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Demand for cultural heritage

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1. Introduction.

The concept of cultural heritage has experienced a process of extension during the past few decades. Because it is a cultural construction, it is subject to differences in appreciation based on contextual and institutional factors (Hutter and Rizzo, 1997; Peacock, 1998). Social consensus has established that there are elements of cultural capital that deserve protection. Therefore, institutional arrangements, including, conventions and legal categories, have been developed to ensure preservation and transmission of that legacy from the past (even the recent past) to future generations. The increase in the number of cultural assets that contemporary societies considered to be elements of their cultural heritage can be attributed to two main factors: administrative processes linked to preservation policies that rely on additions, such that new single elements are added each day, and to the consideration of new categories and typologies (Benhamou, 1996 and 2003; Vecco, 2010). The first of these processes is related to supply arguments. The second process is related to demand driven arguments: a demand for the extension of typologies; the close association between heritage elements in an integral approach and the contexts of the heritage elements; the shift in selection criteria from objective criteria (such as the traditional historic and artistic values) to subjective and broader criteria (Vecco, 2010); and the increasing importance of immaterial categories.

There is a shift in the relationship between different social groups and the elements of cultural heritage, a change in the orientation of the arguments about the importance of preserving cultural heritage from supply towards demand. From an initial conception of the importance of the cultural good per se, we now acknowledge the importance of that good in its physical and social context. From the sacralisation of representative elements of the past, mostly related to elite and erudite values, it has become a local resource It is a multi-dimensional social construct that provides different services to different stakeholders: a resource for education, for recreation and for the development of communities, cities and regions (Greffe, 1990, Peacock, 1994, Klamer and Zuidhof,

1998, Mazzanti, 2003 and Bedate et al. 2004. The extension of formal education, changes in leisure time and leisure habits and the improvement in transportation and communication technologies have contributed to that change. Experts' opinions still play a crucial role in the process of designation and the determination of the supply of cultural goods, though their importance has diminished. They define the eligibility criteria to be an element of cultural heritage (what is being preserved) and establish the optimal combination between preservation and access. The experts' better information about the quality and values attached to the elements of cultural heritage means that the market is not necessarily a reliable institution for ensuring the present and future provision of cultural goods (Rizzo and Towse, 2002).

In addition, innovations, mostly related to the development of information and communication technologies (ICTs), have dramatically changed the way in which cultural heritage is defined, preserved and transmitted. The definition of cultural heritage has been altered because new types of cultural institutions form new categories or add to traditional ones. Examples of this alteration are virtual museums, i.e., "those represented in an electronic format, such as a CD or an Internet site", as included in the UNESCO 2009 Framework of Cultural Statistics in the museum category (UNESCO, 2009, p. 25). The ICTs have made cultural assets accessible to a broader audience through a process of desacralisation of the traditional museum institution (Carrozzino and Bergamasco, 2010). When defining a cultural asset, its non-material value to culture and civilisation prevail, regardless of its tangible form. Preservation of cultural heritage assets has also benefited from innovations, such as the development of non-destructive techniques for the restoration of tangible cultural assets (for a review of the economics of preservation, see Mason, 2003) and new display techniques. Finally, the dimension that has changed the most because of the development of the ICTs has been the transmission and the access to cultural heritage: from the ability to digitise archives, to the possibility of creating a new cultural experience through the virtual collections of a particular museum or heritage institution. Another factor to be considered, based on the literature on consumption psychology, is described as a shift from the need to meet basic needs to the need to satisfy other psychological avenues through "conceptual" consumption (Ariely and Norton, 2009). As technology simplifies the way in which basic and material needs can be met, individuals develop a need to consume symbolic goods and non-tangibles.

All these characteristics are considered in this paper, in an attempt to account for their influence on the analysis of the individual and social demand for cultural heritage. In *Section* 2, we present a discussion of the most relevant characteristics from an economic point of view of the elements of cultural heritage and relate them to the types of value embedded in those elements. We explain how individual demand for cultural heritage is derived from a utility maximization process under some constraints, and we comment on market failures in terms of public good characteristics and externalities. After the presentation of some of the economic models that explore the determinants of the demand for cultural goods, we discuss empirical issues in *Section 3*. We use the definitions proposed by the UNESCO 2009 Framework that defines the "cultural cycle" as the interaction

between different stages; we focus on the so-called "participation" stage (UNESCO, 2009). Three different alternative means of participation are discussed (visits to heritage institutions and sites, participation through the media, and practice and personal involvement) and we present some descriptive data and analysis on the determinants of the access to heritage goods and services. When analysing how to measure and how to explain the demand for cultural heritage, we have encountered a number of difficulties and issues; we comment on them and present some conclusions in *Section 4*.

2. The value of cultural heritage and the diverse determinants of demand.

Heritage goods as elements of cultural capital.

Heritage goods are cultural assets that are part of the cultural capital of a community or society (Throsby, 2003). Analogous to physical productive capital, cultural heritage is a stock variable whose value will be increased by investments and will be reduced by depreciation. It is a resource that, combined with others, contributes to the production of other goods and services, so cultural heritage input provides intangible services that increase the consumer utility (Peacock, 1997). The development of the notion of cultural capital corresponds to other extensions of the "capital" concept, including human, natural or social capital. Whereas human capital is considered a personal asset (mostly increased by means of individual investment in education), natural, social and cultural capital are communitarian in nature. When considering the relationship of the individual to a particular element of that cultural capital (i.e., with a heritage good), we should acknowledge that the individual does not enjoy the good itself; individuals do not experience cultural capital by means of its direct consumption to derive utility. Instead, the consumption of cultural capital is through a flow of services, whether they are material heritage goods (such as paintings, sculptures or archaeological objects, susceptible of private ownership or public display), a cultural or natural heritage site (that provides services to be used to create an enjoyable experience) or a tradition classified as immaterial cultural heritage (such as a tradition that provides the framework for social celebration).

Among the great diversity of categories considered to be part of cultural heritage as defined in the 2009 Framework of Cultural Statistics (UNESCO, 2009), the common trait is that all the goods that can be classified as cultural heritage assets that hold a value for the culture and civilisation. UNESCO recognises symbolic, historic, artistic, aesthetic, ethnological or anthropological, scientific and social significance as some of the values inherent to cultural heritage. Whether they are tangible assets (such as buildings, locations, sites, artworks and artefacts) or intangible ones (practices, representations, expressions, knowledge and skills that are recognised as part of

cultural heritage by communities, groups and individuals), all categories have cultural value, in addition to possibly holding economic value (Throsby, 2001).

Use and non-use value; markets and valuation

In addition to direct users (owners or visitors), who derive utility and enjoyment from a cultural good, non-users also determine the valuation of that good. The group of users benefits from the value of using a good, and the non-users will consider the non-use value they receive because of existence, that is usually determined by having the option to use the good and because of the value that is attached to the good's transfer to future generations (Klamer and Zuidhof, 1998). Therefore, apart from some artefacts (such as some paintings, sculptures, archaeological objects and buildings), there are many instances in which there is no market for cultural heritage goods. When trying to assign value to a non-market heritage good, suitable valuation techniques have to be considered. However, even when a cultural heritage good is privately owned, thereby providing direct user enjoyment to its owner, it can also provide a positive utility, because of its existence, to all the members of the community. For instance, even if a historic building is privately owned, its well-preserved façade will provide enjoyment to the non-owners. This societal value is bolstered by the regulations attached to a public designation of cultural heritage that basically imposes duties on private owners, including making the good somehow accessible to the public, limiting the alteration of the good, or restricting the international trade of the good. If there is no market for a cultural heritage good, observed or stated preference-based valuation techniques have to be applied (Alberini and Longo, 2006; Bedate et al. 2004, Choi et al, 2010; Cuccia, 2003; Mazzanti, 2003; Morey and Rossman, 2003; Sanz et al, 2003; Snowball, 2008)

Cultural value and individual demand.

To determine how individuals derive enjoyable and meaningful experiences from cultural heritage goods, we need to propose a model of individual demand for those goods. Economic models are simplifications of reality that use assumptions to establish the influence of a bundle of exogenous variables in the determination of some variable of interest, such as how prices and income determine the quantity of cultural goods a person demands. Cultural economists have proposed models that explain individual decision making considering, among other relevant traits, preference formation phenomena (such as learning by consuming and rational addiction models), the resource constraints of the individuals (time and money limit their capacity to consume), and the social dimension of cultural goods (Becker, 1965; Sable and Kling, 2001; Lévy-Garboua and Montmarquette, 2003; Seaman, 2005).

Economic models for consumer behaviour are based on the assumption that rational agents maximise their utility, or satisfy their needs in some optimal way, subject to a set of constraints that determine what they can afford. Constraints represent the limit of resources available to the individual, mainly the availability of time and income, so he has to optimally allocate a time budget and a monetary budget according to his preferences. In this framework, the valuation of cultural

heritage is much more complex than the valuation of any ordinary consumption good because some consumption goods (such as food) directly satisfy a given need, whereas cultural heritage goods require special transformation before understanding how individuals can have meaningful experiences that satisfy their cultural appreciation needs (Lévy-Garboua and Montmarquette, 2003).

Cultural heritage goods are capital goods because they serve as productive inputs for the creation of experiences, together with the personal time and individual cognitive resources. Any cultural heritage element is highly symbolic, so the individual needs to have acquired the skills prior to being able to interpret and enjoy a particular element. The two main ways in which an individual can acquire those skills are education and earlier exposure to heritage and cultural goods, so their values can be appreciated. Therefore, both past experiences and formal education, which are also the variables that determine the level of human capital of an individual, will increase a person's ability to enjoy cultural heritage goods. This has been modelled in various ways, including the "rational addiction" model, according to Stigler and Becker (1977), and the "learning-by-consuming" model, developed by Levy-Garboua and Montmarquette (2003). Traditional models consider that the individual demand for a particular cultural good will depend on the price of that good, the presence of substitutes or complements and the individual's or the household's income. When testing the results of those models with real data, empirical models also include demographic variables that have proven to have an impact in the demand for cultural goods, such as age and gender (Seaman, 2005).

When demanding services from cultural heritage goods that are part of cultural appreciation experiences, individuals typically have to take into account not only the price of the particular cultural good, but also other costs, such as transportation and the imputed cost of the time that they allocate to that experience. Consumer theory determines that, for normal goods, demand is negatively related to price. However, when considering the price of access to the services provided by a heritage good, one could also consider the following factors. First, often the price of the access is zero (as in the case of free-entrance to cultural museums or the enjoyment of a historic city) or represents a small fraction of the whole cost of the experience. Second, when there are information asymmetries about the quality of the good, price is seen as an informative signal about the true quality of the good. This is the case for experience goods, whose quality can only be assessed by the individual once the cultural experience has been produced and enjoyed. Last, there might be a difference in the responsiveness of individuals to prices for some segments of demand, even for the demand of auxiliary services (complement goods as defined below) outside access to the cultural good itself (Nicolau, 2010). For museums, when measuring the sensibility of visitor demand to admission prices, it is found that, typically, price elasticity is negative and its absolute value is smaller than one. This indicates that the effect of an increase of 1% on the admission price is related to a less than 1% reduction in the number of visits (Johnson, 2003 and Fernández-Blanco and Prieto-Rodríguez, 2011).

Relating the existence and price of complimentary and substitute goods to access to a cultural heritage element, one expects that the higher the price of a complementary good, the lower the demand for a cultural heritage good, and the higher the price of a substitute, the greater the demand for a cultural heritage good. Complements to the access to a heritage good can be travel and accommodation. Substitutes to physical access can be alternative means of participation that we will define in next section (consider, for example, visiting a museum's collections, accessing the collections via the internet, CDs or getting involved in the museum's programs).

Income and time availability determine the choice set of the individual. Demand is positively related to income, and income elasticity is greater than one. If a person gets involved in a cultural experience, he/she has to spend some time in that activity. Some types of access to cultural heritage may be more time consuming than others. For instance, visits to a museum have associated transportation costs, whereas one can access the collections of a virtual museum from home. Labour market commitments and household responsibilities condition the amount of discretionary time that an individual has to allocate among leisure activities. Individuals with higher income and with less discretionary time will have a higher opportunity cost of time.

In a time of rapid social and technological change, it can be the case that the utility derived from preserving the past (mostly linked with non-use values, such as existence, option and bequest values) is positively related to age, as indicated by Benhamou (2003). Holbrook and Schindler (1996) conclude that age and attitude toward the past combine to shape cultural tastes (in their case, for motion pictures), probably based in affective responses.

Public good nature
Cultural heritage elements exhibit, to some degree, the two characteristics of public goods. On the one hand, they are non-excludable because it is not possible to preventing anyone from their enjoyment, once they have been displayed. On the other hand, there is non-rivalry in consumption; the private enjoyment of an individual does not prevent others from enjoying it. However, for many cases, we do not find that both characteristics are present in a pure way. Regarding excludability, there are situations in which the exclusion is neither technically possible nor desirable, but in some other instances, excludability can be created by granting access only to individuals willing to contribute. For non-rivalry, there could be some limits related to the capacity of the cultural heritage resource. Cuccia (2003) notes that the elements of cultural heritage that share characteristics of public goods can also lead to the good's overexploitation and irreversible damage. Additional research by Maddison and Foster (2003) and others explores the impact of congestion on the quality of the cultural experience enjoyed by a visitor to a museum or heritage site.

Consumption externalities

The symbolic meanings of cultural heritage are related to communities and groups. This fact is linked with the non-use values of the good, and with the fact that there are consumption externalities that arise from others' consumption, especially when these goods communicate social identity and represent cultural continuity. Sable and Kling (2001) represent those benefits in a model that captures private market values and social non-market values. Individuals derive a direct personal satisfaction from preserved assets, but they also derive satisfaction from the access of others. The simultaneity of externalities creates a "double public" good characteristic for cultural heritage elements. The market may not account for those consumption externalities and, therefore, provide access to these goods at well below the social optimum.

Intertemporal considerations

Cultural heritage is an asset that is inherited from the past and transmitted to future generations. Because the preferences of future generations are not reflected in market prices, the values to future generations of engaging with a cultural asset will not be considered by market-based decisions to supply such assets, resulting in their under-provision. The "sustainability" concept, borrowed from the natural resources and development literature, has been applied to analyse this intertemporal externality. Throsby (2003) reviews some of the implications of the temporal dimension of cultural heritage. One of the sources of non-use value is the bequest value, so the social demand for cultural heritage should be informed by a principle of intergenerational equity. However, even if we can include that dimension in theoretical models in the spirit of natural resource economists, it is quite difficult to test whether the hypotheses derived from those models are supported by the evidence. It is clear that the choices that will be made by the present generations about the cultural heritage goods that should be preserved and to what extent will influence future generations because of the irreversibility of the consequences of those decisions.

The vision of the intragenerational and the intergenerational equity is reflected in the global public good characteristics associated with some of the elements of cultural heritage. This category of economic goods is strongly universal "in terms of countries (covering more than one group of countries), people (accruing to several, preferably all, population groups), and generations (extending to both current and future generations, or at least meeting the needs of current generations without foreclosing development options for future generations)" (Kaul et al., 1999). Environmental quality and carbon emissions, security and protection against global terrorism and international financial regulations also have global public good characteristics. At the international level, the incentives for free-riding and for not contributing arise between countries, so new agreements have to be proposed for policymakers and private actors so that private incentives will help to preserve the priceless and irreplaceable cultural sites around the world. The World Heritage List is one of the most important institutional arrangements to ensure the preservation of some of the most prominent global public goods. At the international scale, the listing involves recognition and enforces a trend of preservation and conservation. Although this list induces some

positive effects, some negative ones should also be highlighted, such as reduced protection for elements that are not on the list, potential deterioration and congestion or becoming a target for wars or terrorist attacks (Frey and Pamini, 2009 and Frey and Steiner, 2010).

3. Demand and participation

Cultural heritage assets provide a wide variety of services and, being a multidimensional concept, individuals value different bundles of attributes and characteristics differently (Mazzanti, 2002 and 2003; Choi, 2010). When considering individual demand, one must examine the type of values that individuals attach to a particular heritage asset because the assessment of that valuation will be related to demand. There are different individual motivations for the demand for heritage. There is a recreational motivation, where access to cultural heritage goods is part of a leisure activity (for cultural tourism, for instance). There is also evidence of an educational motivation, both formal and informal, as is the case with early museum experiences of children. Some categories of cultural heritage, such as archives, science centres, planetariums and natural collections, have a more prominent scientific value, so the motivation for individual demand is linked to research and knowledge. Sometimes, the symbolic aspects of cultural heritage means that individual valuation and demand relies on the allure or the prestige of cultural goods, as when a historic building is chosen as the headquarters of a firm. The traditional motivation implies that individuals seek recognition of part of one's identity in traditions and group's expressions.

Most of previous research that considers the demand for cultural heritage has focused on the demand for visits to tangible and built cultural heritage. However, we would also like to briefly discuss other types of demand: vicarious demand, demand for preservation and conservation and "non-cultural" demand.

Vicarious demand is the demand of individuals who do not access the resource physically but derive enjoyment from seeing it in pictures or as a content of some other media product (Rizzo and Towse, 2002). This type of demand relies on the symbolic and historic characteristics of the good, so it can both contribute to a better preservation of heritage and lead to its trivialisation, such as in the demand for memorabilia and souvenirs that benefit from the iconic dimension of cultural heritage.

The demand for preservation and conservation has an individual and a societal dimension (Mason, 2003 and Noonan and Krupka, 2010). Conservation is oriented toward the extension of the life of cultural heritage and strengthening the transmission of its significant heritage messages and values. The individual demand is linked to the private ownership of cultural heritage goods, whereas the societal demand for conservation determines what is worth preserving and the institutional arrangements and resources that are made available for that goal.

We can also consider what Greffe (2004) calls the "non-cultural" demand for heritage, i.e., the fact that cultural heritage acts as an economic resource for other non-cultural activities, such as tourism or the "branding" of cities and regions (as in Plaza, 2010). In the first case, a potential negative outcome can be the "over-consumption" of cultural heritage sites, not linked to additional investments in the preservation of the site. In the second case, demand comes mostly from local authorities, so any additional burden could be more easily internalised.

Access to cultural heritage

Access to cultural heritage has traditionally taken place through physical access and visits. Nowadays, that traditional manner of participation is being challenged by technological changes. The development of new information and communication technologies has altered the demand for cultural goods in a number of ways. For example, it has altered traditional participation by increasing the possibilities of preserving and exhibiting heritage, through the digitalisation of archives and collections. It has also altered consumption through the development of electronic applications for heritage and museums, so cultural assets can provide new services. A good example of those two facts is Europeana.eu, the Internet portal that acts as an interface to millions of books, paintings, films, museum objects and archival records that have been digitised throughout Europe. (Purday, 2009). ICT has also created the possibility of guaranteeing better access to heritage by using systems of virtual or augmented reality. Thanks to ICTs, as in the case of virtual exhibitions, demand is not definitively linked to the proximity to the heritage resource as before. Consumption of services derived from some cultural goods can happen anytime and anywhere (NEA, 2010).

The nature of the experiences that cultural heritage can provide has changed dramatically in recent years. As remarked by Bakhshi and Throsby (2010), there are new dimensions of the cultural experience that have appeared along with the technological change, such as interactivity (i.e., the possibility of two-way communication with users of cultural goods), connectivity (because the internet provides direct communication between users and suppliers) and convergence (implying that audiences can access the good from wherever and whenever the wish). Still, direct physical access to cultural heritage goods is very important, and including cultural heritage goods in travel and leisure habits remains a very popular way of experiencing those goods. However, there are new ways of transforming the non-physical elements of cultural heritage goods into goods and services that can produce meaningful cultural experiences. Original cultural artefacts, as displayed in a museum or cultural landscapes are still thought to possess symbolic and fetishistic value.

The 2009 FCS groups cultural manifestations in a list of domains. The Cultural and Natural Heritage domain is a transversal domain in the configuration of the notion of culture. It comprises museums (including virtual ones), archaeological and historical places, cultural landscapes, natural heritage and intangible cultural heritage (oral traditions and expressions, rituals, languages and social

practices). The framework also defines different cycles of culture depending on the cultural manifestation under consideration. The cultural cycle consists on the sequence of these stages: creation, production, dissemination, exhibition-reception, transmission, and consumption-participation. For cultural heritage, creation would typically have taken place in the past, so most of the activities related with that domain will occur in the exhibition, transmission and consumption-participation phases. The last stage of the cycle is related to activities of audiences and participants in consuming cultural products and taking part in cultural activities and experiences. This can be understood as occurring in three different, but overlapping, ways: attendance and visit, personal creation and taking part, and media consumption (NEA, 2011a).

The 2009 FCS seems to provide a suitable framework for the analysis of the demand for cultural heritage; however, there are a number of issues that are difficult to handle. First, it is difficult to measure consumption/participation for the intangible elements of cultural heritage (including, oral traditions and expressions, rituals, languages and social practices). A similar problem arises when dealing with the cultural landscape and natural heritage categories. The framework highlights that specific measurement instruments are to be developed to solve these difficulties. Second, attendance has been the traditional means of measuring demand for built cultural heritage. As discussed earlier, leisure habits, the extension of cultural tourism, the increase in levels of formal education and other economic and social determinants have lead to an increase in demand for access to cultural heritage sites. Third, participation through the media is becoming increasingly popular. Technological change has increased the variety of services that benefit from cultural heritage assets. Finally, participation through active involvement is crucial in the case of non-physical cultural heritage (languages, traditions, orally transmitted heritage and folklore). Further, heritage preservation campaigns are often accompanied by educational campaigns.

The multidimensionality of cultural heritage and the changing means of access present several challenges to researchers interested in measuring and describing the demand for cultural assets as well as in determining the influence of different individual and social factors on demand. In what follows, we will present some features that characterize access to some elements of the cultural heritage. To do so, we will use data from official statistics from the United States, mainly from the 2008 Survey of Public Participation in the Arts (NEA, 2009). This approach can be followed when analyzing other population surveys as the Eurobarometer or the European Union Statistics on Income and Living Conditions (EU-SILC) for a bundle of European countries (Beck-Domzalska, 2011), or the national surveys on cultural practices that many official statistical national institutes conduct.

Participation: alternative ways to gain access to cultural heritage
Most population surveys on cultural habits and cultural participation contain some measure of attendance to museums and heritage sites. For instance, visits to art museums turn out to be the most popular cultural activity in the United States among the "benchmark activities" of the National

Endowment for the Arts; heritage sites visits closely follows it (NEA 2009). An estimated proportion of 22,73% of the population visited at least once an arts museum and 24,91% visited a heritage site during the year before the survey was conducted. The average number of times that the museum visitors went to art museums and galleries was nearly 3 times during that year. Data from the U.S. Department of Commerce's Bureau of Economic Analysis provide an estimate of consumer spending on admissions to museums and libraries. For the year 2009, it amounted to $6 billion (NEA, 2011b). However, as explained in the previous section, money is not the only scarce resource that individuals have to sacrifice to consume services derived from cultural heritage. Average time spent by museum visitors is 2,4 hours, with more than 500,000 people visiting museums on an average day, and 885,000 on an average weekend or holiday. Those estimates are derived from the data collected in the American Time Use Surveys for the years 2005-2009, conducted by the U.S. Department of Labor's Bureau of Labor Statistics. That same data source contains information on when Americans visit museums and who with they do it. For the years 2003-2009, museum going mostly take place in the late-morning and early afternoon. It turns out to be a very social cultural practice, with only 5,7% of the visitors attending on their own. Most individuals attend with their family (71,2%) or friends (18,8%). Like other recreational demands, visiting museums is tightly linked with social and familiar time use. It is specially significant that 44,6% report having attended with their children, indicating the relevance of heritage institutions in the informal transmission of cultural education (NEA, 2011b).

Individuals have nowadays access to the collections of museums without visiting them physically. New experiences can be created either without a physical visit (virtual museums are included in the cultural and natural heritage domain) or during the visit itself (by making use of digital applications or augmented reality tools). Virtual access to some of the most popular museums, such as the Museum of Modern Art in New York, overtook attendance at the beginning of the century (Johnson, 2003). Data from 2007-2008 recorded in the last release of the USA Survey of Public Participation in the Arts show that the proportion of U.S. adults that visited art museum and galleries during the previous year is equal to the proportion that enjoyed visual works and programs through the media, accounting for 22,7% of the adult population (NEA, 2010).

The museum creation processes sometimes involve local communities and, thereby, become an educational resource itself that helps build local identity. By using social networks, institutions can involve their local communities even before opening their doors (Museo Nacional de la Energía, 2011). Again thanks to the development and use of ICTs, concepts such as collaborative actions and co-curation processes are becoming familiar terms that reflect the new possibilities for participation and involvement of the audiences in the cultural experiences that they are going to enjoy. Audiences can interact with their community and can also interact with the heritage institution or its elements. It is still hard to measure this type of participation in heritage linked activities. When we concentrate in a narrow concept of practicing art through the media, the data from the 2008 SPPA determine that 5,0% of the U.S. adult population used the Internet to create or

post art. It is an important challenge to articulate measurement tools that can capture the preference of young adults to engage with the arts through personal creation using media.

Determinants of participation.

In the previous paragraphs we have reported measures that characterize different means of access as well as some of the determinants of the demand for cultural heritage services as reviewed in economic individual decision making models the previous section (Seaman, 2005 and Gray, 2003 offer a good overview of the link between economic models and the empirics of participation in the arts). Now, we present the results derived from some analysis undertook on the data of the 2008 SPPA. We estimate three models to explain the probability of participating in these three ways of accessing cultural heritage: visit an art museum during the previous year (visit an art museum or gallery), visit a heritage site (visit a historic park or monument, or tour buildings or neighborhoods for their historic or design value), and access through the media (watch or listened to a program about artists, artworks, or art museums). In the three models, the dependent variable is a binary outcome (yes or no), so we do not explain the intensity of the practice, but rather what determines the probability of participating by that particular practice. The explanatory variables are chosen in order to test hypotheses derived from the theoretic models presented in the previous section: demographic variables, variables that determine resources availability (time and income), contextual factors and variables that explain the personal endowment of cultural capital. This last group of explanatory variables is especially relevant, since formal education and artistic education, joint with transmitted education in the family, determine that individuals can better understand and produce gratifying experiences in the consumption of services derived from cultural heritage.

For traditional ways of participation in heritage institutions (visits to museums and to heritage sites), the findings are very similar. There is no significant age effect, the effect of sex is only significant for museum visits, and race determines a lower probability for black people. Regarding money resources, household income has a positive and monotonic effect for levels above the median household income (above $50.000). Household composition variables and labor status potentially determine time availability and the opportunity cost of time. There are no statistically significant effects in this respect, apart from the negative effect of household size on museum visits, negative effect of being either widow, separated or divorced on heritage visits, and negative effect of being retired with respect to working full-time. The probability of visiting museums increases when the individual lives in a principal city. It is in the effect of the cultural capital variables, as measured by education, where we find the most outstanding results. Own education has monotonic effect on both types of visits. The same happens with both specific education in terms of artistic appreciation classes and visual arts classes. The effect of transmission of cultural capital by the parents, measured by their highest level of formal education, is also monotonic, though of a smaller magnitude.

We are also interested in analyzing the determinants of participation by means of electronic media (television, computers and other electronic media), in terms of listening or watching programs about artists, art works or art museums. In this case, possibly related to cohort effect of media and computer literacy, age has a negative and significant effect. There is a positive income effect for rich individuals (as in the upper 22% of the household income distribution). The variables related to time availability do not show a significant effect, probably related to the fact that electronic media guarantee access to cultural resources anytime and anywhere. However, habitants of bigger cities (principal and balanced) also have a higher probability to access to heritage in this way. Own formal education has a positive effect, but not as big in magnitude as the effect found in the models for visits. The effect transmitted by parents is not statistically significant in this case (the only exception is for very high educated mothers). Finally, the effect of specific arts training in terms of arts appreciation and of visual arts classes is positive (greater for visual than for arts appreciation classes). These results may confirm the preference of young generations to gain access to heritage through the media, the smaller relevance of money and time resources to participate in this new ways, and, somehow, the democratization of access by electronic media.

4. Conclusions

The multiple values embedded in cultural heritage elements and their great heterogeneity presents a number of challenges to the study of the demand for cultural heritage. Different values and characteristics of individuals and groups determine different demand cultural heritage goods. This leads to different institutional arrangements to ensure the access to and the preservation of those elements. Traditionally, access and preservation has been perceived as a dilemma to be solved by cultural heritage managers. However, as we have discussed in this paper, it could be the case that changes in the provision of services derived from heritage and in the ways in which citizens can enjoy them could partly contribute to the equilibrium between those two. Because the time and location dimensions that are traditionally linked to physical access to the resource are no longer as relevant as they once were, there are alternative ways of accessing particular categories. This could help resolve the seasonality of demand that contributes to congestion and to the poor quality of the appreciation experiences.

Those changes, along with other social ones, have induced a further extension of the concept of cultural heritage. We should consider the bi-directional relationship between technology and cultural heritage. On the one hand, new technologies have already transformed how people access and use cultural heritage services, so now the managers of cultural heritage institutions have new tools available to measure the social impact of their institutions (through web visibility, as in Plaza, 2011). On the other, due to accelerated technological changes, the addition of new industrial and technical heritage elements can represent new challenges to those in charge of preserving and making cultural heritage accessible and understandable to the public. Rapid political, technological

and social change has lead to a situation in which current generations coexist with material artefacts that they have used but are already confined to museums.

Finally, cultural heritage's role as a resource impacts local development and can attract a wider audience through technologies that provide information and promote access. For local developers, there are actions that enhance the cultural resources of a community for local participation and there are actions that promote the use of cultural resources for tourism (Herrero, 2001; Vicente, 2003 and Phillips and Stein, 2011). In some cases cultural heritage goods act as global attractors. Plaza (2010) coins the phrase GLAMUR museums (Global Art Museums as Economic Re-activators) and studies the case of the Guggenheim Museum Bilbao.

When trying to measure and to explain individual demand for cultural heritage, there are a number of difficulties that arise. The 2009 UNESCO Framework for Cultural Statistics recognises some of the measurement problems and proposes some alternatives to overcome the limited empirical evidence. New technologies and art forms challenges to survey tools and to research methods built upon traditional metrics of arts participation (NEA, 2010). However, as we have seen in the previous section, population surveys on household budgets and on use of time contain valuable information on how individuals and households allocate their resources to satisfy their demand for cultural heritage services. That source of information, obtained from samples that are representative of large populations, can be useful for further examining the determinants of and the constraints on use of cultural heritage goods. Further, the surveys can be a good complement to the knowledge obtained from studies focused on individual heritage sites that use travel cost or travel time methods to assess the value of a particular site (Bedate et al., 2004). Another alternative and fruitful approach is happiness research (Frey and Stutzer, 2002; Frey, 2008 and Van-Praag and Ferrer-i-Carbonell, 2004; CASE, 2011). This approach assesses the positive effects of the demand for cultural heritage on individual and societal well-being. This approach has recently proved to be a suitable way of assessing the value of public goods (as cultural heritage) and public bads (as terrorism or environmental pollution). As indicated in CASE (2011), the economic approach to happiness research can offer a method to assess the beneficial aspects of cultural heritage demand and involvement.

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TABLE 1. Logit models estimates

	Museum visits		Heritage visits		Museums and media	
	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.
25-34 years	-0,226	0,243	-0,322	0,206	-0,693	0,455
35-44 years	-0,191	0,206	-0,059	0,156	-0,668*	0,352
45-54 years	0,029	0,195	-0,200*	0,119	-0,703**	0,346
55-64 years	-0,050	0,183	0,040	0,122	-0,165	0,313
65+ years	-0,089	0,170	0,074	0,107	0,103	0,293
male	-0,247***	0,087	-0,054	0,053	0,212	0,168
black	-0,666***	0,181	-0,558***	0,112	0,179	0,271
indian	-0,003	0,466	-0,201	0,497	1,855***	0,560
inc2	-0,122	0,120	0,062	0,148	0,007	0,226
inc3	0,229*	0,127	0,262***	0,098	0,198	0,248
inc4	0,460***	0,131	0,600***	0,154	0,595**	0,250
hhldsize	-0,103***	0,038	-0,029	0,027	-0,020	0,069
widowed	-0,006	0,179	-0,302***	0,112	0,398	0,289
single	-0,025	0,128	-0,152*	0,087	0,069	0,243
divorced	-0,089	0,119	-0,179***	0,064	0,230	0,221
employed part-time	0,136	0,133	0,087	0,073	0,091	0,281
unemployed	0,103	0,267	-0,041	0,153	-0,535	0,483
retired	-0,318**	0,149	-0,248**	0,096	-0,166	0,260
not in labor force	-0,044	0,159	-0,103	0,201	0,238	0,281
central	0,546***	0,135	-0,082	0,061	0,485*	0,260
balance	0,141	0,127	-0,211***	0,051	0,426*	0,245
edu some high school	-0,226	0,208	-0,512***	0,177	0,042	0,322
edu some college	0,662***	0,122	0,388***	0,095	0,407*	0,238
edu college	0,912***	0,133	0,545***	0,108	0,582**	0,259
edu advanced graduate degree	1,348***	0,159	0,901***	0,116	0,530*	0,303

fatheredu some high school	-0,274**	0,137	-0,096	0,100	-0,343	0,243
fatheredu some college	0,020	0,150	0,218	0,142	-0,191	0,299
fatheredu college	0,288**	0,147	0,371**	0,149	0,284	0,274
fatheredu advanced graduate degree	0,317*	0,183	0,491***	0,125	-0,526	0,388
motheredu some high school	-0,293**	0,148	-0,242*	0,124	-0,100	0,244
motheredu some college	0,290**	0,140	0,330***	0,117	-0,239	0,329
motheredu college	0,332**	0,144	0,369**	0,174	0,105	0,278
motheredu advanced graduate degree	0,439*	0,240	0,280	0,252	0,822*	0,471
classart	0,807***	0,105	0,732***	0,102	0,931***	0,198
classvisual	0,829***	0,099	0,758***	0,089	1,229***	0,190
_cons	-1,772***	0,255	-1,417***	0,140	-2,650***	0,467
AIC	1,01E+12		1,10E+12		2,83E+11	
BIC	1,01E+12		1,10E+12		2,83E+11	
note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$						
	n=6550		n=6548		n=2192	

Baseline categories: 18-25 years; female, white, inc1, married, employed full-time, central, edu high school, fatheredu high school, motheredu high school, no class art, no class visual (controlling for other race, missing values in income, not identified principal city/balance status, and missing values in parental education and in maternal education).

Data from the 2008 Survey of Public Participation in the Arts (NEA, 2009)

TABLE 2. Descriptive statistics

Definition	Label	Proporti	Std.
Dependent variables			
Having gone to art museums and galleries during the previous	museum go	0,227	0,00
Having gone to heritage sites during the previous year	heritage go	0,249	0,00
Having watched or listened programs about artists, artworks or	museum	0,150	0,00
Demographics			
Age	age	45,820	0,18
Sex	male	0,483	0,00
Race: white	white	0,813	0,04
Race: black	black	0,118	0,00
Race: indian	indian	0,079	0,01
Household income			
Household income less than $24,999	inc1	0,189	0,04
Household income between $25,000 and $49,999	inc2	0,238	0,00
Household income between $50,000 and $74,999	inc3	0,180	0,00
Household income greater than $75.000	inc4	0,272	0,00
Household composition			
Household size	hhldsize	2,916	0,02
Marital status:married	married	0,554	0,05
Marital status:widowed	widowed	0,067	0,00
Marital status: single	single	0,250	0,00
Marital status: separated or divorced	divorced	0,129	0,00
Labor status			
Labor status: employed full-time	empoyed	0,530	0,00
Labor status: employed part-time	employed	0,108	0,00
Labor status: unemployed	unemployed	0,035	0,00
Labor status: retired	retired	0,220	0,00
Labor status: not in the labor force	not in labor	0,107	0,00
Prinicipal city/blance status			
Principal city	central	0,218	0,00
Balance	balance	0,364	0,00
Non-metropolitan	nometro	0,221	0,00
Cultural capital and educational variables (own formal education,			

Less than 12th grade, no high school diploma	edu less high	0,149	0,00
High school graduate	edu high	0,307	0,00
Some university	edu some	0,273	0,00
Bachelor degree	edu college	0,183	0,00
Higher than bachelor degree	edu	0,088	0,00
Less than 12th grade, no high school diploma: father	fatheredu	0,259	0,00
High school graduate: father	father high	0,307	0,00
Some university : father	fatheredu	0,086	0,00
Bachelor degree: father	fatheredu	0,113	0,00
Higher than bachelor degree: father	fatheredu	0,055	0,00
Less than 12th grade, no high school diploma: mother	motheredu	0,243	0,00
High school graduate: mother	mother high	0,362	0,00
Some university : mother	motheredu	0,097	0,00
Bachelor degree: mother	motheredu	0,107	0,00
Higher than bachelor degree: mother	motheredu	0,033	0,00
Having taken arts appreciation classes	classart	0,138	0,00
Having taken visual arts classes	classvisual	0,170	0,00

Data from the 2008 Survey of Public Participation in the Arts (NEA, 2009)