows) are of much less importance and possibly of significance only within the region.

One important question concerns the economic benefit of the observed tourism flows. Tentative evidence on the relationship between GDP in a province and tourist arrivals is shown in Figure 4. As one would expect the association is positive with a correlation coefficient equal to 0.49 and significant at 1 per cent level. While little can be said on the causal relationship, this figure provides some indication of the economic importance of tourism flows. One can further conduct an exercise to approximate direct revenues from tourism in terms of ticket sales for cultural events. In Table 5 we acquire the average number of tourists who participated in each cultural activity per province by multiplying the number of tourist arrivals with the point estimates obtained from our model (presented in Panel A of Table 3). Using the estimated tourist attendance and multiplying by the average ticket price, one can obtain the average direct revenue per cultural activity per province. Relating the

obtained revenues from tourist arrivals to the overall revenues of each of the categories, the relative importance of tourism-related direct revenues can be approximated. The weighted average contribution of tourists accounts for a non-negligible 6.1 per cent of total revenue. This contribution towards total revenues from tourist arrivals varies between 4 per cent for the theatre and 15 per cent for museums. This is however the lower-bound estimate, as other possible types of revenue, for example, from sales in souvenir shops, museum cafeterias or theatre bars, have not been considered. In addition, revenues obtained from ticket sales are only of minor importance, as many of the studied activities can be visited free of charge. There is, for instance, no entrance fee to 46 per cent museums or 70 per cent art galleries in Italy (ENIT, 1992). It is beyond the scope of the present work to account for revenues earned in related sectors (e.g. the service industry).

Conclusion

This work contributes to the growing literature on tourism flows and cultural activities. It adds to that strand by investigating the association between tourism flows and attendance at various types of entertainment. Using data for Italian provinces we find a particularly strong and positive relationship between tourism flows and participation in cultural events. Tourist arrivals correspond with a significantly higher number of visits to museums, theatre and concerts, as well as to exhibitions and shows. Other types of public entertainment, such as sports or multi-genre activities do not exhibit any significant relationship with tourist inflows, implying the predominant role of cultural activities in attracting tourism. Demand for leisure activities is found to be very heterogeneous and dependent on the origin of tourists. Domestic tourists participate primarily in theatre, while foreign tourists are more inclined to visit museums and attend concerts. Exhibitions and shows attract both types of tourists. This paper further provides a tentative analysis of the benefit from tourist participation in cultural

activities in terms of revenue. The results indicate that at least 6 per cent of the revenues from ticket sales can be attributed to tourism. This is nonetheless only an approximation and a lower-bound as it does not account for, for example, revenues from other services provided, such as shops, cafeterias or audiovisual aids. Furthermore, revenues in related sectors (e.g. hospitality industry) remain unobserved.

The main contribution of this paper though is the compilation, in a systematic way, of a framework in which the relative importance of a large range of cultural and non-cultural activities is compared and brought in relation to tourism flows. While it could be maintained that much of the evidence in this paper might seem to be well established already, at least in a general sense, we would argue that this is not the case in a number of respects. First, the accepted wisdom that cultural attractions stimulate tourism inflows was missing information on what exactly type of cultural activity is the most meaningful in explaining a high rate of tourism. In order to illuminate the relative importance, a comparable set of data and a consistent research setting is necessary, which is provided in the underlying study. Second, there does not appear to have been any previous systematic documentation of the performance in attracting tourism of non-cultural activities relative to cultural events.

However, a word of caution should be spent regarding our results. It is important to highlight that the underlying data does not take into account day-visitors. This is caused by the way in which the used records have been obtained (i.e. from owners of the tourist accommodation where a tourist stayed at least one night). As a result our data might be biased towards Italian tourists, since they are supposedly more likely to travel for one day only. The reasons why day-tourists, whether domestic or foreign, behave consistently in a different way with regard to leisure activities demand than tourists visiting for a longer period, are however possibly limited. Furthermore, on an aggregated province-level the share of day-visitors is potentially small number compared to the total number of tourists. For these

reasons, the arising bias is possibly only of minor importance.

Turning to policy implications, the emerging findings imply the predominant role of cultural activities in attracting tourism. As such this study provides important empirical support for qualitative arguments posited in previous research on the increasing significance of cultural tourism in Europe (e.g Richards, 1996). Future planning of policies stimulating tourism inflows might be particularly effective if they were focused on the further development and improved marketing of cultural activities. Policy makers involved in destination marketing should, however, bear in mind the heterogeneous demand of tourists depending on their origin. In particular, provinces with a rich supply of theatrical events could presumably find it easier to attract domestic tourists, while provinces with a good museum or concert supply might benefit more if focus is put on tourists from abroad. One way to promote cultural activities is to foster museums in locations with higher shares of international tourists, whereas supporting theatres might be advisable in places with more domestic tourists. In cities with a long tradition of tourism, such as Florence, Rome and Venice, culture can be promoted by fostering both museums and theatres. However, given that museums are visited less often by the domestic tourist, which could be a result of similar permanent exhibitions across Italian provinces, it might be a good strategy for museums to promote unique or temporary exhibitions. Further research investigating efficient marketing strategies and specific case studies is required in order to design best practices for attracting cultural tourism.

¹ The concentration goes far beyond the ‘classical’ Italian cities of art. The density of heritage structures in Italian provinces reaches 50 per km² in Siena, 46.2 in Grosseto and 42.4 in Latina (Ministero del Turismo, 1991). Note also that each province, the level at which this study is conducted, comprises of around 74 municipalities.

² In Italy 5 out of 20 regions are autonomous with more extended competencies also in the cultural field. Three of these regions (Valle d’Aosta, Sicily and Trentino Alto Adige) exercise exclusive and direct legislative and administrative responsibility for their own heritage assets, museums and sites (Bodo and Bodo, 2011).

³ The used "touristicity rate" is suggested by the Italian Tourist Observatory as one of the main touristicity indicators. It measures the level of touristic "crowding" in a certain period (year or month) and indicates the number of tourists per 100'000 inhabitants. Note that country-wide records on day-tourism are not available and hence we have to rely on the proposed measure as approximations for the overall tourism intensity. The suggested measures are reliable proxies as long as day-tourists do not choose consistently different provinces for their visit than tourists staying at least one night. An extended discussion of this issue is provided in Section '4.3 Robustness Tests'.

⁴ Out of sample estimation based on only one of the years is presented in the Robustness Section and delivers very consistent results.

⁵ Since the dependent variables take only positive values, we have also tried alternative estimation techniques, for example a Tobit Model with a left-censoring limit set equal to zero. The results are reported in Appendix 1 and are found to be very robust. Since the lower limit of the dependent variables is not imposed by us, but by nature of the underlying data, Ordinary Least Squares estimations perform in general sufficiently well as long as the distance between two values of the dependent variable is constant over the whole range. This seems to be the case in this research setting.

⁶ For more detail on SIAE data see Castiglione (2011).

⁷ A similar picture would emerge if one looked at the total duration of stay of tourists (not reported).

⁸ The 'dance activities and concertinos' category includes dance or music performances that are not the main element of appeal for customers (e.g. live piano performance at a bar). As it is not possible to disclose whether it was the quality of the performance or other factors, such as, for example, the quality of the staff working at the bar that attracted the customer, we do not devote much attention to this category and only report the results for consistency.

⁹ Arguably this is hardly the case for the concert or dance and concertinos categories, as those activities are scheduled usually for the evenings, which quite certainly enforces staying overnight nearby.

¹⁰ Mestre provides a popular accommodation base and is located around 15 minutes by bus from Venice. It is considerably cheaper than Venice, is good accessible by bus, train and lies in proximity from the airport. Furthermore, some of the hotels in Venice are accessible only by feet, once a person departs from the ferry, which cause an additional burden. Since our study is conducted on provincial level, tourists staying in Mestre, or any other place within the province of Venice, are covered as well. Our point estimates would be downward biased only if a tourist travelled from another province for a day to Venice and participated during that day in some entertainment activity.

¹¹ We have also tried to drop all provinces that have no sea access. It could be the case that traveling becomes more difficult through provinces that border the sea since further travel becomes eventually restricted to ferries. The estimates have been found once again to be consistent.

¹² We do not have however data on whether a visit occurred for the first time or whether it was a returning visit. Therefore investigation of this hypothesis is left for future study.

¹³ Many international tour organisers provide classical music tours to Italian places that played a role in the history of classical music. Note, that Italian provinces were the main center for classical music over a period of around two centuries during the Renaissance (Borowiecki and O'Hagan, 2012, O'Hagan and Borowiecki, 2010).

References

- Asero, V., and Patti, S. (2009), 'From wine production to wine tourism experience: the case of Italy', *American Association of Wine Economists Working Paper No. 52*.
- Ateca-Amestoy, V. (2008), 'Determining heterogeneous behavior for theatre attendance', *Journal of Cultural Economics*, Vol. 32, No 2, 2008.
- Barbieri, C., and Mahoney, E. (2010), 'Cultural Tourism Behaviour and Preferences among the Live-performing Arts Audience: an Application of the Univorous–Omnivorous Framework', *International Journal of Tourism Research*, Vol. 12, No 5, September/October 2010.
- Bodo, C., and Bodo, S. (2011), *Compendium. Cultural Policies and Trends in Europe*, Council of Europe/ERICarts.
- Bonato, L., Gagliardi, F., Gorelli, S. (1990), 'The demand for live performing arts in Italy', *Journal of Cultural Economics*, Vol. 14, No 2, 1990.
- Bonet, L. (2003). Cultural Tourism. In R. Towse (Eds.), *A Handbook of Cultural Economics* (pp. 187–193). Northampton: Edward Elgar.
- Bonn, M.A., Joseph-Mathews, S.M., Dai, M., Hayes, S., and Cave, J. (2007), 'Heritage/cultural attraction atmospherics: creating the right environment for the heritage/cultural visitor', *Journal of Travel Research*, Vol. 45, No 3, February 2007.
- Borg, J., and Costa, P. (1996), 'Cultural Tourism in Italy'. In G. Richard (Eds.), *Cultural Tourism in Europe* (pp. 156–169). Wallingford: CAB International.
- Borowiecki, K. J., and O'Hagan, J. (2012), 'Statistics on Classical Composers: Historical Patterns Based on Automatically Extracted Data'. *Historical Social Research*, Vol. 37, No 2, 2012.
- Boyd, S. (2002), 'Cultural and Heritage Tourism in Canada: Opportunities, Principles and Challenges'. *Tourism and Hospitality Research*, Vol. 3, No 3, February 2002.

- Bracalente, B., Chirieleison, C., Cossignani, M., Ferrucci, L., Gigliotti, M., and Ranalli, G. (2011), 'The economic impact of cultural events: the Umbria Jazz music festival', *Tourism Economics*, Vol. 17, No 6, December 2011.
- Brida, J. G., Risso, W. A., (2009), 'A Dynamic Panel Data Study of the German Demand for Tourism in South Tyrol', *Tourism and Hospitality Research*, Vol. 9; No 305, 2009.
- Castiglione, C. (2011), 'The Demand for Theatre. A Microeconomic Approach to the Italian Case'. *Working Paper No. 0911*, Trinity College Dublin (Ireland).
- Cellini, R., and Torrisi, G. (2009), 'The regional public spending for tourism in Italy: an empirical analysis'. *Munich Personal RePEc Archive paper*, No 16917, August 2009.
- Correia, A., Kozak, M., and Ferradeira, J. (2011), 'Impact of Culture on Tourist Decision-making Styles'. *International Journal of Tourism Research*, Vol. 13, No. 5, September/October 2011.
- Cuccia, T., and Rizzo, I. (2011), 'Tourism seasonality in cultural destinations: Empirical evidence from Sicily'. *Tourism Management*, Vol. 32, No. 3, June 2011.
- de Guzman, A.B., Leones, J.D., Tapia, K.K., Wonga, W.G., and Castro, B.V. (2006), 'Segmenting motivation'. *Annals of Tourism Research*, Vol. 33, No 3, July 2006.
- ENIT. Agenzia Nazionale del Turismo. (1992), *Istituto di Antichità ed Arte dello Stato, Anni 1984-1991*. Rapporto no 3.
- Formica, S., and Uysal, M. (1998), 'Market segmentation of an international cultural-historical event in Italy'. *Journal of Travel Research*, Vol. 36, No 4, April 1998.
- Garín-Munoz, T. (2009), 'Tourism in Galicia: domestic and foreign demand', *Tourism Economics*, Vol. 15, No 4, November 2009.
- Hughes, H.L. (2002), 'Culture and tourism: a framework for further analysis', *Managing Leisure*, Vol. 7, No 3, July 2002.

- Kim, H., Cheng, C., and O'Leary, J.T. (2007), 'Understanding participation patterns and trend in tourism cultural attractions', *Tourism Management*, Vol. 28, No 5, October 2007.
- ISTAT (2006), *Capacità e Movimento degli esercizi ricettivi*, <http://www.istat.it/it/archivio/10263>, accessed July 2011.
- ISTAT (2007), *Capacità e Movimento degli esercizi ricettivi*, <http://www.istat.it/it/archivio/10228>, accessed July 2011.
- ISTAT (2008), *Indagine sulle forze lavoro. Media 2007*, http://www3.istat.it/salastampa/comunicati/non_calendario/20080417_01/, accessed July 2011.
- ISTAT (2009), *Il Valore della moneta in Italia*, http://www3.istat.it/salastampa/comunicati/non_calendario/20090303_01/, accessed July 2011.
- ISTAT (2011), *Il reddito disponibile delle famiglie nelle regioni italiane. Anni 2006-2009*, http://www3.istat.it/salastampa/comunicati/non_calendario/20110202_00/, accessed July 2011.
- ISTITUTO G. TAGLIACARNE (1992), *Analisi del Livello di Turisticità dei Comuni Italiani*, Roma.
- Lynch, M.F., Duinker, P.N., Sheehan, L.R. and Chute, J.E. (2011), 'The demand for Mi'kmaw cultural tourism: Tourist perspectives', *Tourism Management*, Vol. 32, No 5, October 2011.
- March, R. (1997), 'Diversity in Asian outbound travel industries: a comparison between Indonesia, Thailand, Taiwan, South Korea and Japan', *International Journal of Hospitality Management*, Vol. 16, No. 2, June 1997.

- Massidda, C. and Etzo I. (2012), 'The determinants of Italian domestic tourism: A panel data analysis', *Tourism Management*, Vol. 33, No 3, June 2012.
- McKercher, B. (2002), 'Towards a classification of cultural tourists', *International Journal of Tourism Research*, Vol. 4, No 1, January/February 2002.
- McKercher, B., Ho, P.S.Y., and du Cros, H. (2005), 'Relationship between tourism and cultural heritage management: evidence from Hong Kong', *Tourism Management*, Vol. 26, No 4, August 2005.
- Ministério do Comércio e Turismo (1991), *Livro Branco do Turismo*. MCT, Lisboa.
- Ministero per i beni e le attività culturali (2011), *Visitatori e introiti di Musei, Monumenti e Aree Archeologiche Statali*, http://www.statistica.beniculturali.it/Visitatori_e_introiti_musei.htm, accessed July 2011.
- Murrillo Viu, J., Romani Fernández, J. and Surinach Caralt, J. (2008), 'The impact of heritage on an urban economy: the case of Granada and the Alhambra', *Tourism Economics*, Vol. 14, No 2, June 2008.
- O'Hagan, J. and Borowiecki, K.J. (2010) Birth location, migration and clustering of important composers: Historical patterns, *Historical Methods*, Vol. 43, No 2, April 2010.
- O'Hagan, J. W. and Harrison, M. J. (1984) 'Market shares of US tourist expenditure in Europe: an econometric analysis', *Applied Economics*, Vol. 16, No. 6, 1984.
- Ong, C. (1995), 'Tourism demand models: a critique?', *Mathematics and Computers in Simulation*, Vol. 39, No 3-4, November 1995.
- Papatheodorou, A. (1999), 'The demand for international tourism in the Mediterranean region', *Applied Economics*, Vol. 31, No 5, 1999.

- Richards, G. (1996), 'The Policy Context of Cultural Tourism'. In G. Richard (Eds.), *Cultural Tourism in Europe* (pp. 67–79). Wallingford: CAB International.
- Richards, G., and Binink, C.A.M. (1995), 'European Cultural Tourism Markets'. *Journal of Vacation Marketing*, Vol. 1, No 2, January 1995.
- Seaman, B. (2006), 'Empirical studies of demand for the performing arts', In: Ginsburgh, V., and Throsby, D. (Eds.), *Handbook of the economics of art and culture*. Elsevier. Amsterdam: Vol. 1.
- Società Italiana degli autori ed editori – SIAE (2006), *Annuario dello spettacolo*, http://www.siae.it/statistica.asp?click_level=3600.0700.0100.0400&link_page=Statistica_BibliotecaDelloSpettacoloDal2006.htm, accessed July 2011
- Società Italiana degli autori ed editori – SIAE (2007), *Annuario dello spettacolo*, http://www.siae.it/statistica.asp?click_level=3600.0700.0100.0400&link_page=Statistica_BibliotecaDelloSpettacoloDal2006.htm, accessed July 2011
- Stoddard, J., Davé, D., Evans, M., and Clopton, S.W. (2006), 'Economic impact of the arts in a small US county', *Tourism Economics*, Vol. 12, No 1, March 2006.
- Syriopoulos, T. C., and Sinclair, M. T. (1993), 'An econometric study of tourism demand: the AIDS model of US and European tourism in Mediterranean countries', *Applied Economics*, Vol. 25, No 12, 1993.
- Throsby, D. (2001), *Economics and culture*. Cambridge. Cambridge University Press.
- Tighe, A.J. (1986), 'The arts/tourism partnership'. *Journal of Travel Research*, Vol. 24, No 3, January 1986.
- Tohmo, T. (2005), 'Economic impacts of cultural events on local economies: an input-output analysis of the Kaustinen Folk Music Festival', *Tourism Economics*, Vol. 11, No 3, September 2005.

UNESCO. (2012), *World Heritage List*. <http://whc.unesco.org/en/list> (accessed on January 2012).

Valdani, E., and Ancarani, F. (2000), *Strategie di Marketing del territorio*, Egea, Milano.

White, K. J. (1985), 'An international travel demand model: US travel to Western Europe', *Annals of Tourism Research*, Vol. 12, No 4, 1985.

Wu, D. C., Li, G., and Song, H. (2011), 'Economic analysis of Tourism consumption Dynamics. A time –varying Parameter Demand System Approach', *Annals of Tourism Research*, Vol. 39, No 2, 2011.

Tables

Table 1: Definitions of entertainment variables

Macro-aggregate	Definition
Museums	Museums include data on public museums, monuments and archaeological sites. In 2006 in Italy there were 196 museums and 206 monuments and archaeological area.
Theatre	Theatre macro-aggregate is composed from theatre, opera, revue and musical, ballet, puppets and marionettes, performing arts and circuses. Circus was included in the macro-aggregate of theatre since the shows carried out in the last few years - especially at international level - have made use to stage sets and techniques that definitely draw inspiration from the theatre.
Concerts	Concert activities include classical concerts (band and choral concerts even if the repertoire may not be purely classical), pop music concerts and jazz concerts.
Exhibitions and shows	Exhibitions and shows, in addition to cultural exhibitions, shows the results of profit-making exhibition activities. This category includes the exhibition of goods to be sold (antiques, carpets, etc.) and trade fairs.
Dance and concertinos	Dance refers to dance with orchestra and dance with recorded music. Concertinos consist of musical performances (live or recorded) that are only an additional element to some other activities or entertainments, for example, live piano music in bars or restaurants.
Touring amusements	Touring amusement includes both single exhibitions and exhibitions inside amusement and leisure parks, as well as admissions to parks.
Sports	Sports consist of the following sub-categories: soccer (international; A, B, C and lower leagues), team sports other than soccer (such as basketball, volleyball, rugby and baseball), individual sports (boxing, cycle racing, athletics, tennis, showjumping, motor racing, speed boat racing and horse racing) and other sports (such as swimming and water polo, winter happenings and other sports).
Multi-genre	Multi-genre includes that may not be referable to a unique kind of event, like open-air shows on the occasion of village fairs or religious festivals.

Source: Museums data are provided by the Ministry of Cultural Heritage and Activities. Data on all other entertainment activities are provided by SIAE (the Società Italiana degli Autori ed Editori - Italian Authors and Publishers Association).

Table 2. Summary statistics for Italian provinces (2006-2007)

Variable	Observations	Mean	Std. Dev.
Panel A: Tourism Flows			
Total tourist arrivals	214	884'086	1'402'510
Total tourist stays	214	3'473'862	5'311'357
Italians tourist arrivals	214	491'250	545'628
Italians tourist stays	214	1'977'007	2'291'844
Foreign tourist arrivals	214	392'836	927'599
Foreign tourist stays	214	1'496'855	3'401'633
GDP pc	107	22'027.9	9'187.6
Population Size	107	557'189.6	636'710.1
Panel B: Entertainment Admissions			
Museums pc	152	0.597	1.964
Theatre pc	152	2.169	0.920
Concerts pc	203	0.140	0.099
Exhibitions and shows pc	107	0.423	0.303
Dance and concertinos pc	213	0.639	0.656
Touring amusements pc	94	0.328	0.957
Sports pc	204	0.252	0.317
Multi-genre pc	206	0.038	0.086

Source: Tourism data is obtained from the *Capacità e Movimento degli esercizi ricettivi* (2006 and 2007). Population data has been obtained from the annual survey on the labour force (Indagine sulle forze lavoro – ISTAT, 2007 and 2008). GDP data is taken from disposable household income in Italian regions (Il reddito disponibile delle famiglie nelle regioni italiane – ISTAT, 2011). See also Table 1.

Table 3. Entertainment admission and tourism flows. Dependent variable: Admission per capita

	Museums (1)	Theatre (2)	Concerts (3)	Exhibitions and shows (4)	Dance and concertinos (5)	Touring amusements (6)	Sports (7)	Multi-genre (8)
Panel A: Tourist arrivals								
Tourism flows (arrivals)	0.0765*** (0.0266)	0.0911** (0.0414)	0.00935** (0.00381)	0.0855*** (0.0323)	0.166*** (0.0597)	0.0753 (0.131)	0.0119 (0.0153)	0.00393 (0.00443)
Region controls	yes	yes	yes	yes	yes	yes	yes	yes
Price controls	yes	yes	yes	yes	yes	yes	yes	yes
GDP controls	yes	yes	yes	yes	yes	yes	yes	yes
Year control	yes	yes	yes	yes	yes	yes	yes	yes
Observations	152	152	203	204	213	94	107	206
R-squared	0.362	0.560	0.466	0.515	0.620	0.436	0.632	0.260
Panel B: Tourist Stays								
Tourism flows (stays)	0.00449 (0.00448)	0.0119 (0.00759)	0.000546 (0.000582)	0.0158** (0.00612)	0.0324*** (0.0107)	0.0115 (0.0240)	0.00212 (0.00318)	0.00114 (0.000811)
Region controls	yes	yes	yes	yes	yes	yes	yes	yes
Price controls	yes	yes	yes	yes	yes	yes	yes	yes
GDP controls	yes	yes	yes	yes	yes	yes	yes	yes
Year control	yes	yes	yes	yes	yes	yes	yes	yes
Observations	152	152	203	204	213	94	107	206
R-squared	0.338	0.549	0.451	0.512	0.628	0.433	0.631	0.265

Note: Robust standard errors are reported in parentheses. The dependent variable and tourism flows variables are expressed in per capita terms. Each specification contains controls for regions, year and price of each activity, and controls for the GDP of each province (not reported). ***/**/* indicate estimates that are significantly different from zero at 99/95/90 percent confidence.

Table 4. Entertainment admission and tourism flows by origin. Dependent variable: Admission per capita

	Museums (1)	Theatre (2)	Concerts (3)	Exhibitions and shows (4)	Dance and concertinos (5)	Touring amusements (6)	Sports (7)	Multi-genre (8)
Panel A: Domestic Tourists Arrivals								
Italian tourism flows (arrivals)	-0.0287 (0.0551)	0.185*** (0.038)	0.00505 (0.00518)	157.3*** (18.63)	0.347*** (0.0677)	0.228* (0.129)	0.0219 (0.0262)	0.0116 (0.00813)
Observations	152	152	203	204	213	94	107	206
R-squared	0.336	0.56	0.449	0.555	0.691	0.469	0.616	0.269
Panel B: Domestic Tourists Stays								
Italian tourism flows (stays)	-0.00726 (0.00964)	0.0251*** (0.00893)	-0.0006 (0.00087)	0.0260*** (0.00888)	0.0560*** (0.0137)	0.0229 (0.0295)	0.00367 (0.0046)	0.00232* (0.00134)
Observations	152	152	203	204	213	94	107	206
R-squared	0.338	0.546	0.448	0.54	0.667	0.441	0.616	0.273
Panel C: Foreign Tourists Arrivals								
Foreign tourism flows (arrivals)	0.224** (0.0939)	0.0684 (0.08)	0.0247*** (0.00815)	0.0830** (0.0376)	0.110* (0.0649)	-0.169 (0.257)	0.0121 (0.0186)	-0.00182 (0.00505)
Observations	152	152	203	204	213	94	107	206
R-squared	0.425	0.532	0.481	0.418	0.523	0.439	0.612	0.256
Panel D: Foreign Tourists Stays								
Foreign tourism flows (stays)	0.0360*** (0.0111)	0.0046 (0.015)	0.0039*** (0.00125)	0.0191* (0.00977)	0.0327* (0.0177)	-0.00957 (0.0611)	0.00188 (0.00509)	0.000378 (0.00112)
Observations	152	152	203	204	213	94	107	206
R-squared	0.373	0.529	0.464	0.421	0.535	0.428	0.612	0.256
All Regressions								
Region controls	yes	yes	yes	yes	yes	yes	yes	yes
Price controls	yes	yes	yes	yes	yes	yes	yes	yes
GDP controls	yes	yes	yes	yes	yes	yes	yes	yes
Year control	yes	yes	yes	yes	yes	yes	yes	yes

Note: See Table 3.

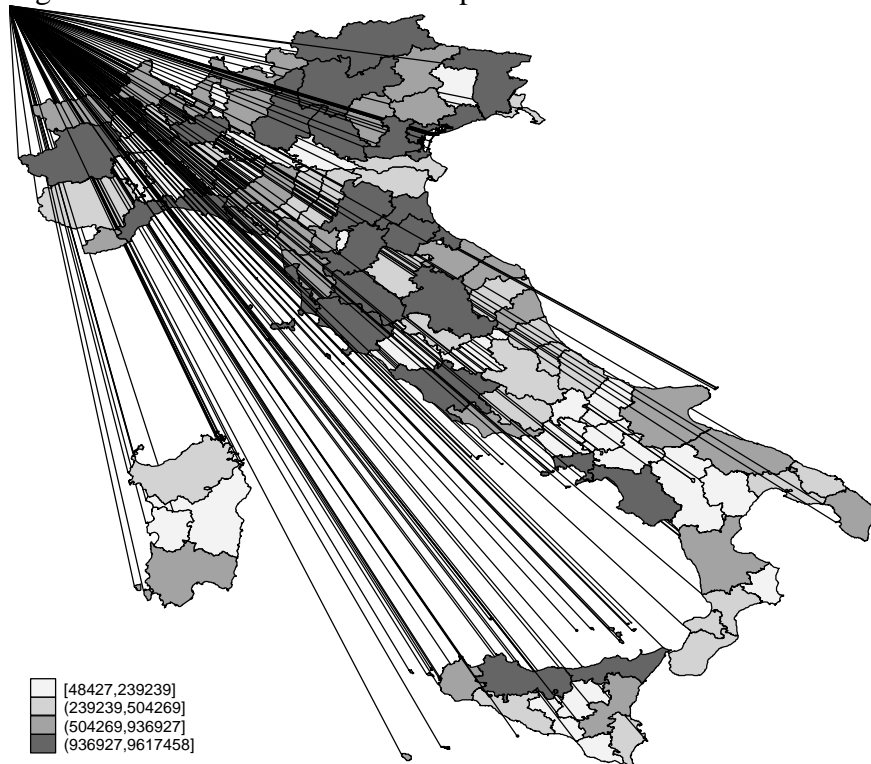
Table 5. Direct Revenue from tourist demand for cultural activities, per province

	Estimated admissions tourist	Average price of activity	Revenue from tourism flows	Share of total revenue
Museums	67'633	2.54	172'052	14.96%
Theatre	80'540	4.96	399'166	3.77%
Concerts	8'266	14.11	116'609	5.09%
Exhibitions and shows	75'589	3.9	295'143	14.14%
Dance and concertinos	146'758	9.26	1'358'571	11.97%
All cultural activities	37'8787	6.18	2'341'542	6.07%

Note: 'Estimated admissions of tourists' is calculated by utilising the point estimates obtained from the model and multiplying them by total tourist arrivals.

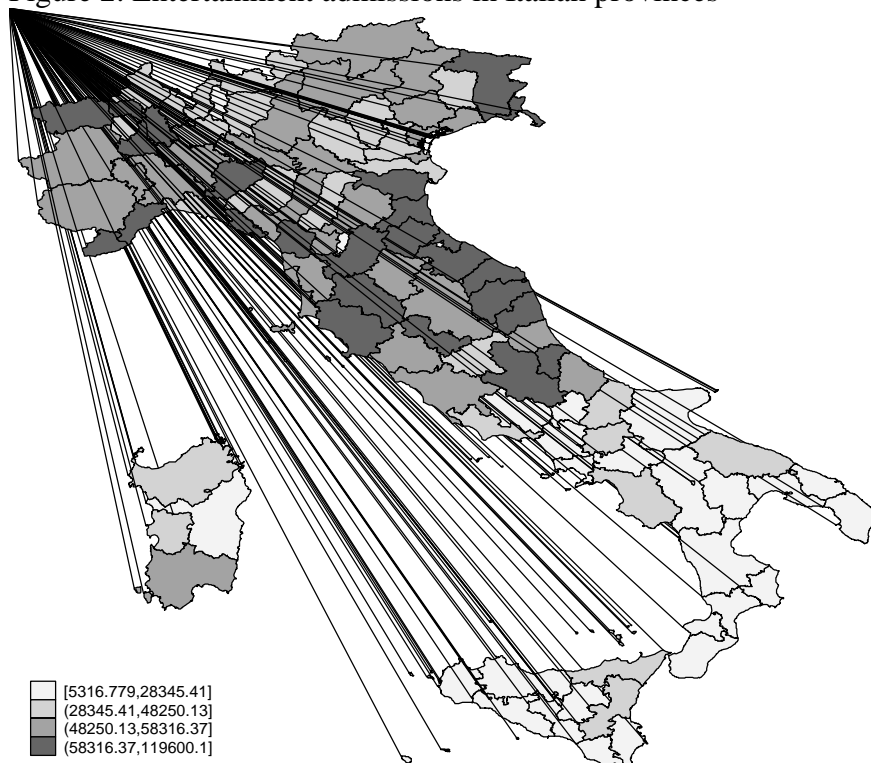
Figures

Figure 1. Tourist arrivals to Italian provinces



Note: The number of tourist arrivals is calculated as the average for the years 2006 and 2007.

Figure 2. Entertainment admissions in Italian provinces



Note: The number of admissions is calculated as the average for the years 2006 and 2007.

Figure 3. Entertainment admissions and tourist arrivals (Italian provinces, 2007)

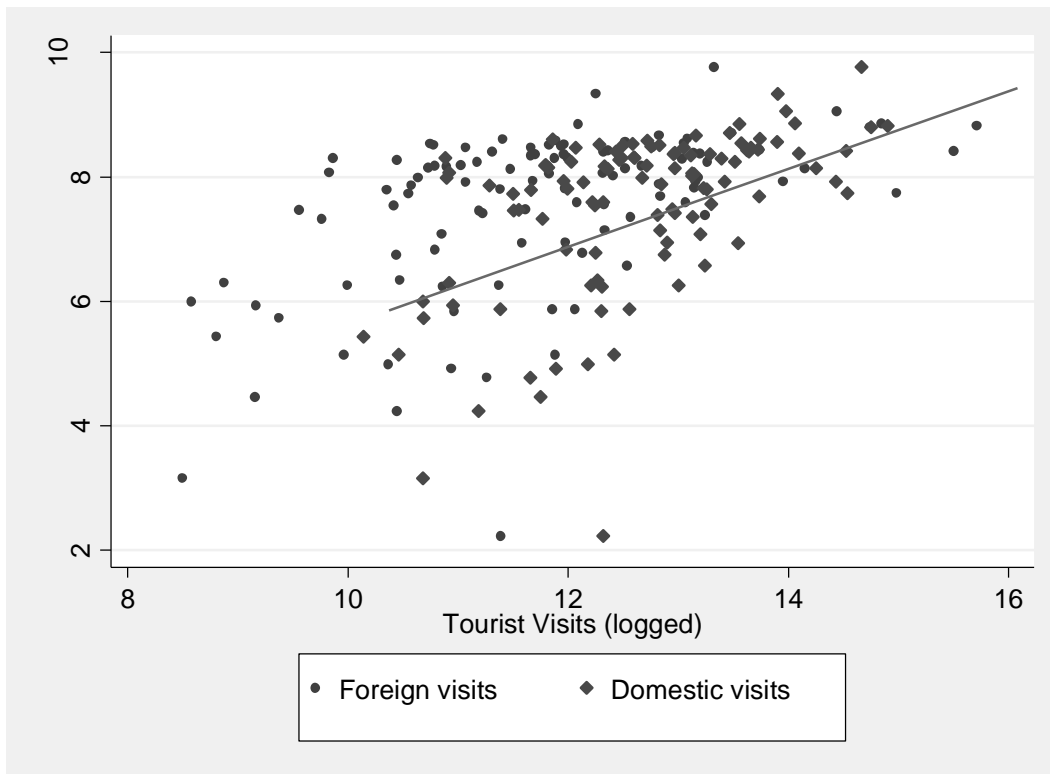
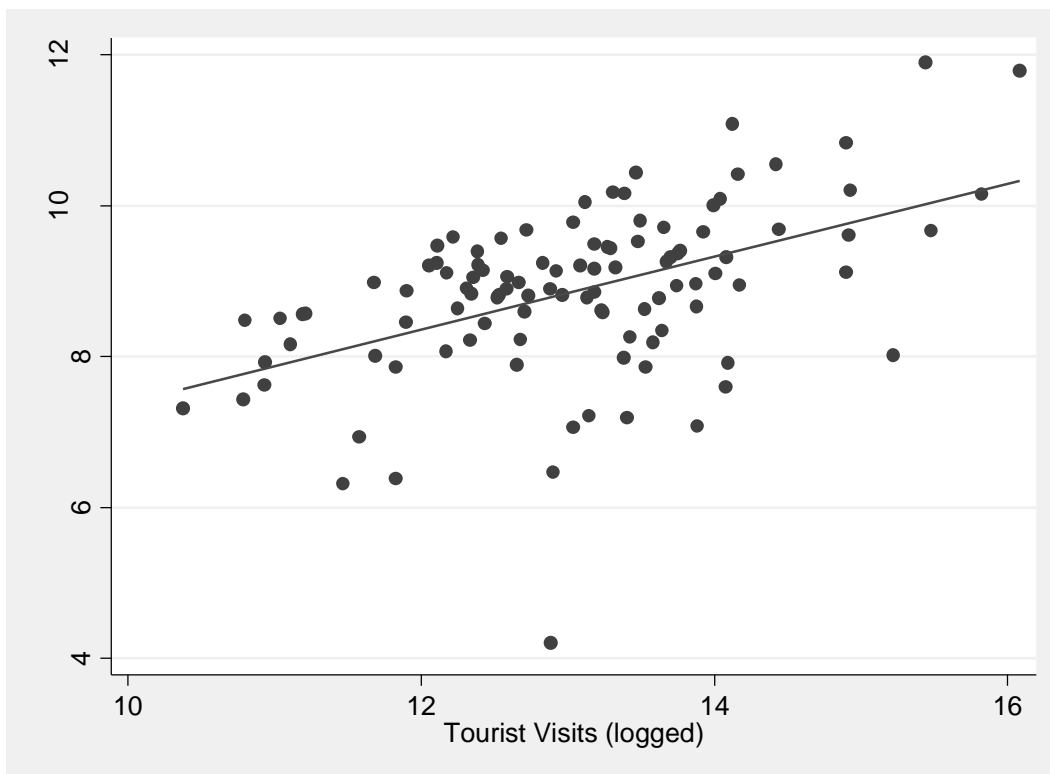


Figure 4. GDP and tourist arrivals (Italian provinces, 2007).



Appendix 1. Tobit Model: Entertainment admission and tourism flows by origin. Dependent variable: Admission per capita

	Museums (1)	Theatre (2)	Concerts (3)	Exhibitions and shows (4)	Dance and concertinos (5)	Touring amusements (6)	Sports (7)	Multi-genre (8)
Panel A: Domestic Tourists Arrivals								
Italian tourism flows (arrivals)	0.0911*** (0.0268)	0.0911** (0.0383)	0.00935*** (0.00358)	0.0863*** (0.0307)	0.166*** (0.0563)	-0.0617 (0.157)	0.0119 (0.0137)	0.00401 (0.00424)
Observations	152	152	203	204	213	94	107	206
Panel B: Domestic Tourists Stays								
Italian tourism flows (stays)	0.00902** (0.00412)	0.0119* (0.00701)	0.000546 (0.000548)	0.0161*** (0.00580)	0.0324*** (0.0101)	-0.0138 (0.0300)	0.00212 (0.00285)	0.00120 (0.000770)
Observations	152	152	203	204	213	94	107	206
All Regressions								
Region controls	yes	yes	yes	yes	yes	yes	yes	yes
Price controls	yes	yes	yes	yes	yes	yes	yes	yes
GDP controls	yes	yes	yes	yes	yes	yes	yes	yes
Year control	yes	yes	yes	yes	yes	yes	yes	yes

Note: The dependent variable and tourism flows variables are expressed in per capita terms. Each specification contains controls for regions, year and price of each activity, and controls for the GDP of each province (not reported). ***/**/* indicate estimates that are significantly different from zero at 99/95/90 percent confidence.