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How often to a museum? Motivations matter

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Abstract: Some recent contributions to the literature on cultural participation have highlighted the presence of previously disregarded motivations and the necessity of a refinement of the measure of cultural capital used in empirical analyses. However, the question of how motivation affects the frequency of cultural consumption has seldom been raised in a rigorous empirical setting. Here we use data collected in 2012 at Vittoriale, the most popular museum of the shores of lake Garda, a renowned Italian touristic destination, to investigate the issue. We apply Zero Inflated Poisson, in order to assess the influence of a set of selected variables on the number of museums visited in the last 12 months. We find that cultural capital, proxied by literacy, social status, proximity of supply and time constraints affect the number of visits to museums and arts exhibitions. We also find that the variables capturing a possible motivation effect, obtained as a result of a multiple correspondence analysis, are significant. We draw some new policy implications for museum managers.

Keywords: museums; cultural participation; econometric model for count data

1. Introduction

Tourists who occasionally consume cultural services while on a holiday are often mistaken for agents whose main motivation in choosing a holiday destination is its rich supply of cultural services. Some of

them are, on the contrary, a different type of sites and museum visitors, whose motivation is not necessarily cultural, but more, so to say, re-creative, and whose visits are occasional. While this evidence has been highlighted in a number of recent contributions directly (Prentice, Guerin and McGugan, 1998; Gil and Ritchie, 2009) and indirectly (Cellini and Cuccia, 2007; Alderighi and Lorenzini, 2012), the empirical literature focusing on the drivers of museum attendance does not appear, as yet, to have noticed it. Just like for theatre attendance, socio-demographic characteristics, cultural capital, income, time constraints and vicinity of supply have so far been considered as an exhaustive list of drivers of museum visits, but in fact, this has led to neglecting a possibly important determinant: motivation. Whether explicitly or implicitly, motivation has been considered to be totally determined by the traditional drivers, cultural capital *in primis*. Yet this dependence should be checked instead of being given for granted.

Here we consider the number of museum and exhibitions visited in the last 12 months by the visitors of Vittoriale, a museum located on the Garda Riviera, a famous Italian lake destination attracting beach ad open air activities lovers, and see how it relates to a number of personal characteristics. Our aim is to check whether motivation matters when it comes to museum visits; in other words, if it is possible to identify a significant motivation effect to this type of cultural consumption. To our knowledge, there is only a small number of published papers considering the role of motivation in cultural attendance and using econometric techniques (Frateschi et al., 2009, Brida et al., 2012, 2013); however, they investigate repeat visits to *the same* museum, not general museum attendance. We apply Zero Inflated Poisson to estimate the influence of a number covariates. The variables capturing a possible motivation effect are obtained as the result of a Multiple Correspondence Analysis applied to the answers to a question investigating the reasons for the visit to Vittoriale.

Our results show that motivation matters. MCA identifies two dimensions, which we label “light consumption” and “hard consumption”, the former being the attitude of those who visit museums with a more re-creational motivation, typically present during a holiday, and the latter the attitude of those who attend with a more intellectual motivation. Ceteris paribus, light consumption is found to be a significant covariate, and negatively affects attendance. We argue that this attitude is mainly characterised by compliance to a “must-do on holiday” list, and it is therefore not surprising to find a negative sign. The significance of the light consumption driver confirms that museum attendance is often by agents whose interest in cultural activities is only occasional. On the contrary, hard

consumption, clearly being dependent on cultural capital, which we control for, is not significant, as expected.

Aside from these findings, our analysis also reveals how pervasive the sociality aspect of museum visits is: ceteris paribus, those whose motivation is to accompany a partner, a friend or a group of friends tend to visit more museums. In line with Notten et al. (2013), we also use a literacy proxy, the information on the number of books read in the last year, to appropriately disentangle the effects of cognitive skills and education, thus distinguishing between a cultural capital effect and a social status effect.

The paper is organised as follows. Section 2 is a survey of the relevant literature; par. 3 presents the hypothesis we wish to test in detail; par. 4 discusses our model; par. 5 illustrates our dataset and the main features of Vittoriale, where the data were collected; par. 6 is about the estimation strategy; par. 7 shows and discusses our results; par. 8 finally concludes.

2. Related literature

Our investigation is on museum attendance. Hence, it mainly refers to the body of empirical research, within the cultural economics literature, focused on cultural participation and using survey data coming from museum visitors. However, the motivation effect we investigate derives from the literature on cultural tourism, so that our contribution may also be read as an attempt to intersect these distinct research areas.[1]

Within the cultural economics literature our contribution adds to some recently published research works characterized by a more accurate empirical strategy (count data models). Ateca-Amestoy (2008) uses Zero Inflated Poisson and Zero Inflated Binomial Model to check the determinants of theatre attendance in the US, using data coming from a large 2002 survey. Similar in spirit is Ateca-Amestoy and Prieto-Rodriguez (2013), where data are from the same survey but the focus is on jazz concerts and museum and art galleries attendance. Higher education, female gender, age 45-54 and income are

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[1] The heterogeneity of motivations for cultural participation has also been highlighted by some contributions by marketing scholars (Caldwell and Woodside, 2003) and sociologists (Roessl, 2011). These contributions highlight that issues such as sociality, relax and emotions may play an important role in shaping the attitude towards cultural services. As these are dimensions not necessarily related to cultural capital, these contributions add to the evidence against the idea of cultural participation as mainly driven by the latter, being it interpreted as in Becker and Stigler (1977) or Bourdieu (1984).

found to increase the probability to be a museum visitor; being retired and married to reduce it. As for the intensity of participation, gender is not a significant driver, but a number education measures are, as well as age, marital status, ethnicity, (different proxies of) time constraints and proximity of supply. Interestingly, the latter driver's estimated coefficient reveals that agents living far from museums (i.e. not in urban a areas) are more likely to go more often. A possible explanation is that visiting a museum is an activity one often chooses to do while on a holiday, and people living far from urban areas are more likely to go on a holiday to cities, where museums are often located.[2] This indirectly confirms that a large part of museum visitors are tourists, which makes museums and performing arts venues quite different with regard to their audience.

Whether museums themselves are the main motivation for the choice of a touristic destinations, or they are just the cherry on the cake, is a question that some recent contributions in the field of cultural tourism have considered. Cellini and Cuccia (2007) use a contingent rating analysis to indirectly elicit agents' preference structure and assess the role played by the presence of cultural attractions. In spite of the fact that they use data coming from on a self-selected sample (the visitors of an important archaeological site in Sicily), their evidence shows that, no matter an agent's socio-demographic traits, the weights for the cultural attribute is much lower than that of other attributes such as accommodation and seasonality. Alderighi and Lorenzini (2012) present a model in which a tourist maximizes her utility by buying both cultural and non-cultural services (open air activities and entertainment among others). Using data coming from a survey conducted in a famous Italian mountain destination, overall utility from a holiday is estimated to be more dependent on satisfaction generated by involvement in other activities (in particular, open air activities) than on the one derived from cultural participation; however, a large number of tourists do buy cultural services. While the authors claim this is the consequence of their intertemporal utility maximisation in a context of cultural capital accumulation (Stigler and Becker, 1977), we believe there is a possible alternative explanation. Being the survey conducted only on tourists, their frequent attendance is probably not informative of a general attitude, but of a habit just observable during their holiday, a time when their choices, as to the allocation of their time and budget, is likely to be markedly different from the one in their everyday life, because the context they operate in is different. Possibly cultural events are the only available option on rainy days

[2] *This may however be specific to the US context; elsewhere, and especially in Italy, museums are often present also in small towns.*

and/or at night, when a lot of substitutes (i.e. open air activities) are not available, and this may explain their success in terms of attendance.

A number of papers deal with the relationship between museum attendance and tourism flows. The common view gives it for granted that heritage and exhibitions are producers of positive externalities with respect to the hospitality sector, but a recent contribution, in which endogeneity is dealt with by selecting an appropriate estimation strategy, questions this statement. Applying dynamic panel data analysis on a dataset of 52 Italian provinces between 2003 and 2007, Di Lascio et al. (2011) analyse whether the number of art exhibition visitors affects contemporary and future tourism flows. They do find that the impact of exhibitions on tourism is present, but its size is extremely small.[3] Also Cellini and Cuccia (2013) challenge the common view and, using data on Italy in the time span 1996-2007, they find that causality goes from tourist flows to cultural attendance.[4] All this hints at the fact that, at least in Italy, true cultural tourists are a small segment of the general market demand for hospitality services, and the majority of holidaymakers choose their destination considering as preeminent some other attractors. However, while there, many are also likely to visit a museum. The authors conclude that tourism is among the determinants of museums' attendance, and neglecting it can cause a serious omitted variable bias.

Our analysis aims at contributing to the analysis of the drivers of museums' visits by considering how motivation affects cultural attendance, in the attempt to explain the paradox of agents who care little about culture but still visit museums while on holiday. Motivation has been investigated by researchers into tourism studies extensively, though with aims that are different than those considered here and range from satisfaction to actual learning during the museum visit. Gil and Ritchie (2009) consider how motivation affects a visitor's museum image, and how the latter influences her satisfaction. It emerges that in Gran Canaria, where their survey was conducted, museums' affective image (or emotional perception) does affect satisfaction, just like in Jeong and Lee (2006), but the affective image is itself determined by motivation just in some cases. The different motivations, obtained through a factor analysis, are richness in experience, socializing, love for exhibitions and holiday. Noticeably, the latter does not impact affected image. Notice that in this contribution, like in Prentice et al. (1998), "being on

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[3] When distinguishing between different types of art exhibitions, they even find a significantly negative coefficient in the case of ancient art.

[4] Cellini (2011) illustrates similar findings as to the question whether the inscription in the UNESCO list affects tourism attractiveness. Sound econometric analysis denies the existence, at the international level, of a causal relationship between cultural attractions and tourism flows, in contrast to previous evidence.

a holiday" is one of the possible answers to the survey's question on motivation. In a sense, this is a limitation, as it does not investigate the actual motivation of tourists.[5] On the other hand, it is interesting to notice that both in Prentice et al. (1998) and Gil and Ritchie (2009) "being on a holiday" is a very relevant dimension when it comes to segmentation or reduction of multidimensionality, because clusters/dimensions emerge in which this is the only relevant variable. In other words, though multiple answers are allowed, tourists often appear to be strongly characterized only as such, not by other possible motivations.

There is a second result that make the evidence in Gil and Ritchie (2009) particularly relevant here. They consider museums' cognitive image (or rational perception) as well as their affective one, and they find that it is a minor determinant of satisfaction. Among the determinants of the cognitive image there is a specific source of information, travel guidebooks. Typically, this is a source of information holidaymakers use. We interpret this as a sign that some of the tourists who visit museums tend to do so because they use guidebooks and tend to stick to their must-do lists.

3. Tourists as museum visitors: constantly occasional consumption.

A number of agents are characterised by the habit to frequently attend cultural events or museums in their everyday life, while a larger number of agents never do. The presence of a large number of agents who choose not to attend cultural events is well documented by the empirical literature, as noted by Seaman (2006), and finds a rationale in the theoretical contributions both of economists (Stigler and Becker, 1977) and sociologists (Bourdieu, 1984). The same contributions convincingly explain also constantly increasing and intense participation, respectively. Finally, in models in which preferences are dependent on previous experience, cultural consumption may resemble a random walk (Lévi-Gargoua and Montmarquette, 1996, Brito and Barros, 2005).

Constantly occasional cultural attendance, such as the case of agents visiting museums only once or twice a year, is more difficult to reconcile with those models and, maybe because of that, has never been a specific object of empirical investigation. We argue this attitude must be driven by motivations that are different in nature from those usually considered. In fact, it is typically the case of agents who visit museums only during their holiday.

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[5] *However, this shortcoming is mitigated by the possibility given to visitors to give multiple answers. Notice that in both contributions the sample was made up by both tourists and local visitors, in almost equal proportions.*

The proposal of a new theoretical set-up is beyond the scope of our contribution. Our aim here is just to point out that constantly occasional cultural attendance exists, and it is not a rare attitude. As far as museums are concerned, we would like to suggest that an important missing piece is the consideration of a non-negligible segment of demand coming from *occasionally cultural* tourists. One cannot be considered as a true cultural tourist just because she attends a cultural event during a holiday, unless that event is the reason (or one of the main reasons) for that holiday. For many holidaymakers, attendance has mainly to do with the temporarily large amount of leisure time they enjoy and the lack of alternatives – cultural consumption taking place in rainy days or in the evening are not substitutes to beach, hikes and other open air activities. Tourists are also agents whose allocation of time and budget happens in an unfamiliar environment, and may resort to guides and word-of-mouth in order to know more about the destination they stay at and choose their activities there. If the information they receive suggests museums as part of a must-do list, they are likely to consider a visit, in spite of the fact that this experience is not particularly rewarding to them. Finally, there may be a herd phenomenon, by which a true cultural tourist is followed in his choice to spend some time at a museum by friends and family, because they wish to take advantage of their holiday time to spend more time together.

All these considerations lead us to believe that the answers to a question on the motivations to the visit to a museum may reveal the type of attitude towards cultural participation, with a distinction between those mainly driven by intellectual motives, corresponding to the visitor's type traditionally identified by the literature, and those looking just for an entertaining activity, and that motivation is a good predictor of the frequency of cultural participation. We therefore consider here testing the following proposition:

Proposition 1: ceteris paribus, museum visitors driven by a re-creational motivation tend to visit less museums than those driven by an intellectual motivation. The former are in fact constantly occasional visitors, whose visits are likely to take place only during their holiday.

As those having a more intellectual approach to museums are generally agents endowed with a high amount of cultural capital, we expect that if both a proxy for cultural capital and one for intellectual motivation are in a model explaining frequency of attendance, either will turn out to be insignificant. This is summarized by Proposition 2:

Proposition 2: intellectual motivation has no impact on cultural participation if cultural capital is already accounted for.

The following paragraphs illustrates the model, data and empirical strategy we adopt to test these propositions.

4. Model

Our model considers museum visits as dependent on a number of drivers:

$$y_i = f(CK_i, x_i, z_i, s_i, tourist-type_i, m_i)$$

where *i* is a responding unit; CK is cultural capital; *x* is a group of socio-demographic controls, among which gender, age, education, profession, marital status; *z* is a set of economic status ad wealth related variables such as income; *s* represents a measure of proximity of supply; *tourist-type* is an individual characteristic expressing whether the agent is a tourist or an excursionist; and *m* is the class of variables expressing visitors' motivations.[6] A set of controls is necessary in order to isolate the motivation effect, and we have derived them from the contributions surveyed by Seaman (2006) and Frey and Meier (2006) as well as from Willis et al. (2012), a recent contribution on theatre demand. All of them are rather standard, apart from the proxies for cultural capital and proximity of supply.

Seaman (2006) claims that there is often ambiguity in the interpretation of the significance of the estimated coefficients of cultural attendance drivers. Notten et al. (2013) argue that the significance of education is particularly ambiguous, as this variable captures both cognitive ability, which is essential to the enjoyment of cultural consumption according to Stigler and Becker (1977), and Bourdieu's status effect (1984), by which attending to cultural events is mainly a means used by elites to highlight and perpetuate their privileged social condition. If a different covariate, capturing cognitive skills, is introduced, the latter are controlled for, and so education only captures the status effect; they therefore recommend to do so. We follow their suggestion and use, as a measure for literacy/cultural capital, the number of books read in the 24 months.[7]

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[6] *Travel costs are not considered, for the obvious reason that we are not considering the frequency of museum attendance with respect to a single museum, so there is no way to derive them. Entrance price is not considered, either, both because of lack of data, and for the arguments in Seaman (2006), who highlights that its estimated coefficient is not a reliable measure of price elasticity.*

[7] *The number of books read in the last 12 motnhs and the 12 months before last year have been checked as alternative determinants; estimation results are robust to changes in the time horizon considered.*

The geographical origin of visitors, expressed by the dummies North-East, Centre and South and Islands (reference category: North West of Italy) is our proxy for proximity of supply. In fact, Italy's population is unevenly distributed, with North West and Centre more populated than North East and especially South and Islands. Even more importantly, there are reasons to believe that in the latter area museum exhibitions are not so frequent. This has to do with the fact that there are less local private sponsors[8] and less tourism. So someone living in the South is more likely to have to travel a long distance to visit a museum.

As for the introduction of the difference between tourists and excursionists, we expect the former to be more likely to be beach and open air activity lovers, as this is what lake Garda is mainly famous for. But if we control for museum attendance motivations, as we do, our dummy is in fact a means for controlling for the other characteristics of the two types of visitors that possibly make them heterogeneous.

In line with Willis et al. (2012) we consider also the possible time constraints, related to family life, that may refrain an agent from cultural consumption. In particular, among the socio-demographic variables, we consider the number of members in the household and among the economic ones the number of income earners. The joint consideration of these two variables should capture the effect of the number of members who are either children or elderly, two categories possibly in need of time-consuming care by the rest of the family.

The motivation covariates, the sign and significance of which are our main interest here, are two dimensions obtained by the use of a multiple correspondence analysis and a variable expressing the social dimension of the museum visit. Before we describe them, it is necessary to introduce the dataset and the methodology used to work on it.

5. **Dataset**

[8] *In Italy there are no data on the geographical dispersion of private firms' cultural sponsorships, but firms are concentrated in the North and the North being richer, it is also more interesting for firms as a market. Also banking foundations ,which came into existence after public banks were privatised in 1992 and are by far the most prominent private spenders for culture , are mainly concentrated in the North, and their statutes allow them to spend almost only for the community in which they are located.*

The survey data we use have been collected at Vittoriale, the most popular museum of the shores of lake Garda, a renowned Italian lake destination mainly attracting beach lovers and bikers. Vittoriale is a magnificent villa set of Gardone Riviera, on lake Garda, surrounded by a large private park, and was the sophisticated home, in the first decades of the XX century, of decadent poet and patriot Gabriele D'Annunzio. It hosts a number of permanent collections (D'Annunzio's countless artistic objects of exquisite taste, his library, his military memorabilia), and temporary exhibitions.[9] Annual visitors of Vittoriale have been around 170.000 in recent years. They are mainly concentrated in the summertime, when the museum attracts both excursionists mainly coming from the nearby regions, and tourists, especially Italian holidaymakers.[10] The interesting feature of this museum with respect to the aims of our investigation is that it attracts a relatively high number of diversified visitors, from literature and exhibition lovers to tourists whose familiarity with cultural visits and events is scarce.[11] Though the collection and exhibitions require a lot in terms of cultural capital, the attractiveness of both the house and its premises are easily enjoyable by anyone.

The survey took place in summer 2012; 393 visitors were questioned face to face at the end of their visit. Due to the lack of apriori information about the target population, convenience sampling was used. Table 1 summarizes the main characteristics of the sample of visitors.

(table 1 about here)

Respondents were mainly young adults (54.45%), women (59.54%), with a middle-low income (63.36%), and coming from the North of Italy.[12] A noticeable percentage of them shows college education or more (40.71%); the joint reading of gender, income and education data reveals that a large number of visitors are teachers and white collars. The results of a survey conducted a year before the one here considered fully confirm this socio-demographic profile.

More than half of the sample has read at least four books in the last 12 months (53.94%), but more than one out of four has read two or less: a large number, considering the distribution according to

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[9] Vittoriale is rated 4,5 out of 5 by Tripadvisor (600 reviews in Feb. 2014).

[10] Foreign tourists are a small percentage of overall visitors; the Italians are more familiar, thanks to school programmes, to D'Annunzio's personality. School trips to Vittoriale, the participants of which are a high percentage of its visitors in the wintertime, are absent in the summertime.

[11] There is also an open air theatre within the premises, which hosts a renowned festival of high quality pop and jazz concerts every summer. The survey was however conducted only on visitors of the museum.

[12] The museum is located at the border between North-West and North-East of Italy. The survey was on all visitors, both Italian and foreign, but the number of foreigners who answered was so negligible that we exclude them from the analysis.

education. This hints at the fact that measuring education is not the same as measuring its effects in terms of cognitive skills and familiarity with the world of ideas, and it therefore makes sense to follow Notten et al. (2013) and consider literacy, here proxied by reading habits, as a measure for cultural capital.

As for our variable of interest, the number of visits to museums in the last 12 months (excluding the current one), a high percentage of people visited more than four (35.37%) but the number of those who visited one or two is only slightly smaller (31.55%), while few (14.76%) declared not to have visited any museum. In order to check for the persistence of cultural attendance attitudes, the survey also asked about the number of museum visits in the year previous to the last 12 months. Interestingly, the majority of the respondents who said that they visited one or two museums in the last 12 months had visited one or two also in the previous year (51,61%).[13] This evidence reveals that constantly occasional cultural attendance may not be ruled out, and may in fact be quite sizable.

The recorded motivations for attending the museum are "a specific interest (in Gabriele d'Annunzio)", "curiosity", "accompany friends or relatives", "learn something new", "professional interest", "visit a cultural attraction" and "spend free time and/or relax". The inclusion of these items was driven by the choice in this respect made by Prentice et al. (1998) and Gil and Ritchie (2009). Just like in these contributions, visitors were free to choose multiple answers. However, we would like to stress that motivations like "holiday making" or similar were excluded from the questionnaire. In fact, all respondents were excursionists or holidaymakers. The interpretation we can give to the evidence in Table 1 is that the recorded motivations clearly interpretable as "light" (free time and relax; visit a cultural attraction; accompany friends and relatives) appear not to characterise a large number of visitors. However, it is arguable that curiosity is classifiable as a light driver, and with its 39.19% this is the second most mentioned motivation.

It is important here to stress that we interpret the motivations to the visit to Vittoriale as a proxy for the motivation to the visit to any museum. This is in line with what is done in some similar published works: in Cuccia and Cellini (2007), for instance, the answers to the question on the willingness to pay for visiting a specific Sicilian archaeological site are used as information on a generic willingness to pay for visiting any heritage site.

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[13] *Some had visited none the previous year (35,48%) and very few more than two (12,9%).*

6. Methodology

We use an integrated approach, by which some of the regressors, in our case those expressing visitors' motivation, are obtained by the use of statistical tools aimed at avoiding collinearity and simultaneity problems. Though not yet a standard choice, the advantages of adopting this approach have recently become more evident, and it has been used in a number of recent contributions (Jeong and Lee, 2006; Gil and Ritchie, 2009). The reduction phase was however conducted there by the use of factor analysis; here we use Multiple Correspondence Analysis, since we dealt with categorical variables.

The first step of our analysis consists in trying to implode the motivation-related items into latent ones. The interpretation of the latter could reveal traits that would characterize all the single motivational items while deciding to visit a cultural attraction like museums. To this end, we adopt the Multiple Correspondence Analysis (MCA - Benzécri, 1992), a widely used approach to the analysis of categorical variables. It is an exploratory technique that allows to represent the relationships within a set of variables, starting from a contingency table. So called "latent factors" are extrapolated in order to convert numeric information of frequencies into multi-dimensional representation. Each dimension represents a latent factor, which is independent from the other ones. In addition, displaying the dimensions into the positive and negative semi-axes of the Cartesian plan, provides further semantic value to the interpretation of each dimension while projecting variables in it. The technique operates as follows. The initial data matrix of K variables with overall number of Q modalities, recorded on N individuals, is decomposed into the matrix Z of dimensions $N \times Q$, reporting a set of 1 and 0 respectively if an individual reports a given modality or not. The multiple correspondence analysis is the simple correspondence analysis applied to the matrix $\mathbf{B} = \mathbf{Z'\,Z}$. Computation procedures were done through the R software and based on the command MCA of the package FactoMineR (Husson et al., 2014).

After extracting and interpreting the main latent dimensions, and computing the row scores for these new variables, they were inserted among the covariates of a regression model. The response variable, that is the number of museums visited in the last 12 months, is a count one, for which appropriate models are required. Poisson or Negative Binomial regressions are the main choices (Cameron and Trivedi, 2005). However, due to the high number of respondents who declared they have not attended any museum, an appropriate alternative is required. Zero Inflated models (Cameron and Trivedi, 1998; Lambert, 1992) are correct choices inasmuch as they allow to control for the excess of zero. In the

museums-related literature, these models have been applied by Ateca-Amestoy and Prieto (2013) and, in the analysis of the determinants of the repeat visit to the same museum, by Brida et al. (2013). Given the set of dependent variables $\mathbf{w}_j$, surveyed on a set of *N* individuals with *i* being the generic statistical unit, the technique models the conditional probability to observe a certain value of the count variable by separating those who report zero from the remainder:

$$\mathrm{P}(Y_i = y_i \mid \mathbf{w}_i) = \begin{cases} p_i + (1-p_i)\exp(-\lambda) & \text{when } y_i = 0 \\ \dfrac{(1-p_i)\exp(-\lambda)\lambda^{y_i}}{y!} & \text{when } y_i > 0 \end{cases}$$

In the model, λ corresponds to both mean and variance. This model is the Zero-Inflated Poisson (ZIP), and it is appropriate when $\mathrm{E}(y_i \mid \mathbf{w}_i) = \mathrm{Var}(y_i \mid \mathbf{w}_i)$, that is in absence of overdispersion, In case overdispersion is found via a test, that is $\mathrm{E}(y_i \mid \mathbf{w}_i) < \mathrm{Var}(y_i \mid \mathbf{w}_i)$, alternative models such as the Zero Inflated Negative Binomial (ZINB) should be used. Using Vuong (1989) test, we compared the use of traditional Poisson model with ZIP, and ZIP with ZINB. In both situations, results indicated the appropriateness of ZIP for the present analysis.

7. Results

7.1 MCA

At first, the candidate variables to be inserted in the MCA analysis were the seven motivation-related ones – see Table 1. However, we then decided to leave out the item attributable to peer effect (i.e., "to accompany family/friends") because it was conceptually difficult to categorise it as a sign of either "light" or "hard consumption". Moreover, preliminary regression analysis showed it was a very significant driver,[14] so we opted to insert it as a separate covariate in our specification.

Results of MCA lead to retain the first two eigenvalues (47.3% of variance), i.e. those two explaining the biggest portion of total variance, each corresponding to the set of attitudes summarised in Table 2.

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[14] This is in line with Prentice et al. (1998), in which the most discriminatory motivation in the segmentation of visitors through cluster analysis is "family or social outing", which creates two cluster on their own summing up to 40% of the sample.

(Table 2 about here)

In the first case, motivation seems to be driven by the desire to "visit one of the cultural attractions of the area" (compliance to a must-do list) and "spend some free time". Apparently, there is also a "professional or research interest", but it is less pronounced than in the second identified dimension, and clashes with the fact that there is no "specific interest in D'Annunzio", so probably this research interest is rather superficial. In fact, generic "curiosity" is identified as a driver, while "to learn something new" appears to be more important than for the second dimension, as if there were awareness of a lack of general knowledge.

As for the second dimension, "to spend some free time" definitely does not characterise it, nor does generic "curiosity", while to "visit one of the attractions of the area" is much weaker. As for the other possible drivers, they appear to be prevalent and coherent: there is a strong "professional or research interest" and a "specific interest in D'Annunzio" as well as a "desire to learn something new". Interestingly, this dimension explains a much smaller percentage of the variance in the answers than the first one.

Our reading of this synthesis of the prevalent characteristics of our database, as to the answers to the question about the motivations to the visit to Vittoriale, is that, as expected, there exist two different attitudes marking cultural consumption by tourists at this museum. The first identifies a more re-creational attitude. We will label the first attitude as "light consumption", light meaning here re-creational, as if going to a museum were considered as a way to engage in some activity and avoid boredom, and the second one as "hard consumption", more typical of the visitor who visits with a real interest in the objects displayed. As anticipated, the motivations expressed with respect to the specific visit to Vittoriale are interpreted as general attitudes to museum attendance.

It is interesting to compare these results with those obtained by Gil and Ritchie (2009), who consider the relationship between motivation and satisfaction at museums in Gran Canaria, a similar context. Notice that, in their analysis, holidaymakers stand out as a single factor and "to learn" and "to be entertained" are integrated into just one dimension, which they label as "rich experience". Possibly this is the consequence of having a database in which a lot of residents were questioned. When only tourists are considered, entertainment and learning appear as two different dimensions of museum visiting. This is, in our view, in association with the presence of constantly occasional visitors among tourists.

7.2 Zero Inflated Poisson regression

Table 3 illustrates the results obtained by introducing light and hard consumption as possible drivers in our model explaining museum attendance. For the sake of better characterizing high levels of cultural capital, the list of covariates also includes an interaction term between "hard consumption" and number of books read in the last 24 months.

(Table 3 about here)

The first part of the Table reports the estimate of the Logit model. It assesses the role of the covariates in explaining the zeros. We highlight, however, that these findings don't actually capture the differences between the agents who visit museums and those who don't. This is because the respondents were visitors of Vittoriale, and the question was about the number of museums visited in the last year *except the current one,* so that zero represents "only one visit in the last year".

Out of the tested regressors, only four turn out to be significant. It emerges that the lower the number of books read, the higher the probability of visiting just once a year (*Books12*). Also, a high number of income earners in the household is positively related to very infrequent attendance, perhaps because of time constraints (*IncomeEarn*). Employed agents seem not to be highly involved (*OccEmp*). Finally, the positive interaction term (*Int*) suggests that the mix of reading and high "hard" motivation to attend positively affects infrequent attending, perhaps because they both deal with two time consuming experiences.

The second part of Table 3 shows the results of modelling the number of visits through Poisson regression, after controlling for zero-inflation.

The possible motivation effects are captured by the last four variables. The first is a dummy taking value one every time the respondent reveals that one of the motivations to the visit was to accompany someone (*Acc*). This highlights the importance of the social dimension of museum visiting. It is likely that this motivation has a greater impact inasmuch as one considers holiday-making respondents. In fact, a museum visit is an occupation someone travelling with family or friends like having together with them, as a way to share some time and experience something together, taking advantage of the relaxation from the working time constraints.

As for the other two motivation variables, they are the dimensions of "hard" (*HCons*) and "light" (*LCons*) consumption obtained by the use of MCA. Both Hypothesis 1 and Hypothesis 2 are verified: "light consumption" is a negative driver of museum attendance, while "hard consumption" has a significant positive sign. The significance of *LCons* is a particularly robust result, surviving the elimination of all insignificant drivers, which is evidence that our intuition of a link between light motivations and infrequent attendance is correct. Consistently with what obtained from the Logit model, the sign of the interaction variable (*Int*) is negative. This reveals that, the more an agent reads, the (slightly) weaker the impact of *HCons* on museum attendance (and vice versa), which is sensible if one considers that both reading and visiting a museum with a serious attitude are two time-consuming activities.

Most of the other drivers, derived from the literature on cultural attendance, are significant and, generally, have the expected sign. This is the case, for instance, of cultural capital (*Books12*). Its significance and positive sign are not surprising: cultural consumption brings more utility to those endowed with the ability to grasp culture's symbolic contents.

A number of socio-demographic controls, such as being a woman (*Women*) and married status (*Married*), do not appear to matter for the intensity of museum visiting. Such evidence partially confirms the one of Ateca-Amestoy and Prieto-Rodriguez (2013) where the same holds for gender but not for married status.

Seaman (2006) reports mixed evidence on the effect of age on cultural participation; our result confirms those contributions that recorded a positive impact. Age turns out to be significant, and its positive sign indicates that older age, ceteris paribus, increases museum attendance.[15] If literacy is only a proxy for cultural capital, possibly age captures other dimensions of an agent's endowment. An alternative view is that it is a matter of tastes: museums' supply is not so attractive for the younger generations.

The proxies for formal education (*EduHS, EduUniv*) are both highly significant, though, surprisingly, with a negative sign. The significant and negative signs are not supportive of the status effect highlighted by Bourdieu (1984) as a driver of museum visits. However, previous estimations (available

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[15] *Age square is never significant when introduced as an extra regressor, revealing a linear relationship between age and museum attendance.*

upon request) showed that the exclusion of *Inter* changed these effects to positive, though the sole *EduUniv* was significant. This reveals that this evidence is not robust.

As for a visitor's type of occupation, the reference category is "housewife or retired", that is those who have negligible time constraints related to working hours. The evidence shown by other categories confirms the role both of of occupation and of the related time constraints; in fact, self-employed (*OccAut*) and employed (*OccEmp*) agents tend to visit museums less often, while students (*OccStu*), visit significantly more often.

As in many works on cultural consumption, income is only marginally significant, here in just one case, namely at low levels (*Income2*), with the expected negative sign. On the contrary, the coefficient of the number of income earners in the household (*IncomeEarn*) is significant and positive. This, together with the fact that the household members are significantly negative, may capture the relevance of household-related time constraints on the frequency of cultural participation. Similarly, Willis et al. (2012) find that theatre attendance is negatively influenced by the number of dependent children. If we read this evidence jointly with the results on *OccEmp* in Logit model, it can be interpreted as follows. When time constraints for household members increase, people find very little time for attending museums. However, those who decide to attend are likely to be frequent visitors.

The reference variable for proximity of supply is the dummy North West, and, as expected, we find that both North East (*NutsNE*) and South and Islands (*NutsSI*) have significantly negative coefficient. So not just the characteristics of the individuals, but also some aspects of the supply side of the market are relevant. Our analysis finds no distinction in the attendance patterns of excursionists and tourists instead (*Overnigh*t).

All in all, our evidence confirms previous contributions on the relevance of the standard socio-demographic and economic covariates, but it highlights that, even controlling for them, individual motivations to the visit matter. Those who approach museums with the aim to spend some pleasant time, and not so much with a deep interest in the objects displayed, tend to visit less. This may be due to their complying with a "must-do on holiday" list, and/or to the presence of a number of alternative activities satisfying their needs. The very choice to go to a museum instead of riding, hiking or simply having a walk might be due to the temporary unavailability of those substitutes due to the weather or the time in the day.

8. Conclusions

In most contributions investigating museum attendance it is often taken for granted that the drivers of museums' visits are the same as those of theatre attendance, which is however arguable. Performing art events and museums provide the attendant with different experiences. The interaction between cognitive psychology and visitor studies has produced some interesting research on museum fatigue (Serrel, 1998; Davey, 2005). There are different temporal and environmental contexts to consider. In everyday life a museum visit may seem to some people too tiring an experience to live, while on a holiday, when they are more relaxed, have free time and look for activities to share with their family/friends, a museum visit may come to mind, especially if no other alternative is available, like in rainy days. Museums are therefore the destination not just of agents interested in the symbolic contents their collections may convey, but also of holidaymakers who are constantly occasional consumers of museum services. In focusing here on the role of motivation in determining museum attendance, we have found evidence that a "light consumption" attitude is associated with less frequent visits to museums, which is coherent with the above argument. A more serious approach to museum visiting has a positive impact on attendance instead, even after accurately controlling for the endowment of cultural capital, proxied by the number of books read in the last year.

Motivation is itself a driver needing further investigation: what are the deep drivers of motivation? This further step is beyond the scope of this contribution. However, the very fact that motivation is found to be significant, ceteris paribus, i.e. controlling for all the determinants traditionally considered by the literature on cultural participation, is itself an interesting result. In fact, it reveals that that the set of covariates considered so far are far from being sufficient in understanding museums' attendance, and constantly occasional visitors are a non-negligible segment.

The evidence we show and the interpretation we give of it also raise new perspectives from the point of view of museums' policy. Clearly, museums face a multi-faceted demand, and they must be careful in catering to all segments without causing one crowding out the other. In this sense, the contents of the core service they supply is relevant. Museum curators have already realized that exhibitions are the solution to the problem, as they can attract both art lovers and agents only interested in them as fashionable events. But, in order to provide occasional visitors with a satisfying experience, even more important are opening times, quality of non-core services (bookshops, cafés and restaurants), easy-to-read short bookguides to exhibitions in addition to the classic coffee table book, etc. In addition, our

evidence showed the positive impact of peer-effect, which might be encouraged by discounted tickets for groups and families, or in general promotional policies that would involve groups of people. Clearly, these improvements have costs, and in the case of a fixed budget, they could take place at the expense of the core missions of museums, namely conservation and education. This is particularly likely when these costs are not investments, as in the case of the opening of a café in a museum, but running costs, as in the case of longer opening hours. Indeed, the trade-off between the core cultural mission and the creation of an attraction for a vast audience has to face the reality of conservation and maintenance costs. As the improvements to non-core services would benefit particularly the local tourism sector, museum directors could devise schemes for its financial involvement. Clearly, incentives may constitute a problem, as free riding is an issue in this context of positive externalities. Also, hotel-owners could object that it is them bringing visitors to the museum, not the contrary. But after all, even if a museum visit is, for many tourists, just the cherry on the cake, they often do buy it and it is part of the overall holiday experience.

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Table 1 – Sample descriptive statistics

Age	
18-24	*12.21*
25-44	*42.24*
45-64	*39.95*
>64	*5.60*

Gender	
Male	*40.46*
Female	*59.54*

Education	
Primary or secondary school	*13.49*
High school	*45.80*
College or more	*40.71*

Net household income, Euro	
Up to 20,000	*15.01*
20,001-40,000	*63.36*
40,001-60,000	*8.91*
More than 60,000	*3.82*
NA	*8.91*

Motivation	
Curiosity	*39.19*
Specific interest in GDA	*67.68*
Accompany friends/relatives	*18.58*
Learn something new	*13.23*
Professional interest	*5.60*
Visit cultural attractions	*5.34*
Spend free time/Relax	*7.89*

No. of museums/exhibitions visited in the last 12 months	
None	*14.76*
One-two	*31.55*
Three-four	*17.56*
More than four	*35.37*

No. of museums/exibitions visited the year before	
None	*22.90*
One-two	*30.79*
Three-four	*11.96*
More than four	*32.82*

No. of books read in the last 12 months	
None	*9.41*
One-two	*18.32*
Three-four	*17.56*
More than four	*53.94*

No. of books read the year before	
None	*10.18*
One-two	*22.14*
Three-four	*11.45*
More than four	*54.71*

Origin	
North-West	*44.02*
North-East	*29.77*
Centre	*14.50*
South and Islands	*6.36*

Table 2 – MCA: variables and column coordinates along the extracted dimensions

Variable	*Dim.1*	*Dim.2*
Curiosity (No)	*-0.32615084*	*0.1643674*
Curiosity (Yes)	*0.50616915*	*-0.2550897*
GDAInter (No)	*0.99400097*	*-0.5253039*
GDAInter (Yes)	*-0.47457941*	*0.2508030*
Learn (No)	*-0.25976912*	*-0.1700048*
Learn (Yes)	*1.70348598*	*1.1148389*
ProfesInter (No)	*-0.09482359*	*-0.1506547*
ProfesInter (Yes)	*1.59907048*	*2.5405866*
CultAttr (No)	*-0.12525298*	*-0.0298212*
CultAttr (Yes)	*2.21876706*	*0.5282613*
FreeTime (No)	*-0.12343022*	*0.1832858*
FreeTime (Yes)	*1.44134641*	*-2.1403057*
% of explained variance	*28.1*	*19.2*

Table 3 – Zero Inflated Poisson: estimation results

Variable		*Logit*		*Poisson*		*Marginal Effect*
	Label	*Coeff.*	*S.E.*	*Coeff.*	*S.E.*	
	(Intercept)	*-1,50753*	*1,33995*	*1,42043* ***	*0,18017*	
No. of books read in the last 24 months	*Books12*	*-0,09504* ***	*0,02897*	*0,00872* ***	*0,00079*	*0,05326*
Overnight stayer	*Overnight*	*-0,21985*	*0,38206*	*0,00473*	*0,05514*	*0,05155*
Yearly income, Euro 20,001-40,000	*Income2*	*-0,00349*	*0,46648*	*-0,12190* *	*0,06762*	*-0,56492*
Yearly income, Euro 40,001-60,000	*Income3*	*-1,00293*	*0,98172*	*0,06114*	*0,10185*	*0,41867*
Yearly income, > 60,000	*Income4*	*-24,17327*	*442942*	*0,18604*	*0,18805*	*4,11899*
No income declared	*IncomeMiss*	*-12,06077*	*358,5*	*-0,62702* ***	*0,16854*	*-1,28374*
No. of household members	*Nhousmemb*	*-0,21719*	*0,22114*	*-0,14268* ***	*0,03003*	*-0,63253*
No. of income earners in the household	*IncomeEarn*	*0,91721* **	*0,37482*	*0,18906* ***	*0,05864*	*0,75336*
Married	*Married*	*-0,58188*	*0,43030*	*-0,02515*	*0,06765*	*-0,03829*
Occupation: Autonomous worker	*OccAut*	*0,04596*	*0,61109*	*-0,19439* **	*0,08785*	*-0,90785*
Occupation: Student	*OccStu*	*-0,78529*	*0,93220*	*0,65802* ***	*0,13341*	*3,15786*
Occupation: Employee	*OccEmp*	*-0,91658* **	*0,52354*	*-0,20400* ***	*0,07631*	*-0,82273*
Education: at least high school	*EduHS*	*-0,06913*	*0,38503*	*-0,17606* ***	*0,05445*	*-0,80730*
Education: at least university	*EduUniv*	*-0,80945*	*1,75377*	*-0,43194* ***	*0,15431*	*-1,89441*
Age in years	*Age*	*0,00769*	*0,01804*	*0,00882* ***	*0,00263*	*0,03985*
Gender: woman	*Women*	*0,53218*	*0,41987*	*0,02552*	*0,05204*	*0,04668*
Living in the North-East of Italy	*NutsNE*	*0,15168*	*0,41367*	*-0,24554* ***	*0,05946*	*-1,15931*
Living in the Centre Italy	*NutsC*	*-0,46919*	*0,61346*	*-0,09311*	*0,07383*	*-0,36865*
Living in South Italy, Sicilia or Sardinia	*NutsSI*	*-0,53673*	*1,92823*	*-0,47300* ***	*0,13663*	*-2,12160*
Visits the museum with peers	*Acc*	*-0,11255*	*0,47032*	*0,23900* ***	*0,06240*	*1,12369*
Motivation: "Light" cultural consumption	*LCon*	*0,13077*	*0,38917*	*-0,17563* ***	*0,05230*	*-0,83223*
Motivation: "Hard" cultural consumption	*HCon*	*-0,76907*	*0,53635*	*0,18932* **	*0,08404*	*0,98170*
Interaction: "Hard" cultural consumption with No. of books read in the last 24 months	*Int*	*0,07517* **	*0,03057*	*-0,00349* **	*0,00173*	*-0,02631*

*Significance: *** p<0.01; ** p<0.05; * p<0.1. Reference categories: Less than Euro 20,001 yearly income, same-day visitor, low income, declaring income, non-married, housewife or retired, primary or secondary school, male, living in the North-West of Italy. N = 393, N(Zero-observations) = 61. LR $\chi^2(23) = 317.66$, p<0.001.*