**Proximity tourism and cultural amenities: Evidence from a regional museum card**

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**Evidence from a regional museum card**

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## 1. INTRODUCTION

Over the last decades, cultural tourism has attracted growing consideration as a driver to boost the tourism potential of sites (Richards, 2018). A large body of literature has investigated the profile and motivation of cultural tourists (Stebbins, 1996; McKercher, 2002; Kim et al. 2007, Molinillo and Japutra, 2016), the role that museums and cultural heritage sites have on the attractiveness of destinations (Silberberg, 1995; Richards, 2002, Brida et al. 2012, Van Loon et al., 2014), and the controversial effects of tourism flows on the management and sustainability of cultural sites (Russo, 2002; Russo and Van der Borg, 2002). While cultural tourism broadly concerns the movement of persons to cultural attractions away from their normal place of residence (Silberberg, 1995), much research in this area has often overlooked the analysis of tourism flows and practices on the intra-regional scale. Even when scholars have analyzed the role of culture in tourism activities, they have generally focused on long-haul or inter-regional tourism flows (Massidda and Etzo, 2012; Richards, 2018).

Although major cultural amenities are usually concentrated in urban settings, museums and heritage sites are often spread over many rural and non-metropolitan areas and have been increasingly preserved and enhanced with the expectation to foster local development and territorial marketing strategies (Greffe et al. 2005). Yet, due to their relatively lower tourism potential (McKercher and Ho, 2006), the sustainability of these cultural institutions cannot rely only on incoming tourist flows, but often depends on the ability to attract visitors living in surrounding areas (Nuccio and Pedrini, 2014). As a result, museum attendance in these peripheral areas is mainly linked to daytrips (Downward, and Lumsdon, 2000; Wynen, 2013a and 2013b) and forms of so-called proximity tourism (Díaz Soria and Llurdés Coit, 2013;

Canavan, 2013; Jeuring, and Haartsen, 2017). Yet, what type of cultural offer in regional settings is able to attract residents from metropolitan areas or what profiles and motivation make those individuals engage in such proximate tourist practices remain two open issues.

This study sheds light upon these rather overlooked forms of tourism by investigating patterns of museum attendance by residents of metropolitan areas at near home destinations. Its empirical analysis relies on a unique dataset of visits to cultural institutions in the Piedmont region of Italy, performed during the 2011-2014 period by subscribersof a regional museum card, namely the "Abbonamento Musei Torino Piemonte" (AMTP). Regional museum cards targeting residents are an emerging marketing tool designed to develop and support cultural demand as they are created to foster repeated visits to museums and cultural heritage institutions. With more than 100,000 subscribers per year, the AMTP permits unlimited entry to more than 200 museums and heritage sites on an annual basis, and is probably the most successful initiative of this type in Italy[1].

. The information gathered by the card makes it possible to analyze the visiting behavior of subscribers and address the relationship between museum attendance and proximity tourism at the intra-regional level. In particular, we address the following research questions: Do urban dwellers visit cultural institutions in the region at all? What are their favorite sites and how often do they visit them? What is the main determinant of their choice to explore out-of-town cultural institutions?

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[1] Other remarkable experiences in Europe are represented by the Dutch Museum Kaart in the Netherlands (400 museums, about 1 million subscribers), the national Swiss Museum Pass (500 museums, about 50,000 pass-holders) and a three-country museum pass in the border regions of Germany, Switzerland and France (320 museums, about 45,000 passes).

In this perspective, our analysis questions also the extent to which regional museum cards for local residents can effectively promote regional destinations and increase visitor flows toward marginalized cultural amenities.

Our findings reveal that the demand for proximity tourism and same-day visits to museums is distributed over two main groups of institutions. A relatively small number of museums offering diverse and quality-driven cultural programs attracts about half of the visits, while residual trips cover a large number of minor heritage institutions. While this pattern is partly explained by differences in museum characteristics, differences in subscribers' characteristics and behavior explain the variation of the frequency of visits to both categories of institution.

This work contributes to tourism literature in three main ways. Both proximity tourism and daytrips are a rather unexplored perspective of cultural tourism and therefore we provide evidence to paint a profile of this kind of visitors, their visiting behavior and preferences for out-of-town cultural amenities in relation to their observed museum attendance at home and the habits formed through the use of the museum card. Secondly, from a methodological viewpoint, transactional data from museum cards enriches an emerging literature adopting a big data approach to tourism research (Li et al., 2018) and provides new insight into tourist behavior. Finally, the analysis addresses implications for cultural institutions and regional tourism policies. The article adds insights into strategies aimed at enhancing the demand of residents in metropolitan areas for within-region cultural amenities and at developing new opportunities for museums in peripheral regions.

The paper is organized as follows. In section two, we set our research at the convergence of certain major streams of literature on tourism and leisure. In section three, we present the regional context and the characteristics of AMTP and describe the patterns of museum visiting in terms of frequency, seasonality and inter-day variation. Section four tests different econometric models built on both personal and behavioral variables and discusses the robustness of our results. Finally, we extrapolate some major results and explain their policy implications for local authorities promoting museum cards.

## 2. RELATED LITERATURE

As our investigation concerns museum attendance through use of a museum card as a tourism practice on an intra-regional scale, it lies at the crossroads of three different strands of scholarly research. The first addresses the emerging interest in conceptualizing and empirically analyzing proximity tourism (Jeuring and Diaz-Soria, 2017), that is, a broad range of leisure activities and experiences that are consumed within the home region, often but not exclusively occurring through daytrips and excursions from metropolitan areas to rural peripheral territories. While these practices have often been overlooked in tourism research, proximity tourism is increasingly recognized for its role in fostering local development and reducing the gap between urban settings and inner areas (Salvatore et al. 2018). In particular, several scholars have highlighted how proximity tourism could reduce seasonality and dependence on long-haul tourism markets (Canavan, 2013), enable the promotion of community participation in territorial management (Diaz-Soria and Llurdes Coit, 2013) and provide new opportunities for tourism marketing and destination branding (Jeuring and Haartsen, 2017)..

Along this line of inquiry, Royo-Vela (2009) proposes the conceptualization of rural-cultural excursionists, an emerging phenomenon in many European countries characterized by trips to small rural villages rich in historical heritage and architectural harmony. Using evidence from Spain, the work investigates the profile and motivation of rural-cultural excursionists – adult, educated individuals willing to disconnect from urban life and discover new scenic places rich in natural and cultural amenities. More interestingly, using a survey conducted in the Province of Friesland, in the Netherlands, Jeuring and Haartsen (2017) explore residents' attitudes toward proximity tourism and preferences for their home province as a tourism destination. Their findings suggest a polarization of respondents between two opposite profiles exhibiting different sociodemographic characteristics and motivations. Respondents indicating a strong preference for a proximate vacation typically had a lower socioeconomic status and a higher age. Conversely, a second group indicating a preference for distant destinations resulted relatively younger, with higher income and educational levels and scarce participation in intraregional touristic activities. Also in this case, motivation for engaging in proximity tourism ranged from logistic reasons (i.e. accessibility, short travel time) to instances of proximity as experience, such as opportunities for discovering new places and encountering otherness nearby.

While the abovementioned group of works is useful for highlighting and contextualizing the relevance of proximate tourism activities, it does not explicitly address how these practices are associated with visiting behavior to museums and cultural sites at near home destinations.

With this perspective in mind, a second strand of literature to which our work is related refers to the study of the determinants and motivation of tourists visiting

museums. Drawing on studies on cultural participation, tourism research has usually focused on socio-demographic characteristics, cultural capital, income and time constraints to identify the profile of tourists who engage in cultural activities during their travels (Richards, 2002; Kim et al., 2007). However, since the seminal works of Silderberg (1995) and McKercher (2002), it has been pointed out how different motivations can contribute toward explaining museum visits by tourists and excursionists. More recently, Brida et al. (2016) identify two main attitudes in the consumption of cultural services, which they label respectively as light and heavy consumption. The former is the attitude of occasional museum attendance for recreational purposes and is more common during holidays, whereas the latter reveals a more intellectual form of attendance, which may imply choosing a destination or undertaking a trip explicitly because of the museum experience. Pulido-Fernández and Sánchez-Rivero (2010) offer a similar interpretation when analyzing the local demand for cultural tourism in medium-sized Andalusian towns. Using a latent segmentation approach, they identify three main profiles of tourists visiting such destinations: museum culturophiles, roaming culturophiles and cultural inactives. Museum culturophiles tend to be tourists and excursionists who travel to the destination mainly motivated by visits to the museums. Conversely, roaming culturophiles, although visiting museums when at destinations, give little importance to the tourism destination's offer of museums because the broader cultural and recreational experience offered by the place motivates them most.

These findings are particularly relevant for our analysis as they can provide insights into different motivations behind the propensity and frequency of visits to out-of-town museums. In particular, apart from individual socio-demographic characteristics, the question is whether habit formation and more frequent museum attendance in one's

own city (i.e. the high consumption attitude highlighted earlier) is associated or not with visits to cultural institutions in surrounding areas. A positive relationship between these two patterns would signal a strictly cultural motivation for visits to out-of-town museums. Conversely, a weakly positive or even negative relationship could indicate greater recreational value in such behavior.

Finally, from a methodological viewpoint, our work is in line with emerging literature in tourism research regarding mapping consumption behavior extracted from destination card data. While tourist cards and other passes are quite popular marketing tools in the tourism and cultural sector (Pechlaner and Abfalter, 2005), very little academic research has so far utilized this source of information to analyze revealed preferences or to map consumption behavior. Empirical works using transaction databases of visiting behavior offer novel opportunities to accurately analyze tourists' intra-destination movements (Zoltan and McKercher, 2014), to determine tourist profiles based on the type (and sequence) of activities attended (Scuderi and Dalle Nogare, 2018), or to analyze the spatial dependence of museum attractiveness (de Graaff et al. 2009). As increasing information about subscribers to destination cards and passes is recorded, the use of transactional data can be a valuable source of information complementary to survey-based approaches. Transactional data generated by destination and cultural cards in general may be flawed by a self-selection bias or, compared to surveys, they usually collect less sensitive information about the sociodemographic characteristics and preferences of the individuals observed. Yet, destination and museum card data also offers remarkable advantages as compared to other approaches. Firstly, as cards tend to allow free admission to tourist and cultural activities, the analyzed behavior is insensitive to the relative price of individual activities and, therefore, makes it

possible to better isolate individual preferences. Secondly, transactional data monitors any past choice of visit precisely, and researchers do not have to rely on self-reported accounts of past behavior. This latter point is pivotal to explaining the process of choice over time or testing how past consumption and learning by consuming affect actual choices.

3. LOCAL CONTEXT, DATA AND VISITING PATTERNS

Piedmont is a region of 4.3 million inhabitants, situated in North-Western Italy and sharing borders with France. Although the region is far from the country's celebrated heritage and cultural tourism destinations in Italy, the 2015 census on Italian museums and heritage sites (ISTAT, 2016) shows that Piedmont shares the largest number of museums and heritage sites with Tuscany and Emilia Romagna. This leads to a rich and heterogeneous cultural offer, consisting of 362 museums, 6 major archaeological sites and 59 monuments distributed over 263 municipalities. From a geographical point of view, Piedmont is a relatively monocentric region converging on the capital city of Turin, whose metropolitan area totals 2.2 million inhabitants.

This monocentric urban setting is also reflected in the geographical distribution and attractiveness of museums and cultural sites. The metropolitan museum system accounts for about one quarter of all the museums in the region and hosts some internationally renowned institutions, including, among others, the second largest Egyptian Museum after the one in Cairo, the Royal Palace and the Reggia di Venaria, former residences of the Royal House of Savoy, and the iconic Museum of Cinema. These are all popular tourist sites and venues of high-quality temporary

exhibitions. In 2014, the metropolitan museum system attracted about 4 million visitors, compared to just over one million visitors to museums in the other areas of the region. Conversely, and with few exceptions, museums in the rural and mountain areas of Piedmont are mostly small-to-very-small organizations that receive less than 15,000 visitors per year (OCP, 2014).

A peculiar characteristic of the Piedmont museum system is the regional annual museum card for residents (AMTP), which allows subscribers to visit almost all the museums and heritage institutions within the region free of charge. The AMTP was originally established in 1996 as a tool for audience development providing access to the main institutions of the metropolitan area of Turin. Over the following years, the card has included a growing number of museums, reaching more than 200 institutions in the region, and the number of subscribers has also steadily grown, with almost 100,000 cardholders in 2014, of which about 46% are residents of the city of Turin. The regional museum card has been offered at different rates, typically applying a third-type price discrimination based on subscribers' characteristics (elders, students, etc.) and additional membership conditions. For the period considered in our analysis, the most common rates are 28, 30, 44 and 49 Euro, the latter representing the regional museum card's full price.[2]

Data generated by cardholders represents the basis for our unique dataset of visits covering the 2011-2014 period. We restrict our analysis to visits by adult residents of Turin to 112 museums and heritage institutions outside the city. As Turin is the largest urban area in the region, this choice allows us to better identify proximate cultural tourism from a homogenous metropolitan area to peripheral cultural institutions. We observe the behavior of a large number of individuals who have

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[2] In a smaller number of cases, individuals have received the card without charge or for 10 Euro only, while special cards for patronage membership schemes have been sold for 150 and 500 Euro.

equal access to the same museum offer in their place of residence and, at the same time, equal opportunity (in terms of distance) to undertake out-of-town visits to areas where the museum system is considered relatively less attractive.[3] Visitors can access a heterogenous set of attractions, which range from the renowned Rivoli Castle contemporary art museum and the majestic Sacra di San Michele, the abbey that inspired Umberto Eco's setting of the Name of the Rose, through to the Wine Museum in the Castle of Barolo or the ecomuseum of Carmagnola, specialized in hemp studies.

The panel, consisting of 152,291 cards sold over four years to residents of Turin, offers a detailed record of more than one million visits made by 76,059 individual cardholders, of which 57% are female with an average age of 51. About 48% of the sample bought only one card over the period considered, but about 17% (=13,278 individuals) has renewed the card every year. While the museum pass records do not collect detailed information on subscribers' economic and social conditions, by using cardholders' addresses we can partly infer their socio-economic status from the area of residence. Based on market real estate data[4], about 50% of the sample lives in areas with an average property value lower than 2,000 Euro per square meter (mean of the observed variable), usually located in peripheral areas of the city of Turin, while only about 10% of the sample lives in central neighborhoods with property values higher than 2,600 Euro (two standard deviations).

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[3] We could extend our analysis to cardholders residing in other urban areas of Piedmont, but preliminary analysis of the data indicates that the out-of-town visits of these subscribers are mainly directed to the Turin metropolitan museum system, suggesting that the main driver of this behavior is the attractiveness of the museum metropolitan system.

[4] The variable is built upon appraisal rent and sale prices per square meter in the city of Turin. Data was collected in 2017 from a dedicated real estate appraisal service platform. Considering the relatively short period of analysis, residential values across neighborhoods in the city have not significantly changed.

Breaking down cardholders per year (Table 1), we find that the average price paid for the card fluctuates between 35 and 38 Euro. On average, cardholders make about 8 visits per year, out of which only one is outside Turin, and they choose between 5 and 6 different museums. Moreover, with regard to visits to out-of-town museums, their distribution is particularly skewed. Only about half of the cardholders uses the museum card outside Turin, while a relatively small number of subscribers repeatedly uses the museum card to explore regional cultural attractions.

TABLE 1 ABOUT HERE

Looking at the distribution of museums visited, as shown in the first part of Table 2, it is noteworthy that only five cultural institutions outside the metropolitan area attracted half of the out-of-town visits of cardholders from Turin. Conversely, the remaining 50% of visits is distributed across more than a hundred museums and heritage sites in the region. A deeper inspection of data reveals that over the sampled period the five top attractors are cultural institutions that regularly hosted high quality temporary exhibitions that are as attractive as those located in the metropolitan area.[5] Such a polarization is possibly indicative of distinct drivers and motivations for the visit to the two categories of museums and cultural sites by residents of Turin. On the one hand, the relative competitiveness of the regional museum system, when compared to the metropolitan one, induces individuals to access a restricted number of museums and sites outside Turin, attracted by the quality of their cultural offer. Attending a specific exhibition or collection displayed in a cultural institution outside the metropolitan area becomes the real driver of the trip

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[5] Except for one year, the top five attractors are always the same, namely Forte di Bard, Castello di Rivoli, Palazzina di Stupinigi, Castello ducale di Agliè (excpet 2011), Castello di Miradolo, Castello di Racconigi (2011)

and this behavior is consistent with the museum *culturophile* profile identified by Pulido-Fernández and Sánchez-Rivero (2010).

On the other hand, visits to minor regional museums may be explained by a desire to explore a less popular cultural heritage, often in combination with multi-purpose trips to rural destinations. The latter behavior may thus be closer to the rural-cultural excursion model depicted by Royo-Vela (2009).

The distinction between top attractors and minor heritage sites seems to be the most differentiating factor for explaining out-of-town museum attendance, while distance from the metropolitan area plays just a minor role in influencing visit decision. The second part of Table 2 displays the distribution of museums and visits in terms of distance. Firstly, the maximum distance of regional museums from Turin is about a three-hour drive, but 82% of these institutions lie no farther than a two-hour drive, making the museum offer in regional destinations easily accessible by daytrip from Turin.

Moreover, museums located within a 30 minutes time range have attracted about 18% of visits over the period of analysis, but these are mainly due to the presence of two top attractors in the city's surroundings, which cater for almost all the visits directed to this area. The majority of visits concentrates within the 1-to-2-hour distance range (73%), where the majority of museums and the remaining three top attractors are also located. In this case, visits to top attractors represent about 50% of total visits in the area. If we exclude the top attractors, differences in distance may partly explain visit patterns to out-of-town museums, but the effect is moderate. In fact, while the average number of visits per museum tends to decrease as distance increases, this pattern is not monotonic across distance ranges.

TABLE 2 ABOUT HERE

With regard to the intra-weekly variation of museum attendance, we find that visits to out-of-town museums are relatively more concentrated over the weekends and, in particular, on Sundays, when we observe about 46% of same-day visits to out-of-town museums against 37% in Turin. The data does not make it possible to determine whether the visits by residents of Turin have been made during daytrips or stem from weekend holidays and second-home tourism. However, analysis of intra-day variation in museum attendance indicates that visits to out-of-town museums are relatively more concentrated between the 12 a.m. to 3 p.m. time range. Considering the travel distance to reach the destinations where museums and heritage sites are located, such evidence seems consistent with a museum visit performed during a daytrip.

Visits to out-of-town museums also follow specific patterns in terms of monthly seasonality. More specifically, the rate of trips to out-of-town museums declines heavily during the period from November to February compared to museum attendance in the metropolitan area. Conversely, visits to out-of-town museums tend to be relatively more concentrated in the springtime (from March to May) and in the summertime (from July to September). Weather conditions, on the one hand, and the characteristics of the arts and cultural programs available in the local context, on the other, partially explain this pattern. For instance, in November Turin is typically rich in exhibitions and museum events, which are a strong attraction not only for cardholders.

4. ECONOMETRIC ANALYSIS

The core of our empirical strategy is to identify factors that account for the choice to visit museums and heritage sites outside the metropolitan area. We formulate the following linear model that aims to explain the frequency of visits to museums and cultural sites performed from the metropolitan area to the surrounding region:

$$y_{it} = \alpha + \beta\,Sex_i + \gamma Age_{it} + \lambda\,Valuezip_i + \eta Price_{it} + \theta Yearsubs_{it} + \vartheta Cityvisits_{it} + \varepsilon_{it}$$

(1)

where $y_{it}$ is the number of visits outside the metropolitan area of Turin by individual $i$ at time $t$, or, as alternative dependent variables, either the visits to top five attractors or minor heritage institution.

The first set of explanatory variables refers to individuals' socio-demographic characteristics and include gender, age and the average value of residential property in the postal code area where the individual resides (*Valuezip*).

According to the theoretical and empirical literature on cultural participation (Schuster, 2007; Kim et al., 2007, Falck and Katz-Gerro, 2016; Brida et al., 2016) the postulated effect of age on museum attendance is not clear-cut. The frequency of visits may increase with age, denoting a change in preferences and individual tastes over time, but the association may be non-linear due to the different opportunity cost of time for cultural leisure activities of some age groups (especially young and old).

As information on subscribers at the time of registration does not include education, income level or job qualification, we use the variable *Valuezip* as the only proxy for the individual's unobserved socio-economic status, in particular with reference to household's income (see for example Tammaru et al., 2018).

A second set of covariates relates to individual factors and behavior related to the museum card. As the museum card has different pricing schemes based on specific conditions (such as subscriber age, subscription renewal, purchase group or possession of other cultural passes), the variable *Price* is the amount paid by individual *i* at year *t*. All other things being equal, we expect that those who have paid a higher amount are more likely to use the card to visit museums, including those outside the metropolitan area. Additionally, we consider the number of years of past subscription to the museum card by individual *i* at year *t* (*Yearsubs*). This covariate aims to identify a process of habit formation and learning through frequency of museum attendance (Brito and Barros, 2005; Alderighi and Lorenzini, 2012), whereby the greater the number of years individuals have subscribed to the museum card, the more refined their taste becomes and the greater their interest in discovering heritage and museums in the region. The variable *Cityvisits* accounts for the number of visits to museums in town by individual *i* at year *t*. In this case, we test for a possible substitution or complementary effect between urban and rural cultural amenities.

Moreover, one may argue that the annual frequency of visits to out-of-town museums and cultural sites is also affected by their relative attractiveness in terms of exhibitions and cultural programs organized over the year. Such information on the supply side is not available in a structured and coherent way for the reference period. As an alternative strategy, we use year effects to control over time for changes in the attractiveness of the cultural offer of the metropolitan area in relation to the museums located in the surrounding region. Tables 3 reports the summary statistics of the variables used.

Taking our dependent variable only natural numbers, we use count data model, pooled at the cardholder level to account for multiple observations in different years generated by the same individuals.[6] In particular, we adopt as a main estimation strategy the zero-inflated negative binomial regression. This choice is supported by both empirical and theoretical reasoning. Zero-inflated count models (Cameron and Trivedi, 2005) are generally suitable in that they enable control of the excess zero value observations, and in literature they have been applied to analyze the determinants of the frequency of museum attendance (Ateca-Amestoy and Prieto Rodriguez, 2013; Brida et al., 2014; Brida et al., 2016) or multi-destination tourism trips (Santos et al., 2012). Zero-inflated models thus help to differentiate between two distinct processes regarding the decision to visit out-of-town museums. The first concerns the interest of cardholders in undertaking daytrips or holidays to explore cultural heritage sites in the surrounding areas, captured by the zero-inflated equation of the model. The second process determines the frequency of visits, conditioned by interest in out-of-town museums, and is estimated through count data regression.

From an econometric viewpoint, analysis of residuals supports the above considerations and, due to overdispersion in the data, indicates zero-inflated negative binomial regression as the models that better fit the data.[7]

Table 4 presents the results for both inflated and count data models under the three different specification of the dependent variables. Regressions 1, 3 and 5 report the estimates of the inflation logit model, assessing the effect of the covariates in

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[6] Because several covariates represent individuals' time invariant characteristics and due to little within-subject variability in the data for the period of analysis, an alternative approach would be random effect panel estimation. While the Breusch-Pagan test confirms the suitability of random effect, zero-inflated models, which we opted for with regard to our theoretical assumptions on individuals' behavior, are difficult to implement in panel data settings.

[7] Zero-inflated negative binomial displays a BIC and IAC of respectively 420,119 and 419,940 compared to the same measures for the Zero-inflated Poisson of 439,409 and 439,240.

explaining the zero value observations, i.e. the decision of subscribers to the regional museum card not to undertake trips to museums in the regional surroundings. The coefficients are in general highly significant (at 0.01%), except for age and the average price for residential property in zero-inflated equations when using different dependent variable specifications.

TABLE 3-4-5 ABOUT HERE

In order to interpret the sign and size of the effects of the coefficients, Table 5 reports the factor change in percentage value for the covariates.[8] Considering all the visits as dependent variable (regressions 1 and 2), being male has a positive effect on the decision and frequency of travel to out-of-town museums. The odds of female cardholders not visiting out-of-town museums is 18% more than that of male subscribers. At the same time, being male leads to a relative increase of 6.1% in the expected number of out-of-town visits, all other factors remaining constant.

With regard to age, this factor is not statistically significant in explaining differences between the decision to visit or not to visit out-of-town museums. However, the negative and statistically significant effect on negative binomial regression suggests that the expected frequency of visits to museums decreases with age at a rate of 0.3% per any additional year.

Interestingly, we find that socioeconomic status, as expressed by the residential property value of the area code in which the subscriber resides, has a negative

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[8] Using the results of the first model (Reg. 1), the variable *Sex* has a factor change in the odds of $e^{-0.207} = 0.813$, which leads to a percentage change of 0.813-1=18.7%. As for the negative binomial equation, the size of the coefficients can be interpreted by exponentiation of the estimated coefficient to get the so-called incidence rate ratio (IRR), that is, the factor change in the expected count of visits to out-of-town museums in a given year for a unit increase in the independent variable. Using the results of the first model (Reg 2), the variable *Sex* has, for instance, an IRR = $e^{0.0588} = 1.0605$, which leads to a change in the expected count of IRR-1 = 6.05%.

impact on both the decision to visit and the frequency of travel to out-of-town museums. More precisely, a 1,000 Euro per square meter increase in property value leads to a 22.8% increase in the probability of not visiting out-of-town museums and to a relative 19% reduction in the expected number of visits.

As expected, the price paid for the card positively influences both the decision to undertake museum visits and their frequency, suggesting that those who have paid more for the card tend to make the most of the possibilities it provides in terms of museum offer in the region. A difference of 10 Euro in the price paid for the museum card leads to a relative 13% decrease in the decision not to visit out-of-town museums and to a relative 6% increase in the relative expected frequency of trips.

Looking at the number of years of subscription and the visits to in-town museums, we find both factors have a positive effect. In particular, one additional year of past subscription to the regional museum card reduces by 5.5% the probability of not undertaking trips in a year, while having only a minor effect (1.9%) on the relative number of visits.

More importantly, we find a significant and sizable complementary effect between in-town and out-of-town visits: one additional visit to urban museums produces a relative 5.2% increase in trips and a 15% reduction in the likelihood of not visiting any out-of-town museum at all.

To better investigate the determinants of proximity tourism, we consider separately visits to the top five attractors outside the city of Turin (regressions 3-4) and those to the remaining cultural heritage sites of the region (regressions 5-6). A comparison of the sign and effects of the covariates on visits to these two sub-groups of museums indicates some diverging behavioral patterns, also in relation to behavior regarding overall trips.

Firstly, the effect of gender, which shows that men tend to visit more out-of-town museums, is even larger when only taking into account travel to the minor museums and heritage sites in the region. Similarly, age tends to negatively affect the likelihood of a visit and the frequency of travel to minor museums in the region compared to the main cultural attractors.

Interestingly, differences in socio-economic status seem to influence in different ways the decision to visit top museums and minor cultural sites. In particular, an increase of 1,000 Euro per square meter in property value strongly reduces the probability of visiting the top five out-of-town museums (28.6%), but it is not statistically significant in the decision to visit minor museums. However, living in richer areas of the city of Turin leads to a 25% relative decrease in the expected number of trips to this type of museum. From a similar perspective, the number of years of past subscription has a relatively stronger effect on the decision to travel to minor cultural sites compared to the most attractive ones (12% vs 3.1%).

## 5. DISCUSSION AND POLICY IMPLICATIONS

The analysis of visits to regional museums and heritage sites helps to unveil some distinctive characteristics of proximity tourism flows from urban settings to cultural amenities in regional surroundings. When compared to visits within the city of Turin, the frequency of visits to out-of-town destinations is relatively low, barely exceeding more than one trip per year per cardholder. This confirms that the metropolitan area, with its concentration and quality of museums and exhibitions, tends to capture the largest share of visits. As shown above, the concentration of trips over weekends and during the spring and summer time suggests that time constraints and weather conditions might partly explain the lower engagement in out-of-town visits. However,

data reveals that only around 50% of the cardholders in the sample undertakes trips

to these museums, and therefore we can infer that other factors affect the decision to

leave Turin for a same-day visit or for a longer stay in regional destinations.

In particular, the econometric analysis has shown relevant statistical inference for

three main traits, which significantly increase the probability of travel to non-

metropolitan destinations.

i.   Male vs. female. Unlike previous research, where a higher propensity for

museum attendance and cultural city trips among women was found (Falk and

Katz-Gerro, 2016; 2017), our results indicate that male cardholders are more

inclined to visit museums at out-of-town destinations. This effect is more marked

if one considers the visits to minor institutions compared to the main cultural

attractors. While we cannot rule out that this pattern depends on specific

preferences of the male audience, it is likely that other unobserved factors are at

play, like for example the higher male propensity to use private transportation (i.e.

cars) for trips (Masiero and Zoltan, 2013), which is probably the preferred

transport mode to reach museums in less accessible destinations in the

Piedmont region.

ii.   Centre vs. peripheries. A remarkable and counterintuitive effect concerns the

relatively higher probability of visits to out-of-town museums when a cardholder

lives in more peripheral and less affluent quarters of the city. This result partly

contradicts the common view of cultural tourists having a higher socioeconomic

status, but is in line with previous research showing that low income households

display stronger preferences for proximate tourist activities (Jeuring and

Haartsen, 2017). One possible explanation of this finding is that individuals living

in wealthier inner-city areas may have preferences for other activities during their

leisure time. Alternatively, if they express the same preferences for attending museums as people with lower socioeconomic status, we surmise that their lifestyle and financial resources would make national and international destinations more attractive and affordable.

iii. Loyal vs. occasional users. Cardholders with a longer history of subscription and a higher frequency of visits in Turin are also more likely to explore museum and heritage institutions in the surrounding areas. This is consistent with the process of cultivation of taste (Alderighi and Lorenzini, 2012), which typically encourages different forms of cultural consumption, but whose effects seem remarkably more relevant in our case when considering the propensity to visit minor museums and heritage sites. We can therefore claim that, at least on the supply side, some indirect network externalities are at work for frequent museum goers.

From a policy perspective, this set of results can be useful in order to promote strategies aimed at enhancing the demand of residents of metropolitan areas for in-region cultural amenities, expanding the scope of museum cards, usually limited to the city level, and developing new opportunities for out-of-town museums to target visitors coming from metropolitan areas.

In particular, our analysis reveals that, on the one hand, the frequency of visits within the metropolitan area has a stronger effect than card loyalty on the propensity to visit main cultural attractors in rural areas. This paints the profile of visitors mainly interested in the attractiveness of the offer, in the program of exhibitions and in the educational activities carried out by museums, regardless of their location in the region. On the other hand, the number of visits to minor museums is considerably dependent on individuals who have developed refined knowledge of and taste for regional heritage and tend to be frequent museum goers in their own city. The extent

to which it is possible to develop such a type of audience through regional museum cards remains an open question. For example, information on the educational level of cardholders - widely acknowledged as an explanatory factor of cultural participation could help to better explain the observed behavior and to design targeted promotion strategies

Although the available data and research design do not provide for definite counterfactual evidence, we tend to consider 50% of cardholders actually using the card outside Turin as an encouraging attendance rate. In other words, we suspect that, except for the top cultural attractors, without the card minor museums might not have attracted many of those urban visitors. In this perspective, the museum card can be an effective tool for pooling minor and isolated attractions in remote areas around a common theme. Places lacking in core attractors can exploit the advantage of a variety of smaller tourism products offered at a price lower than the sum of the single items. In other words, the co-marketing of different museums and heritage sites included in the card network attracts more visitors and rises incentives to organize a trip or a short holiday. Most of local destination management is not aware of the potential benefits of the card. As suggested by Huang et al. (2016), the next step is to create a "mixed rural tourism experience", not only catering for cultural motivations, but expanding to other activities related to sport, nature and local wine and food traditions. A deeper analysis of the characteristics of favorite destinations seem to confirm this approach. A large number of attractions is represented by castles and fortified buildings located in unique natural settings and most of them do not even display a permanent collection, relying instead on the evocativeness of the place. For example, among the five most visited attractions, the Fort of Bard organizes important photographic exhibitions and concerts in a stronghold with

breathtaking views that historically controlled the route to France. The ducal Castle of Agliè is a 16th century historical residence whose fame has boomed since it became the glamourous set of a popular Italian TV series.

Regional tourism destinations and cultural policies have often struggled to offer original leisure experiences by engaging in an unequal competition with major cities. A shift in the planning culture of regional tourism is more important than investing in yet another white elephant. As suggested by Salvatore et al. (2018), regions should adopt a systemic approach to local development and foster a "locally-based tourism", which could go beyond the idea that rural areas are just peripheral to a center. Therefore, marketing of proximity tourism should drop any reference to a hierarchy of tourism values and should, instead, stress the diversity of the available experiences and the challenge of exploring intra-regional destinations. At the same time, more research is needed to evaluate whether and how proximity tourism practices could trigger potential negative and unintended consequences for local communities in terms of congestion and displacing effects.

## 6. CONCLUSION

This paper addresses the nearly unexplored topic of proximity tourism and same-day visits to museums and heritage sites at regional domestic destinations and tries to identify the determinants of such a choice. The large dataset combining demographic information with the visiting behavior of over 76,000 museum cardholders over four years helped map significant intra-regional flows never studied before, and generally outrun in standard tourism statistics. Our results unveil a relatively original profile of the typical urban visitor to out-of-town museums: male, living in the less affluent neighborhoods of the city and a regular museum goer. On

the supply side, we show that card subscribers in urban settings are willing to visit iconic cultural amenities insofar as these institutions provide an inspiring and diversified cultural offer, while willingness to explore minor and less attractive museums is the result of a deeper process of refined knowledge of and taste for the regional heritage, also supported by loyalty to the museum card. This evidence has two major consequences in terms of policies. Firstly, proximity tourism can be sited within the multidisciplinary debate around the relationship between centers and peripheries, in particular with reference to how urban residents use and access cultural capital in remote or rural regional destinations. Spatially blind tourism strategies, mainly based on international flows and focused on global cities, failed to develop remote areas and to favor convergence between urban and rural settings. Since most regional destinations face a major issue in building a core tourism product, our analysis helps depict certain characteristics of actual urban visitors and understand their propensity to travel to these areas. Although our findings cannot be generalized, the pattern of trips between metropolitan belts and regional destinations is a promising and unexpected link that is worthwhile investigating for policy purposes.

Secondly, we indirectly explored the effectiveness of a regional subscription scheme as a driver for visits and collaboration across different attractors. We believe there is room for regional museum cards to address challenges and opportunities so as to develop remote destinations, promoting sparse heritage sites and cultural-recreational motivation. Even if unable to attract a high number of tourists and visitors on their own, minor regional museums and heritage sites may equally benefit from museum cards because of the cultivation of taste effect and the sense of belonging that such a marketing tool generates in loyal subscribers over the years.

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**Tables**

Table 1. Summary information on cardholders' visits per year

| Year | Cardholders | Average card price | Average visits | Average museums visited | Average visits in Turin | Average visits out-of-town | Distribution of cardholders per visits out-of-town (%): | | | | |
|------|-------------|--------------------|----------------|-------------------------|-------------------------|----------------------------|-------|------|------|------|------|
| | | | | | | | 0 | 1 | 2-3 | 4-5 | 6+ |
| 2011 | 34,628 | 37.9 | 8.1 | 5.9 | 7.1 | 1.0 | 55.3 | 21.7 | 16.2 | 4.5 | 2.3 |
| 2012 | 33,240 | 36.4 | 7.5 | 5.4 | 6.2 | 1.2 | 48.3 | 22.8 | 19.2 | 6.2 | 3.5 |
| 2013 | 39,297 | 35.1 | 7.3 | 5.0 | 6.3 | 1.0 | 56.8 | 21 | 15.2 | 4.7 | 2.4 |
| 2014 | 45,126 | 38.2 | 8.2 | 5.9 | 7.0 | 1.2 | 53.5 | 18.5 | 17 | 7 | 4 |

Table 2.  Distribution of visits to out-of-town museums by year, type of institutions and distance range

| Year | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|
| Visits to: | Top 5 attractors | Other cultural sites | Top 5 attractors | other cultural sites | Top 5 attractors | other cultural sites | Top 5 attractors | other cultural sites |
| Number of visits | 14,481 | 19,287 | 23,741 | 17,132 | 20,448 | 16,984 | 32.516 | 21,756 |
| % visits | 42.9% | 57.1% | 58.1% | 41.9% | 54.6% | 45.4% | 59.9% | 40.1% |
| Avg. n. visits per subscribers | 0.42 | 0.56 | 0.71 | 0.52 | 0.52 | 0.43 | 0.72 | 0.48 |
| | | | | | | | | |
| Distance range | <30 min | | 30 min-1 hr | | 1-2 hrs | | 2+hrs | |
| Number of institutions | 6 | | 8 | | 90 | | 12 | |
| Number of top attractors in the area | 2 | | 0 | | 3 | | 0 | |
| Number of visits | 30,414 | | 8,532 | | 122,817 | | 4,582 | |
| % visits | 18.3% | | 5.1% | | 73.8% | | 2.8% | |
| Share of visits to top attractors in the area | 89.8% | | 0 | | 52.0% | | 0 | |
| Average number of visits per museum (excluding top attractors) | 775.7 | | 1066.5 | | 677.5 | | 381.8 | |

Table 3– Summary Statistics

| VARIABLES | (1) N | (2) Mean (%) | (3) sd | (4) min | (5) max |
|---|---|---|---|---|---|
| Visits (all) | 152,291 | 1.092 | 1.802 | 0 | 77 |
| Visits (top 5 museums) | 152,291 | 0.599 | 1.175 | 0 | 26 |
| Visits (all except top 5) | 152,291 | 0.494 | 1.097 | 0 | 72 |
| Sex (Male) | 152,291 | *(42.3%)* | | 0 | 1 |
| Age | 152,291 | 53.81 | 16.33 | 18 | 90 |
| Price | 152,291 | 36.95 | 10.06 | 0 | 500 |
| Valuezip (1,000 euros) | 152,291 | 2.059 | 0.343 | 1.539 | 2.810 |
| Cityvisits | 152,291 | 6.664 | 5.930 | 0 | 236 |
| Yearsubs | 152,291 | 3.970 | 2.676 | 1 | 10 |
| Year2011 | 152,291 | *(22.7%)* | | 0 | 1 |
| Year2012 | 152,291 | *(21.8%)* | | 0 | 1 |
| Year2013 | 152,291 | *(25.8%)* | | 0 | 1 |
| Year2014 | 152,291 | *(29.6%)* | | 0 | 1 |

Table 4. Determinants of visits to museums 2010-2014, Pooled Zero-inflated Negative Binomial Estimation.

| | (1) | (2) | (4) | (3) | (6) | (5) |
|---|---|---|---|---|---|---|
| Dep. Var | All visits | | visits to top5 museums | | visits to other museums | |
| VARIABLES | Zero-inflated | Neg. Binomial | Zero-inflated | Neg. Binomial | Zero-inflated | Neg. Binomial |
| Male | -0.207*** | 0.0588*** | -0.0665** | 0.0615*** | -0.312*** | 0.0716*** |
| | (0.0401) | (0.0113) | (0.0263) | (0.0132) | (0.0854) | (0.0160) |
| Age | 0.00210 | -0.00343*** | 0.000434 | -0.00450*** | 0.0658*** | 0.00346*** |
| | (0.00183) | (0.000504) | (0.00103) | (0.000536) | (0.00999) | (0.000760) |
| Valuezip (1,000 euros) | 0.206*** | -0.211*** | 0.252*** | -0.110*** | -0.00573 | -0.295*** |
| | (0.0568) | (0.0167) | (0.0378) | (0.0193) | (0.143) | (0.0246) |
| Price | -0.0127*** | 0.00594*** | -0.00599* | 0.00792*** | 0.0342*** | 0.00834*** |
| | (0.00265) | (0.000779) | (0.00319) | (0.00147) | (0.00936) | (0.000973) |
| Yearsubs | -0.0551*** | 0.0183*** | -0.0319*** | 0.0356*** | -0.128*** | -0.0113*** |
| | (0.00829) | (0.00219) | (0.00517) | (0.00248) | (0.0229) | (0.00327) |
| Cityvisits | -0.163*** | 0.0505*** | -0.157*** | 0.0287*** | -0.138*** | 0.0556*** |
| | (0.00546) | (0.000973) | (0.00442) | (0.000969) | (0.0170) | (0.00161) |
| Constant | -0.215 | 0.0404 | 0.574*** | -0.581*** | -5.393*** | -0.796*** |
| | (0.197) | (0.0586) | (0.179) | (0.0882) | (0.911) | (0.0703) |

| Year Fixed effects | YES | | YES | | YES | |
|---|---|---|---|---|---|---|
| Observations | 152,291 | 152,291 | 152,291 | 152,291 | 152,291 | 152,291 |
| number of clusters | 76,059 | 76,059 | 76,059 | 76,059 | 76,059 | 76,059 |
| Log pseudolikelihood | -209816 | -209,816 | -149,540 | -149,540 | -137,192 | -137,192 |
| Wald | 4,144 | 4,144 | 2,650 | 2,650 | 3,045 | 3,045 |
| Prob > chi2 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Zero-inflated equation is a logit. Robust standard errors (adjusted for individual clusters) in parentheses: *** p<0.01, ** p<0.05, * p<0.10

Table 5. Effects of covariates, percentage values

| | All visits | | Visits to top 5 museums | | Visits to other museums | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Factor change in odds of no visits (zero-inflated) | change in expected count of visits | Factor change in odds of no visits (zero-inflated) | change in expected count of visits | Factor change in odds of no visits (zero-inflated) | change in expected count of trips |
| Male | -18.7 | 6.1 | -6.4 | 6.3 | -26.8 | 7.4 |
| Age | 0.2[a] | -0.3 | 0.01[a] | -0.4 | 6.8 | 0.3 |
| Valuezip (1,000 euros) | 22.8 | -19.0 | 28.6 | -10.4 | -0.6[a] | -25.6 |
| Price | -1.3 | 0.6 | -0.6 | 0.8 | 3.5 | 0.8 |
| Yearsubs | -5.4 | 1.9 | -3.1 | 3.6 | -12.0 | -1.1 |
| Cityvisits | -15.0 | 5.2 | -14.5 | 2.9 | -12.9 | 5.7 |

Notes: a- effect not statistically significant.