Ownership, organization structure and performance in public service provision:

The case of museums

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ABSTRACT

This article provides an empirical investigation of the effects of the ownership and organizational structure on the performance of cultural institutions. More specifically, we consider how museums are effective in their function of disseminating culture to audiences and contributing to the local development. By exploiting a unique data set based on the 2011 census of Italian museums, we develop performance indexes of accessibility, visitors' experience, web visibility and promotion of the local cultural context. Using count data models, we regress such measures on the type of organization. We distinguish between governmental museums, public museums whose administration is either outsourced or has financial autonomy and private museums. We control for the most salient characteristics of a museum, competition pressure and some proxies of potential audience. Our evidence shows that private museums, public museums with financial autonomy and outsourced museums outperform public museums run as sub-units of culture departments. This paper contributes to the public administration and policy literature by adding insights into the effect of outsourcing and administrative decentralization in the public cultural sector.

What is your opinion about the much-debated autonomy?

Most of all, I consider autonomy as having one's own budget (...)

The most immediate necessity is administrative reform…

the most important one is improving visitor experience

(Interview with Eike Schmidt, new director of the Uffizi Gallery, Florence,

Il Giornale dell'Arte, Feb. 2016)

1. INTRODUCTION

The aim of this article is to analyze how ownership structure and organizational form influence the performance of cultural institutions in the provision of public services.

Urged by the recurrent calls for reforms of public service delivery, over the past few decades a growing body of work pertaining to different research areas has addressed the virtues and limitations of the public and private provision of services with a public good component. Central to this literature is the understanding of how different degrees of publicness in public service organizations affect their performance by shaping incentives, organizational characteristics and managerial practices.

This subject has also become intertwined with the debate on the privatization and contracting out of public services and the decentralization of public sector organizations, two topics that have gained momentum in the public policy and management literature of the past two decades.

Given such a context, a rich empirical literature has bloomed, testing whether the degree of

publicness and the organizational structure affect the performance of public service provision (Boyne 2003, Andrews et al. 2011). While these contributions have focused mainly on education, health care, waste management and transportation services, little empirical evidence has been published on the cultural sector so far, in particular on the effects of the outsourcing and administrative decentralization of public cultural organizations.

Here we focus on the Italian context, which is particularly illustrative as it presents a large number of heritage institutions characterized by heterogeneity in ownership structure and organizational forms. While Italian museums have traditionally been mainly public institutions managed under a state provision model by national or local government authorities, since the mid-nineties, several policy reforms have eased outsourcing practices and new hybrid organizational arrangements for public museum management. At the same time, private museums have proliferated.

In our empirical analysis we exploit a unique data set based on the Italian National Statistical Office 2011 Museum Census – more than 2,500 units, including monuments and archaeological sites. We construct a set of indicators of museum performance in public service provision. They are related to four aspects of a museum's supply (accessibility, facilitation of visitors' experience, web visibility and relationship with the local context) and indicate whether activities and services have been implemented in each unit of the data set. The provision of these activities and services impacts the effectiveness of achieving their mission, namely to improve public welfare by promoting, exhibiting and communicating heritage for the purposes of education, study and enjoyment. We construct performance indicators of the four abovementioned dimensions as well as an index of overall performance as a sum of the four indicators.

Using count data models, we regress these variables on the type of museum organization. We distinguish between governmental museums (i.e. public museums dependent on central or local

government), public autonomous museums, public outsourced museums and private museums. We control for the type of institution (monument, museum, archaeological site); the time of foundation; the size; whether an institution is part of a museum network; the competitive environment (the number of museums in the town); and, carefully taking endogeneity into account, some proxies of the potential audience (population, number of tourism beds).

Our main findings highlight that the performance of the provision of cultural services of public autonomous and public outsourced museums is higher than that of governmental institutions run as sub-units of culture departments and with no financial autonomy. At the same time, private museums perform better than publicly owned and directly managed museums but not as well as those public museums that have been outsourced or granted financial autonomy.

2. OWNERSHIP, ORGANIZATIONAL STRUCTURE AND MUSEUMS' SERVICE PERFORMANCE

Museums and heritage organizations are traditionally regarded as providers of services with public merit/public good components. In many countries, the ownership, management and funding of such institutions has often relied on government control and intervention (Throsby 2010). The general debate on public sector management and performance has thus invested public museums, organizations delivering services related to the preservation, access and consumption of cultural goods. In the past few decades tighter restrictions on public resources and an ideological shift in cultural policies has caused public museums to witness the growth of new focuses such as strategies for audience development and engagement, efficient management and attention to

additional financial sources. At the same time, there has been a growing awareness of the need to use specific accountability instruments and reporting methods *vis-à-vis* stakeholders. It is, for instance, not surprising that new paradigms, such as that of public value, have taken hold in the arts and cultural policy debate as a means of making cultural services delivery more efficient or accountable (Throsby 2010, Scott 2016). In this section of the article, we present the main tenets of our interpretative framework. First, we discuss the theoretical and empirical works that define the performance of museums as public service providers. Second, we elaborate on how the ownership type and the organizational structure of these cultural institutions may affect their performance.

Defining museums' performance

Defining and measuring performance in public organizations is generally considered to be puzzling. It is widely acknowledged in the literature that performance is a complex phenomenon with a range of different dimensions, in part because the perspectives of the many and diverse stakeholders vary (Selden and Sowa 2004, Boyne et al. 2005, Andrews et al. 2006). For instance, Boyne (2002) has identified sixteen dimensions of performance in public organizations grouped into five themes: outputs, efficiency, effectiveness, responsiveness, and democratic outcomes. Crucially, since every public service is different, the appropriate criteria for assessing performance may vary, thus favoring one dimension over another and influencing the related selection of appropriate measures (Selden and Sowa 2004).

As public or non-profit organizations, arts institutions and museums face similar challenges in conceptualizing and measuring performance (Pignataro 2003). According to Harrison (2000), when museums started to be considered also from an economic and managerial point of view the main focus for evaluating museums' performance was on outputs or efficiency, using the number of

visitors or revenues from entrance fees and exhibitions as the main indicators (Basso and Funari 2004, Del Barrio and Herrero 2014). This approach, however, has limitations in addressing the qualitative and social aspects of the public cultural services provided by museums.

More recently, effectiveness has become a major issue in the museum sector, where effectiveness is defined as the ability of a museum to generate values for society according to its mission and goals. However, effectiveness is itself a multi-dimensional concept because museums are expected to undertake different tasks, and their goals may relate to different stakeholders. Camarero and Garrido (2008) highlight the fact that, unlike other public service organizations, museums provide a complex product that is the result of different activities: conservation, exhibition and communication of the collections, educational programs and scientific productions. In addition to responding to the demand from current users, museums also respond to a social demand stemming from their cultural value, which leads them to provide benefits to society and the local community. This response includes such aspects as a museum's contribution to raising awareness of its collections among the various audiences through cultural dissemination and knowledge creation or through fostering a community's social and economic development. Consequently, the characteristics of a museum's supply reflect the multi-faceted nature of its mission.

In this paper we consider museums' effectiveness. Our approach privileges the consideration of museums' role in promoting cultural dissemination and their contribution to local context development. This reflects a general shift in museums' practice that has occurred in recent years, which consists of a change from a more or less exclusive focus on pure conservation to an increasing strategic orientation towards audiences and stakeholders. The purpose is to improve museums' ability to effectively deliver high-quality services that enhance the satisfaction of visitors and the attractiveness of the place for both local residents and tourists (Camarero and Garrido 2008,

Burton et al. 2009).

Leaving museum activities such as conservation and research in the background comes at no high cost, in our opinion. Though museum curators might consider that conservation and promotion activities are rivals in the allocation of financial and time resources and that concentrating on audience expansion may put conservation of exhibits at risk, both museum functions have increasingly been seen and treated as complementary. Fedeli and Santoni (2006) empirically support this view: in Italian state museums they find complementarity between scientific activities traditionally related to conservation, preservation, research and study on the one hand and promotion activities related to education, audience engagement and tourism attraction on the other hand.

Measuring museums' effectiveness in disseminating culture is not easy, and it is especially hard when one considers the educational dimension. Direct strategies have been used by scholars to assess learning as the outcome of a museum visit. These strategies are based on questionnaires at the end of the visit. However, Prentice et al. (1998) find this approach problematic, as these assessments measure not the actual learning that occurred at the museum but rather knowledge, of which a museum visit affects only an incremental part. Indeed, controlling for previous knowledge is a difficult task.[1] An alternative approach measures museum outcome through surveys assessing individual satisfaction or perceived impact by stakeholders. This approach was adopted by some empirical studies to develop museums' performance indicators (Camarero and Garrido 2008, Camarero et al. 2011). However, the use of subjective measures of performance is likely to be flawed by serious measurement biases (Boyne 2006). A further reason to prefer objective quantitative measures is highlighted by Boyne (2003), who claims that public service improvement

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[1] For an alternative approach using visit length as a proxy for learning, see Brida et al. (2017).

is an inherently political and contestable issue, but its quantitative aspects are more likely to be valued by all constituencies.

To avoid such potential shortcomings, we do not consider the final outcome of a museum's services. Instead, we use a large number of outputs, i.e., activities and aspects of a museum's supply that target tourists and visitors (both potential and actual) and whose aim is to make the museum more accessible, friendly and connected. The underlying idea is that the more a museum engages in such activities, the more likely it is to accomplish its role as a cultural disseminator and promoter of the attractiveness of the local cultural context.

Determinants of museum performance: Hypotheses

Among the different dimensions of publicness, the ownership structure has been generally recognized to affect museum management and performance. Looking at the distinction between public and private museums, Frey and Pommerehne (1989) argue that, insofar as public grants cover their budget, public museum directors are likely to have low incentives to search for alternative income sources. They also pay little attention to public preferences, do not engage in a business managerial style and tend to favor non-commercial and specialist-oriented activities (e.g., the documentation of the collection by means of well-researched scientific catalogs) over visitor-oriented ones (e.g., instructional guides for improving the museum experience of the public) (Benhamou 1998).

This situation is exacerbated when public museums are owned and directly controlled by government entities. When a centralized bureaucratic organization manages such institutions, it tends to be inefficient in coordinating the diverse museum functions and in promoting visitor-oriented activities. Moreover, revenues from ticket sales or from ancillary services usually do not

accrue to individual public museums or their offices but are part of government revenues. Conversely, private museums relying more on private funding and revenue sources have greater incentives to engage in managerial practices and strategies to ensure the financial sustainability of the organization, with a view to developing an audience, offering amenities to visitors and striving to gain recognition from their various stakeholders (Frey and Meier 2006).

Notwithstanding such theoretical considerations, there is little empirical evidence about the effect of ownership on the dimensions of museum performance. Using data from an international survey of 491 European museums, Camarero et al. (2011) find that the amount of public funding has a significant and negative impact on museums' capacity to embrace technological innovation, whereas they provide mixed evidence regarding the effect of museums' publicness on their economic and social performance.

We propose to test the following hypothesis regarding the relationship between museums' publicness and their performance:

H1: Private museums outperform public museums directly run by government entities in their mission to provide audience-oriented services for cultural dissemination and enhancement of the local cultural context.

While the performance of museums may vary depending on the type of ownership, a more nuanced distinction can be made within the organizational structure of public museums. Schuster (1998) suggests that in the museum sector, hybrid ownership and organizational arrangements have become increasingly common and widespread instead of the pure forms of public and private institutions. Therefore, it is likely that different organizational arrangements within public museums

may lead to different performance. In particular, outsourcing and administrative decentralization may have an impact on public museums' effectiveness.

Regarding outsourcing in the cultural sector, Schuster (1997) argues that one benefit is that the quality of the cultural and artistic experiences provided by the cultural organizations would improve. However, he finds remarkably little evidence to support this argument.

From a theoretical viewpoint, the literature on incomplete contracts (Holmstrom and Milgrom 1991, Hart, Shleifer and Vishny 1997) suggests that efficiency gains may be expected from the outsourcing of public services to the private sector, whereas improvement in the quality of service provision depends mostly on the contractibility and measurability of the task/activity. The easier the task is to measure, the higher the investment in service improvement by the service provider. The direct applicability of these conclusions to the museum sector is arguable, as in most cases the service providers are non-profit organizations whose incentives are different from those of the for-profit ones assumed by the models. Moreover, the focus on only non-contractible items may be misleading, as quality depends also on the presence/absence of contractible activities or aspects of an organization's supply. It may well be that within an outsourcing contract, a government requires the service provider to set up new activities or modify the actual supply conditions (opening times, for instance) to increase the outsourced museum's performance. Alternatively, such actions may be the effect of a service provider's initiative.

There is indeed anecdotal evidence that outsourced public museums have expanded the availability of visitors' amenities and improved commercial, non-mandated services, which allegedly represent those contractible activities that are more relevant for achieving organizational goals in audience development and engagement (Harrison 2000, Toepler and Dewees 2005).

The literature on privatization and the outsourcing of public service delivery focuses mainly on how

the different incentives lead to the improvement of public services. However, it disregards the fact that changes in organizational models may also affect the financing mechanism of public organizations, a factor that can definitely influence performance if it translates into richer budgets (Boyne 2003). Considering that the main private actors engaged in the provision of public services are mission-oriented non-profit organizations, an argument in favor of outsourcing is private non-profit organizations' ability to attract higher financial resources than just the revenues of service delivery. This occurs through voluntary price discrimination: high demanders of the public service contribute above the price through giving and donations to the organization (Hansmann, 1981). Thus, a positive relationship may exist between the organizational mode and museum performance due to the different ability to attract funds by the different providers.

Our second hypothesis is therefore the following:

H2 Outsourced public museums outperform public museums directly run by government entities.

Another change in the organizational structure of public museums that is likely to affect performance stems from administrative decentralization in public service provision. While the concept of decentralization in the public administration literature has different nuances (Dubois and Fattore 2009), here we consider how the transfer of administrative and financial responsibility concerning museum services from central government entities to the museums themselves is likely to affect a museum's performance. In this context, Besley and Gathak (2003) develop an interpretative framework. They suggest that decentralized government provision may be a superior solution compared to both pure market and traditional state provision. Such a result stems from the

fact that with decentralized provision, the single units endowed with managerial and financial autonomy within the public organization benefit from the allocative role of matching providers, customers and workers. This leads to performance improvements due to better alignment of the mission preferences of all stakeholders and attenuates incentive problems.

Hence our third hypothesis is formulated as follows:

H3 Public museums with managerial and financial autonomy outperform public museums directly run by government entities.

Finally, it might be argued that privatization, outsourcing and decentralization often cause more competition in a market, as has been documented in the case of hospitals or schools. It is important to disentangle the effects of privatization, outsourcing and decentralization per se and the effects of the changes in the market environment with which those phenomena are associated. The positive effect of competitive pressure on the quality of local public services has been confirmed by Bloom et al. (2013), focusing on UK public hospitals' management practices and performance. In the context of the museum sector, this issue is not as relevant as in other domains of public service provision because the uniqueness of each museum collection qualifies this market as monopolistic competition no matter the organizational mode in the provision of the service. In other words, even under public sector management, a science and a fine arts museum located in the same area are not perceived as delivering the same service, and if outsourcing or decentralization occurs the picture does not change in this respect. Instead, the cross elasticity of demand of two museums with a similar collection may be different from zero even if they are both governmental ones. In this case, a change in ownership or organizational mode through outsourcing or decentralization does not

introduce competition in the market, as in the case of hospitals, but it may only induce an increase of the value of their cross elasticity. Notice also that there are two markets a museum is in: also in the market of donations monopolistic competition is the typical market structure.

3. MUSEUMS: THE ITALIAN CONTEXT

Traditionally, culture in Italy has been considered to be a public sector domain of intervention focused mainly on heritage (Bodo and Bodo, 2014).[2] Along with monuments and archaeological sites, museums have always played a major role in public spending for heritage, which in turn is the main item within public cultural spending. Direct management by national or local governments was the only organizational model of museum policy until the mid-1990s. Within the public sector, museums were not managed as autonomous units, and they did not have their own budgets. They were in fact sub-units of the culture departments, with no spending power or revenues, and ticket sales and sponsorships would accrue to the general budget of the level of government that managed each institution. All decisions not pertaining to the strictly cultural domain were made by the politically elected head of the culture department (and approved by the legislature) or by bureaucrats.

As Dalle Nogare and Bertacchini (2015) illustrate, all this began to change in the mid-nineties due to the new ideological atmosphere and the necessity to shrink public expenditure to meet the

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[2] The levels of government most involved in delivering cultural services are the central government and municipalities, the former with a Ministry of Culture, the latter with their own culture departments.

Maastricht criteria.[3] Law no. 4, 4-01-1993 on auxiliary museum services (bookshops, catering, etc.) was the first law in Italy that allowed outsourcing in the cultural field.[4] In 1997, the Pompei archaeological site was granted a special autonomous status by the central government, soon followed by the central government-owned museums of Florence, Rome and Venice, which were gathered in autonomous national museum poles (*poli museali autonomi*). In 1998, the National Egyptian Museum in Turin was handed over to a public-private foundation. Though such changes have been only sketchily documented, public museums belonging to local governments, universities and other public institutions have also experimented with new organizational models (Benedikter, 2004; Ponzini, 2010). According to recently collected data on municipalities' outsourcing in the cultural field,[5] 569 municipalities had outsourced at least one of their cultural institutions by 2011, and in the specific domain of museums, the outsourcing has been mainly to nonprofit foundations, many of which are QUANGOs.

The shift towards new organizational modes has thus been going on for about twenty years. The process has exhibited substantial variability over time and levels of government. Resistance has been strong, both by a share of the directors and especially by the unionized employees, particularly against the outsourcing trend.[6]

Because of this resistance, almost all new organizational arrangements have not entailed a complete break with the past. Those museums that have been granted greater autonomy still depend on

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[3] The new European law fostering the outsourcing of public economic services of general interest also had an impact, as it triggered a general trend towards outsourcing in Italy.

[4] This law started being applied only in 1996.

[5] Experimental accounting report, Home Office (Quadro 15-S3, certificati consuntivi).

[6] The rhetoric of some museum directors against the new trends was about the possible conflict between preservation and valorization. The advocates of the status quo claimed that privatization in its different shapes (including outsourcing) would shift the balance in favor of policies that made it easy for audiences to access museums, but by so doing, it would endanger the existence of the very cultural goods exhibited (either through damage caused by congestion or through less money assigned to restoration and maintenance works).

decisions made at the ministry/culture department level in many crucial respects, such as number of employees and wages. More often than not, the outsourcing option has turned into contracting-in or at best the handing over of museum management to newly created public-private institutions, making it hard to regard this trend as a real process of *destatization*.

Notwithstanding these limitations, the new organizational arrangements have substantially affected the operation of public museums. Autonomous museums can retain their revenues (including sponsorships and concession fees derived from outsourcing auxiliary services), which allows them to do some programming and budgeting. Outsourced museums' greater autonomy in programming and budgeting is complemented by the advantage conferred by the fact that new employees may be hired using private market employment contracts, which are characterized by greater flexibility. Whether all this translates into improved museum performance is an open question.

4. RESEARCH METHODS

Empirical model and data

Our model is the following:

$$y_i = \alpha + \beta_i' Org_i + \delta_i' X_i$$

where y_i is the value of an index of the performance of museum i; Org_i is the set of our variables of interest accounting for the museum's form of ownership and organizational structure and X_i is a set of controls relative to the characteristics of the museum and the area where it is located. To translate

it into an empirical model we add an error term with standard characteristics (zero mean, σ^2 variance).

Our research exploits the rich information collected by Istat, the Italian National Statistical Office, in 2011 through a museum census covering all Italian museums and cultural heritage institutions (*Indagine sui musei e le istituzioni similari*). Archaeological sites, monuments and other institutions similar to museums are also included. Notably, the census includes questions concerning the type and characteristics of services and activities provided by the organization, which we use to elaborate performance indicators. Istat provides these data after a process of anonymization. The sample size is 2517 museums with complete information on selected variables.

Dependent variables

We operationalize museums' performance in public service provision by using output measures that capture the effectiveness of museums in their mission to disseminate culture and promote the local cultural context.

The Italian museum census includes questions on the availability of services and activities that are directly or indirectly related to these organizational goals. We selected and classified them within four dimensions:

1) actual accessibility (ACCESS);

2) facilitation of experience (FRIENDLINESS);

3) visibility outside the premises, with special emphasis on web visibility (WEB);

4) mindfulness of local context and connection with other local institutions, both cultural and touristic (LOCALNET).

Table 1 summarizes the questions included within the four dimensions.

<**Table 1 about here**>

The first two dimensions (ACCESS, FRIENDLINESS) are directly related to the capacity of a museum to affect the quality of visitors' experience.

Museum accessibility, expressed in terms of opening days and schedule, is indicative of a museum's attitude towards cultural dissemination. All the museums of our sample were open in 2011, but not all of them had a predetermined opening time – some would just open upon request. Another question we consider is special night openings. Night openings are one of the best signals of commitment to the audience, given that they always imply effort – negotiations with employees, agreement with insurance companies, etc.

FRIENDLINESS is about how easy it is to find one's way in the museum and to grasp the meaning of its collections and exhibitions. It captures the availability of facilities and activities such as laboratories or performances. It is the result of a large number of questions and explores all the available aspects of a museum's supply that conditions a visitor's experience and satisfaction. It is about both the core mission of a museum (cultural dissemination) and auxiliary services that may play an important role, especially in the experience of constantly occasional museum visitors in the definition by Brida, Dalle Nogare and Scuderi (2016).

Regarding the last two indexes (WEB, LOCALNET), a high value is likely to be indirect evidence of the presence of strategies aimed at audience development. This indicates orientation towards not just conservation but also education and different forms of audience development. WEB measures a museum's strategy of web visibility, which means not only advertisement and sale of visits but also dissemination of knowledge about the museum's collections from a distance. It may also be

intended as a measure of the attitude towards innovation in communication, because it is constructed from questions about Internet visibility, presence on social media, and availability of an institution's own apps. In this sense, there is some connection with the scope pursued by Camarero et al. (2011), who consider the effect of the organizational mode on the attitude towards innovation. LOCALNET summarizes the attitude towards, and relationships with, both local audiences and local cultural and tourist industry. Thus, it focuses on a museum's ability to promote the local cultural context through its reputation, loyalty building and collective marketing strategies. One question is about the presence of volunteers and civil service workers. It is important to stress that trade unions have always opposed volunteers in public museums in Italy, so that their presence is a sign of managers' effort to involve the local community.

The answers to the questions within each of the four dimensions are transformed into a set of dummy variables – presence/absence of that given service/characteristic. A performance index for each dimension is simply the count of the declared characteristics. Therefore, from a computational point of view, the switch from the dimension to the performance index consists simply of the sum of a set of dummy variables.[7]

The proxy for overall performance is built as the combination of all four dimensions. Accordingly, the related index OVERALL is the sum of the value of the four indexes ACCESS, FRIENDLINESS, WEB and LOCALNET. Therefore, our measure of effectiveness is the sum of a number of contractible aspects of a museum's supply.

Regressors

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[7] The choice to simply sum up the number of services instead of elaborating a more sophisticated strategy to synthesize museums' performance is a deliberate one. What we wish to obtain is coefficient estimates that are easily interpretable and meaningful for policy purposes.

The main explanatory variables of interest refer to the ownership nature and organizational structure of museums. We distinguish between four types of museums:

- *Governmental museums* (reference category) are owned and managed by a central or local government as a section of a culture department with no budget of their own;

- *Autonomous museums* (AUTO) are owned by a central or local government, but they have their own budget, thus denoting some independence in strategies and decisions;

- *Outsourced museums* (OUTS) are owned by a central or local government, but they are managed by a contractor;

- *Private museums* (PRI) are privately owned.

The category of *Outsourced* museums is constructed using a question investigating the type of general management of the institution.[8] *Private* includes all museums whose owner is a private subject and includes also public-private institutions. In fact, QUANGOs are common and they are regulated by private law. Regarding this, we argue that what matters is not the nature of the ownership of the service provider *per se* but rather the legal rules and constraints shaping the management's action boundaries. As long as all institutions, except governments, are subject to the same legal framework (i.e., they can all sign the same type of work contracts, make use of voluntary work, etc.), ownership by any of them can serve the same purpose. The same reasoning applies to the contractor in the *Outsourced* case: we do not make any distinction between whether the outsourced museum is managed by a fully private enterprise or a QUANGO institution.

Regarding other covariates, we consider:

- a dummy for the type of museum (TYMUS) that equals 1 if "gallery or museum" is the

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[8] Another question of the census is about the outsourcing of singular auxiliary services, but we have not considered it. In fact, according to the law, if a public museum has a bookshop, cafeteria or restaurant, that service must be outsourced.

only or prevalent type or nature of the institution – the reference category is monuments or archaeological sites;

● whether the museum was opened before 1946 (Y46);

● (log of) the surface of the museum (logSUR);

● the number of employees (NEMP), number of employees per surface unit (EMPSUR) and the latter number's square (EMPSUR2);

● whether the museum is part of an organized network of museums (NETMUS);

● (log of) the population of the province, NUTS3 level (logPOP);

● (log of) the number of beds in accommodation facilities (logBED) of the province, NUTS3 level;

● the number of museums in the same municipality (NMUS);

● dummies for the Italian regions, NUTS2 level.

We control for the type of museum because the different types may be differently suitable for hosting some of the activities (for instance, laboratories) that the values of some of our indexes depend upon.

The use of a dummy for museums opened before 1946 controls for the fact that the oldest museums are likely to be museums of fine art or antiquities and located in historic buildings whose structural conditions might hinder the provision of specific services under consideration. Perhaps more recently born museums are more likely to offer services to their visitors or to have more relations with the local context. On the other hand, an old museums dummy may also be interpreted as a control for the historical/artistic relevance of a collection. Older museums are more likely to be "superstar" museums. The relevance of the collection, in terms of potential attractiveness for visitors, is partly controlled for also by the logSUR covariate.

As for the NEMP, we stress that, in the Italian context, the number of employees is exogenous with respect to other managerial choices, such as the number of services offered, at least in public museums. Even when museums are granted autonomy or outsourced, the management of employees is never under the direct control of a museum's director. The opposite circumstance might induce a suspicion of reverse causation here, but the institutional setup rules it out.

EMPSUR is a control for the combination of given quantities of inputs, and its square accounts for eventual overcrowding effects.

The population of the province where the museum is located (Istat, 2016a) and the number of available beds (Istat, 2016b) are meant to control for potential local and tourist audiences. We use the number of beds in accommodation facilities instead of tourist flows in order to avoid reverse causation problems, given recent evidence that in Italy tourism causes museum visits and not vice versa (Cellini and Cuccia, 2013).

We include NETMUS to measure for the fact that being part of a museum network may imply some scale economies in the provided services, or cost savings in administrative aspects, that may translate to more resources for activities targeted at the audience and the local community.

Albeit not allegedly crucial as a factor influencing museums' performance, we control for potential competition pressure by using the number of museums in the same municipality.[9] Competition may affect museums' performance in two ways. On the one hand, competition for visitors should trigger museums to offer activities and services to increase their effectiveness as cultural disseminators. On the other hand, competition for local funding might mean a smaller budget and thus a relative decrease in performance. It is important to control for competitive pressure to disentangle the pure organizational change effect from the confounding effect of one of its possible consequences, i.e., a

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[9] All museums in the same municipality have been considered, also those not included in the sample.

change in the degree of competition among decentralized or outsourced museums.

Summary statistics are reported in Table 2.

<Table 2 about here>

Econometric strategy

As already illustrated, our response variables are the result of a process of counting the number of services provided by each museum. Consequently, we decided to regress our explanatory variables through standard count data models. As the target variable may report problems of overdispersion and in some cases of inflation of zeros, we initially considered two models, namely, Poisson and Negative Binomial, plus their version for zero-inflated distributions. The selection of the most appropriate methodology was driven by the comparison of several criteria: Vuong (1989), LR and goodness-of-fit tests, information criteria, and quasi-Poisson's theta assessment (Cameron and Trivedi 1998).[10]

5. RESULTS

In what follows, we will first discuss the results for overall performance (OVERALL, Table 3) and then present evidence about the four indicators composing it (Table 4).

<Table 3 about here>

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[10] These tests are available upon request.

Overall performance

Table 3 shows the estimates of several models that have OVERALL as a dependent variable, from the most reduced version to the full one. For all specifications, the Negative Binomial was found to be the most adequate model.

Model OVERALL1 considers only the three ownership and organizational mode variables as covariates. There is clear evidence that autonomous and outsourced museums are associated with higher values for the dependent variable: the relative coefficients are positive and statistically significant at the 1% level, while surprisingly, private museums do not seem to differ substantially, as far as performance is concerned, from governmental museums, the reference category. The point estimate of autonomous museums is higher than that associated with outsourced ones. The incidence risk ratios (IRR) for these two organizational forms[11] indicate that being an autonomous or outsourced public museum leads to an increase of, respectively, 33.91% and 14.91% in the overall performance indicator relative to the reference category of governmental museums. Including regional dummies (OVERALL2) does not change the picture: the organizational structure effect is robust and sizable.

When we include museum-specific controls (OVERALL3), both the statistical significance and sign of our variables of interest persist, whereas the value of the point estimates of the AUTO and OUTS covariates become much more similar. All controls are significant and with the expected sign, except for the dummy capturing whether the museum opened before 1946. In particular, being a large museum (logSUR) with many employees (NEMP) increases the number of provided services; the same can be said for museums (TYMUS) compared to monuments or archaeological sites. Our

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[11] The exponential of each coefficient gives the incidence risk ratios (IRR), which is 1.3391 for AUTO and 1.1491 for OUTS.

control for the adequacy of personnel conditionally to the surface of the structure (EMPSUR) has a positive and non-linear impact, meaning positive but diminishing returns as an employee is added to a single surface unit, which depicts possible overcrowding effects. The model including both museum-specific controls and regional dummies (OVERALL4) gives estimates similar to those in OVERALL3.

OVERALL5 and OVERALL6 add environmental controls, namely, the number of museums in the same municipality, whether the museum is part of a museum network, (log of) provincial population and (log of) the number of available beds of the accommodation facilities in the province. The sign, significance and even size of the coefficients of OUTS and AUTO are not affected by the inclusion of the environmental controls, whereas PRI turns significant and positive, thus indicating the significantly higher performance of these institutions than that of the governmental museums, though not so high as that of autonomous and decentralized ones. As expected, the evidence of a positive impact of competition pressure (NMUS) on performance is very weak, while that of being part of a museum network is strong. The impact of the size of the potential local audience (logPOP) is positive and significant. Interestingly, the impact of the potential tourist audience (logBED) is negative. The difference in significance between the impact of locals and tourists may be due to a difference in the way museum managers consider these two types of audiences. Locals are likely to return to a museum, and accordingly, it is important to build a reputation based on the provision of services, which is not the case when one considers tourists. The negative sign of logBED might be because museums in very touristic places have no incentive to be attractive, since tourists will or will not visit them anyway according to whether they are considered icons or not.[12]

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[12] There is evidence that in Italy art exhibitions affect tourist flows in a negligible way (Di Lascio et al., 2011).

Given that the overall performance indicator (OVERALL) is constructed using a large number of dummies, the support of its distribution is large enough to allow us to try OLS estimates of the most comprehensive model, which serves as a check for the robustness of our findings in Table 3. It is reassuring to note that in terms of statistical significance and sign, the Negative Binomial and OLS estimates are very similar. On average, an outsourced museum is associated with 3.6 more services offered to the visitors, an autonomous museum with 2.8 and a private museum with nearly 1, compared to a governmental museum. Since the average number of services is 18, this implies an increase of approximately 17% and 15% in the dependent variable, respectively, if the organizational form changes and an increase of 9% if the ownership changes.

As for the other covariates, the only difference lies in the fact that with OLS, our measure of competition pressure is slightly significant. Its positive sign hints at the fact that the positive effect of competition for audiences in raising museums' performance may be stronger than the potential negative effect arising from competition for financial resources.

All in all, the most important finding conveyed by Table 3 is that there is robust evidence that when we consider performance, the organizational mode matters: public museums that have been granted autonomy or have been outsourced outperform governmental museums. Hence, Hypothesis 2 and Hypothesis 3 are confirmed. Private museums outperform governmental ones if all relevant controls are accounted for, but not in the same sizable way. This means that private museums' performance is not as high as that of public autonomous and outsourced museums. We can therefore say that Hypothesis 1 is confirmed, but whether private museums do better than public ones depends on the organizational form of the latter.

The evidence for private museums is puzzling, and we have only tentative explanations. Indeed, Italian private museums are a miscellany of very different types of institutions. Many are owned by

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the Catholic Church, a stakeholder of a very peculiar nature whose organizational mission for its museums may be different from cultural dissemination and especially local promotion. Additionally, a fairly large number of private museums are brand museums. In recent years, firms of all sizes have opened their own museums and galleries containing archive material and explaining the production of the good they supply. They tend not to have a fixed opening time or many relations with the local community, as they are often meant as part of a B2B marketing strategy.

Single performance dimensions

Table 4 summarizes our results when we use the four sub-indexes of performance that we built as the dependent variables of our specification. In the cases of ACCESS and LOCALNET, we chose the Poisson model; FRIENDLINESS was estimated using the Negative Binomial model, whereas in the case of the dependent variable WEB, the Zero Inflated Negative Binomial model turned out to be the best choice.

<Table 4 about here>

ACCESS is the index showing the smallest number of significant covariates. Both surface (logSUR) and the dummy capturing old museums (Y46) are statistically significant with the expected positive sign: old and large museums are found to be more easily accessible. The capital/labor mix is also significant (EMPSUR), and there is evidence of a non-linear relationship with decreasing returns. Statistical significance is found for the dummy capturing the prevalent nature of the museum (TYMUS) and the participation in a museum network (NETMUS). As for our

variables of interest, ACCESS is apparently not explained by the ownership type or the organizational mode of a museum. Autonomous, outsourced and private museums seem not to differ significantly from governmental ones with respect to accessibility.

The estimates that have FRIENDLINESS, WEB and LOCALNET as dependent variables all show robust evidence that both autonomous and outsourced public museums outperform governmental ones. Private institutions do not stand out as significantly different from the reference category when one considers their visitor friendliness, whereas their coefficient is positive in the WEB and LOCALNET regression, though the coefficient is much smaller than that of public autonomous and outsourced museums.

Evidence for the other covariates is similar to that of OVERALL in Table 3, which we also report in the last column of Table 4 for comparative purposes, with the following exceptions. The number of museums in the same municipality impacts LOCALNET negatively (Column 5), possibly because when there are many museum institutions, there is competition in this respect. LOCALNET is also the only sub-index in which outsourced museums' point estimate is greater than that of autonomous museums, which may be a sign that the likely involvement of local private institutions in the management of a museum is beneficial in terms of connections with the local community. Our two proxies for potential visitors (locals and tourists) are both insignificant.

Perhaps surprisingly, the proxies for potential audiences are also insignificant when WEB is the dependent variable. Here (column 4), competition (NMUS) is highly significant and positive.

Coming back to the focus of this empirical analysis, i.e., the evidence for the relative performance of museums with different ownership and organizational characteristics, we can conclude that considering museum effectiveness in specific operational contexts makes a difference:

- Hypotheses 1, 2 and 3 are confirmed when one considers performance in terms of web

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visibility and relation to the local context.

- Hypotheses 2 and 3 are confirmed when one considers visitor friendliness, while Hypothesis 1 is not confirmed.

- Hypotheses 1, 2 and 3 are not confirmed when one considers accessibility.

6. ROBUSTNESS CHECKS AND DISCUSSION

Given the evidence obtained, one might argue that there is a possible different reading of our findings. As the decision to decentralize or outsource is a discretionary choice, central and local governments may decide to give autonomy to or outsource only those museums that have better performance or better potential for performance growth. In other words, there may be a problem of reverse causation: it is not the organizational structure that influences performance but rather performance that determines the organizational structure. This might be the case, for instance, when governments want to outsource but fear that they will not find private providers interested in signing a contract unless the museum is a blockbuster.

We have, however, reason to believe that reverse causality is not a concern in this context. It is true that the central government has often selected prestigious museums for its decentralization policy, but central government-owned autonomous museums are a one-figure percentage of all autonomous museums in Italy and in our sample. Whether local governments have behaved in the same selective way is questionable. Selectivity has certainly not guided their outsourcing decisions. We know from the analysis of the Home Office data on municipalities' outsourcing[13] that when a municipality

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[13] Experimental accounting report, Home Office (*Quadro 15-S3, certificati consuntivi).*

owns more than one museum, it tends to outsource all of them, and a town's museums are generally very different in their performance. This is due to the fact that they are generally the result of donations and opening decisions happened in the course of a long time.[14]

This is confirmed by Table 5, column NOMIN, where we show the estimates we obtain when we exclude from our sample the museums owned by the central government, the level of government that is presumably more selective in the implementation of its decentralization and outsourcing policy. Although the point values of the estimates for AUTO and OUTS decrease somewhat, their sign and significance remain, revealing an important impact on performance, and little changes as far as the other covariates are concerned.

A second concern is the statistical independence of the dummies we use in the construction of our dependent variables. In particular, the two items "*cafeteria and restaurant*" and "*bookshop*", when present in a museum, imply a profit-making activity that could make a museum more capable of supporting a higher number of non-profit-making activities and services. We therefore re-ran our baseline regression (OVERALL6) using a dependent variable, NOREVGEN, which excludes the two items in question from the overall performance indicator (Table 5). The results do not change much; the point estimates of AUTO and OUTS are somewhat smaller yet positive and significant.

Another point of concern regards our controls for the relevance of the museum collection, namely, Y46 and logSUR; these may not fully capture a museum's attractiveness for visitors, which may be an important control for the number of services a museum offers. However, if we proxy

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[14] Another reason against the reverse causation hypothesis is the prevalence of contracting in over contracting out in municipalities' museum outsourcing strategy. In fact, this prevalence reveals that the main incentive to promote an organizational reform is not the perspective of increasing revenues through more donations and sponsorships. Clearly, this incentive is weak if the reform consists of outsourcing to another fully public organization or QUANGO institution. If this were the main incentive and the designated providers were fully private non-profit institutions, selecting only the most attractive museums for outsourcing would be coherent with it. Yet what the Home Office data show is no selectivity – more often than not, all municipal museums are outsourced, often to a single provider.

attractiveness with the number of visitors on the right-hand side of our model, a reverse causation problem may arise, because visitors may be more attracted by museums providing more services and amenities. We argue, however, that this may not be the case for foreign visitors, who usually visit museums mostly because of the fame of their masterpieces. We therefore use the share of foreign visitors on total visitors (FOREIGN) as an extra covariate in our baseline model.[15] The related column in Table 5 reports the results. We observe very few changes with respect to the baseline estimates, with FOREIGN being positive but only marginally significant, revealing that age and surface are probably sufficient to account for the relevance of a museum's collection.

Finally, in OVERALL6 we found that being a private museum affects performance positively, but apparently the performance of Italian private museums is lower than that of Italian public autonomous and outsourced museums. Since most private museums are not-for-profit institutions, we expected that private and public outsourced museums would be associated with similar service performance, but this does not emerge from our estimates. One possible explanation for this result may be found in the peculiarities of the Italian context regarding the category of private museums, which are mostly owned by religious organizations. Thanks to a specific question in the census data we use, we are able to distinguish between museums belonging to the Catholic Church and other private museums. The column RELIG in Table 5 reports the estimates of a modified baseline model in which the distinction is made between Catholic Church-owned and non-Catholic Church-owned private museums. The estimated coefficient of the former is negative, whereas that of the latter is positive, and both are significant, thus confirming our thesis. Note however that the point estimate for private, non-Church-owned museums is half that for AUT and smaller also than that for OUTS,

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[15] We construct this variable using the answers to two questions on audience in the census survey. These values are therefore self-reported by each museum.

revealing that private museums in Italy are not, on average, top performers. This is a first evidence needing further investigation.

A second evidence worth further research that our estimates reveal is the fact that financial autonomy impacts public museum performance even more than outsourcing. In particular, it would be interesting to see if this is the case just in Italy. In fact, we suspect this evidence may be specific to the Italian context. Consider that an outsourced museum may be conceived as a decentralised museum with some extra advantage given by the greater attractiveness for donors, according to Hansmann's model. So given the potentially greater financial resources, why a more modest performance? Perhaps because these resources are greater only potentially. In fact, they may be scarcer in Italy, a country without an important donation culture and an effective fiscal policy favouring donations. As we have no information on museum budgets and outsourcing contracts, we cannot prove these claims, but anecdotal evidence shows that in the course of time the terms of outsourcing contracts have sometimes evolved in an unfavourable way for contractors, while these have possibly found it hard to find other resources to finance their activities.

7. CONCLUDING REMARKS

Museums are for preserving and showing their collections, to which a community attributes a symbolic meaning that reinforces both individual and collective identity. They are often also tourist attractors, and in both roles they are important for the positive externalities they produce. This explains why their service provision has a relevant public good component; thus, the issue of museum performance is often considered within the context of the debate on public service

providers' performance.

This contribution investigates which type of museum ownership structure and organization is best in terms of performance, concentrating on museums as culture disseminators. We proxy museums' performance with the number of services and activities that enhance cultural dissemination and the promotion of and engagement in the local cultural context. We carefully control for a number of museum-specific and context-specific determinants of performance and for potential audience.

Our estimates highlight the fact that service performance in public autonomous and public outsourced museums is higher than that in public museums run as sub-units of governmental culture departments with no financial autonomy. We read this as evidence that decentralization and outsourcing do not imply quality shading; in fact, they are associated with an improvement in performance. The impact of being decentralized or outsourced is not only positive but also sizable. This has clear policy implications: governmental museums should be outsourced or, even better, granted more financial autonomy.

A second interesting finding of our analysis is that the different performance dimensions we consider are affected by a museum's organizational structure in different ways. Accessibility seems not to be influenced at all, while all other dimensions (visitor amenities, web visibility and local network) confirm that autonomous and outsourced museums outperform governmental ones. The impacts of being autonomous and outsourced are similar in the case of visitor friendliness and relations with the local context, while in the case of web visibility, being an autonomous museum has a larger impact on performance than being outsourced. This may also hint at different attitudes towards new communication technologies by the two museum organizational types.

Finally, according to our evidence, Italian private museums do not seem to be very effective in their mission – though they do better than public museums that are run as sub-units of culture

departments – and this is true even if we control for Church ownership.

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Table 1 - Performance dimensions and related items of the questionnaire

Dimension-subdimension	Item	Values
ACCESS		
Opening time policy, predefined timetable (ref. opening upon request)		yes-no
Open all year (except holidays)		yes-no
Evening or night openings		yes-no
FRIENDLINESS		
Informational devices	info point	yes-no
	info poster at entrance	yes-no
	map at entrance with visiting paths	yes-no
	presence of brochures	yes-no
	posters or captions describing single displays	yes-no
	Audio- and/or video guides and/or multimedia booths	yes-no
	signs highlighting visiting paths	yes-no
	paths and info material dedicated to children	yes-no
	info material for disabled people (braille)	yes-no
	info poster at entrance on local context	yes-no
Facilities	ticket pre-sale/reservation of visit	yes-no
	Cloakroom	yes-no
	cafeteria and restaurant	yes-no
	Bookshop	yes-no
Guided visits		yes-no
Didactic activities		yes-no
Performances and similar events		yes-no
WEB		
Website		yes-no
Online catalogue for visitors		yes-no
Online scientific catalogue for scholars		yes-no
Access to single selected heritage pieces		yes-no
App		yes-no
Teaching/gaming section in website		yes-no
Online library		yes-no
Online ticket purchase		yes-no
Virtual visit		yes-no
Online calendar of events		yes-no
Newsletter		yes-no
Social media		yes-no
Wi-Fi access		yes-no
LOCALNET		
Presence of volunteers or "civil service" employees		yes-no
Presence of "friends of" clubs		yes-no
Part of structured cultural paths		yes-no
Brochures of local cultural and touristic organizations		yes-no
Advertising campaigns dedicated to locals		yes-no
Partnerships with other local cultural institutions		yes-no

Table 2 – Summary statistics for response variables and regressors

Variable	Acronym	Mean	Standard deviation	% (dummy=yes)
Quality: overall	QUALITY	17.3	6.7	
Quality: actual accessibility	ACCESS	2.1	0.9	
Quality: facilitation of experience	FRIENDLINESS	8.8	3.7	
Quality: visibility	WEB	2.4	2.3	
Quality: local context	LOCALNET	3.9	1.5	
Autonomous museums (dummy)	AUTO			7.0
Outsourced museums (dummy)	OUTS			19.1
Private museums (dummy)	PRI			37.7
Number of museums within the same municipality	NMUS	8.9	19.2	
The institution is a gallery or a museum (dummy)	TYMUS			86.4
The museum is part of an organized network of museums or similar institutions, for the sharing of human, financial or technological resources (dummy)	NETMUS			49.7
The museum was opened before 1946 (dummy)	Y46			11.2
Surface, square meters	SUR	3560.7	35563.8	
Number of employees	NEMP	10.4	24.9	
Number of beds in accommodation facilities of the province (NUTS3)	BED	38725.2	46247.9	
Population of the province (NUTS3)	POP	810344.5	900317.2	
Employees/surface ratio * 100	EMPSUR	3.1	7.5	

Table 3 – Overall performance: regressions results from Negative Binomial models.

	OVERALL1	OVERALL2	OVERALL3	OVERALL4	OVERALL5	OVERALL6	OLS
AUTO	0.292*** (0.032)	0.279*** (0.031)	0.200*** (0.029)	0.193*** (0.028)	0.203*** (0.028)	0.194*** (0.028)	3.675*** (0.471)
OUTS	0.139*** (0.022)	0.143*** (0.023)	0.169*** (0.020)	0.167*** (0.021)	0.176*** (0.020)	0.171*** (0.020)	2.869*** (0.334)
PRI	0.013 (0.019)	0.012 (0.019)	0.025 (0.017)	0.023 (0.017)	0.061*** (0.017)	0.058*** (0.017)	0.975*** (0.275)
Regional dummies	No	Yes	No	Yes	No	Yes	Yes
TYMUS			0.202*** (0.022)	0.184*** (0.022)	0.199*** (0.022)	0.187*** (0.022)	3.246*** (0.348)
Y46			0.016 (0.023)	0.009 (0.023)	-0.0004 (0.023)	0.0001 (0.023)	0.089 (0.377)
logSUR			0.125*** (0.006)	0.120*** (0.006)	0.117*** (0.006)	0.113*** (0.006)	1.823*** (0.098)
NEMP			0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.027*** (0.005)
EMPSUR			0.010*** (0.002)	0.009*** (0.002)	0.009*** (0.002)	0.009*** (0.002)	0.116*** (0.028)
EMPSUR2			-0.0001*** (0.00001)	-0.0001*** (0.00001)	-0.0001*** (0.00001)	-0.0001*** (0.00001)	-0.001*** (0.0002)
NMUS					0.0004 (0.0004)	0.001 (0.0004)	0.012* (0.007)
NETMUS					0.150*** (0.015)	0.148*** (0.015)	2.430*** (0.241)
logBED					-0.014* (0.008)	-0.021** (0.010)	-0.303* (0.167)
logPOP					0.034*** (0.011)	0.033** (0.015)	0.541** (0.239)
Constant	2.793*** (0.013)	2.869*** (0.031)	1.810*** (0.047)	1.895*** (0.055)	1.459*** (0.125)	1.553*** (0.166)	-4.127 -2.706
Observations	2,517	2,517	2,517	2,517	2,517	2,517	2,517
Log Likelihood	-8,372.714	-8,313.743	-8,098.821	-8,059.397	-8,038.915	-8,005.486	
Theta	9.850*** (0.458)	10.652*** (0.511)	14.584*** (0.806)	15.478*** (0.880)	16.091*** (0.935)	16.957*** (1.011)	
AIC	16,753.430	16,673.490	16,217.640	16,176.790	16,105.830	16,076.970	
R^2							0.308
Adj. R^2							0.299
Residual SE							5.616 df = 2484
F statistic							34.482*** df = 32; 2484

Note – Standard errors in parenthesis. Signif. codes: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Set of dummies for Italian regions (NUTS 2) are included in each regression but not reported (reference category: Lazio).

Table 4 – Regression models for considered performance sub-indexes.

Dimension	ACCESS	FRIENDLINESS	WEB		LOCALNET	OVERALL
Model	*P*	*NB*	*ZINB logit*	*ZINB count*	*P*	*NB*
AUTO	0.069 (0.055)	0.174*** (0.029)	0.881 (0.275)	0.385*** (0.059)	0.134*** (0.040)	0.194*** (0.028)
OUTS	0.035 (0.041)	0.175*** (0.021)	0.212 (0.143)	0.285*** (0.051)	0.163*** (0.029)	0.171*** (0.020)
PRI	-0.038 (0.034)	0.024 (0.018)	0.145 (0.116)	0.293*** (0.043)	0.066*** (0.025)	0.058*** (0.017)
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
TYMUS	0.088** (0.043)	0.188*** (0.023)	0.605 (0.152)	0.353*** (0.056)	0.134*** (0.032)	0.187*** (0.022)
Y46	0.114*** (0.043)	-0.015 (0.024)	-0.110 (0.189)	-0.001 (0.050)	-0.005 (0.034)	0.0001 (0.023)
logSUR	0.080*** (0.011)	0.112*** (0.006)	0.499 (0.058)	0.138*** (0.015)	0.058*** (0.008)	0.113*** (0.006)
NEMP	0.0004 (0.0005)	0.001*** (0.0002)	0.028 (0.009)	0.001 (0.001)	0.001* (0.0003)	0.001*** (0.0003)
EMPSUR	0.009*** (0.003)	0.006*** (0.002)	0.040 (0.016)	0.028*** (0.008)	0.009*** (0.002)	0.009*** (0.002)
EMPSUR2	-0.0001** (0.00003)	-0.00004*** (0.00002)	-0.0008 (0.0002)	-0.001*** (0.0002)	-0.00004*** (0.00002)	-0.0001*** (0.00001)
NMUS	0.001 (0.001)	-0.0004 (0.0005)	0.016 (0.004)	0.005*** (0.001)	-0.002*** (0.001)	0.001 (0.0004)
NETMUS	0.078*** (0.030)	0.132*** (0.016)	0.607 (0.105)	0.135*** (0.036)	0.154*** (0.022)	0.148*** (0.015)
logBED	-0.001 (0.021)	-0.026** (0.011)	-0.026 (0.073)	-0.014 (0.025)	-0.020 (0.015)	-0.021** (0.010)
logPOP	-0.007 (0.030)	0.052*** (0.016)	-0.059 (0.103)	0.052 (0.036)	0.018 (0.021)	0.033** (0.015)
Constant	0.183 (0.336)	0.755*** (0.177)	-2.303* (1.181)	-1.130*** (0.417)	0.694*** (0.241)	1.553*** (0.166)
Observations	2,517	2,517	2,517		2,517	2,517
Log Likelihood	-3,674.569	-6,556.483		-4,730.645	-4,635.869	-8,005.486
theta		50.461*** (10.338)				16.957*** (1.011)
AIC	7,415.139	13,178.970			9,337.737	16,076.970

Note – Standard errors in parenthesis. Model codes: *P* (Poisson), *NB* (Negative Binomial), *ZINB logit* (Zero-Inflated Negative Binomial, selection stage), *ZINB count* (Zero-Inflated Negative Binomial, outcome stage). Signif. codes: *** $p< 0.01$; ** $p< 0.05$; * $p< 0.1$. Set of dummies for Italian regions (NUTS 2) are included in each regression but not reported (reference category: Lazio).

Table 5 – Robustness checks. Overall performance is the dependent variable.

	OVERALL6	NOMIN	NOREVGEN	FOREIGN	RELIG
AUTO	0.194***	0.164***	0.188***	0.195***	0.197***
	(0.028)	(0.028)	(0.027)	(0.028)	(0.027)
OUTS	0.171***	0.152***	0.159***	0.174***	0.172***
	(0.020)	(0.021)	(0.020)	(0.021)	(0.020)
PRI	0.058***	0.037**	0.046***	0.059***	
	(0.017)	(0.017)	(0.017)	(0.018)	
PRIrelig					-0.075***
					(0.025)
PRInorelig					0.107***
					(0.018)
Regional dummies	Yes	Yes	Yes	Yes	Yes
TYMUS	0.187***	0.136***	0.190***	0.191***	0.181***
	(0.022)	(0.023)	(0.021)	(0.022)	(0.021)
Y46	0.0001	-0.005	-0.002	-0.004	0.013
	(0.023)	(0.024)	(0.022)	(0.024)	(0.022)
logSUR	0.113***	0.124***	0.109***	0.112***	0.110***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
NEMP	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
EMPSUR	0.009***	0.010***	0.009***	0.008***	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
EMPSUR2	-0.0001***	-0.0001***	-0.0001***	-0.00005***	-0.0001***
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
NMUS	0.001	0.001	0.001	0.0004	0.0004
	(0.0004)	(0.0005)	(0.0004)	(0.0005)	(0.0004)
NETMUS	0.148***	0.164***	0.146***	0.148***	0.149***
	(0.015)	(0.015)	(0.014)	(0.015)	(0.015)
logBED	-0.021**	-0.021**	-0.018*	-0.024**	-0.020**
	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
logPOP	0.033**	0.037**	0.031**	0.036**	0.034**
	(0.015)	(0.015)	(0.014)	(0.015)	(0.015)
FOREIGN				0.001*	
				(0.0004)	
Constant	1.553***	1.534***	1.560***	1.534***	1.560***
	(0.166)	(0.170)	(0.163)	(0.169)	(0.164)
Observations	2,517	2,394	2,523	2,413	2,517
Log Likelihood	-8,005.486	-7,601.179	-7,904.113	-7,670.647	-7,980.916
theta	16.957*** (1.011)	17.448*** (1.078)	18.787*** (1.203)	17.170*** (1.052)	17.647*** (1.073)
AIC	16,076.970	15,268.360	15,874.230	15,409.290	16,029.830

Note –Standard errors in parenthesis. With respect to the baseline model, NOMIN excludes from the sample those museums that are owned by MIBACT; NOREVGEN excludes the presence of revenue generating services from the dependent variable (i.e., restaurants, bars and bookshops); FOREIGN includes the share of foreign visitors as declared by each museums; RELIG splits the sample of private museums (PRI) into "private and owned by a religious institution" (PRIrelig) and "other private museums (PRInorelig)". Signif. codes: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Set of dummies for Italian regions (NUTS 2) are included in each regression but not reported (reference category: Lazio).