

Chapter 10

Museums



Abstract Major determinants of museum visits are entry fee, visitors' income and education, the quality of the collection, the attractiveness of the building, and the levels of amenities and marketing activities. Museums produce social non-use values: options, existence, bequest, prestige, and education, for which they are not compensated in monetary terms. Impact studies tend to focus on purely material effects of museums which is most questionable. The supply of museums is characterized by high fixed costs for buildings, collections, and staff. Blockbuster exhibitions, differentiating entry fees, and enlarging commercial activities can also raise revenue. The behaviour of purely public and private museums differs substantially. In both organizations, the directors are reluctant to sell any part of their holdings, even when under financial stress.

Keywords Entrance fee · Pricing options · Income · Education · Collection · Storage · Monetization · Buildings · Architecture · Amenities · Marketing · Blockbuster exhibitions · Commercial activities · Public museums · Private museums · Social demand · Revealed behaviour · Compensating variation · Popular referenda · Impact studies · Donations · Museum directors · Institutional conditions

10.1 Types of Museums

Museums play a substantial role in people's leisure activities. They belong to one of the most important tourist attractions.

There are several types of museums. It is useful to distinguish:

- *Content*. Most importantly art, historical artefacts, scientific objects, and many other exhibits of general and sometimes very specific interest;
- *Size*. Some museums occupy a large space, employ a high number of staff and have many thousands of visitors per day. Many others are of only local interest, are small, with very restricted opening hours, are run by amateur staff, and have few visitors;

- *Age*. Some museums have a long and distinguished history, while others are newly founded;
- *Institutional form*. Traditionally, European museums have been public, even forming part of the normal government administration. But there have always been private museums. Most museums lie somewhere between public and private.

10.2 Demand for Museums

10.2.1 Private Demand by Visitors

Museum visitors may be interested in the exhibits as a leisure activity or as part of their profession as art dealers or art historians. Visits may be undertaken by individuals and families and may be part of an organized activity involving, for instance, schools and firms.

There are three major determinants relating to prices and costs:

- *Entrance fee*. Together with the number of visits, this determines the revenue gained. The price elasticity indicates the percentage decrease in the number of visitors when the entrance fee is raised by a given percentage. Econometric estimates for a large number of diverse museums in different countries suggest that the demand for museum services is price inelastic. Zoos, science museums, and natural history museums show the largest price sensitivity, probably due to stronger competition from other leisure pursuits. Overall, the low price elasticities suggest that museums can generate significant increases in revenues through increasing admission fees.
- *Opportunity cost of time*. This indicates what alternatives visitors have to forgo when they visit a museum. In order to measure the monetary value, one must identify how much additional income could have been gained during that period. For persons with high income and variable time use, mostly the self-employed, the opportunity cost of time is higher than for people of low income and fixed working hours. The latter are therefore expected to visit museums more often. The opportunity cost of a museum visit depends not only on the time actually spent in a museum, but also on how much time is required to get to the museum, and thus on location, parking facilities etc. The increased opportunity costs of time for wealthy people attending museums tend to offset the positive income effect. One has to separate the two effects to find a positive income and a negative opportunity cost effect on demand. For tourists, the opportunity costs of time tend to be lower than for local inhabitants, because they often visit a city with the purpose of visiting its museums.
- *Price of alternative activities*. These are, most importantly, substitute leisure activities, such as other cultural events (theatre, cinema), sports, dining out in restaurants, time spent with friends at home, etc. Even within the industry, museums may constitute a substitute for other museums. The higher the prices of such alter-

natives are, the higher museum attendance is. Complements also systematically influence the number of museum visits. Important costs are those incurred through travel, accommodation, and meals. The higher the costs are, the lower is the rate of museum visits. These complementary costs constitute a substantial share of the total cost.

Income is another classical determinant of the demand for museum visits. People with higher incomes can better afford to pay for museum visits. However, opportunity costs rise with income, as discussed before. Another important factor is the high correlation between income and education. Better-educated individuals have the human capital necessary to more fully enjoy museums than people with lower education. This factor plays a larger role in museums of modern art and history but a lesser one for museums of science and technology, especially for museums of transport (railways, cars, and space travel).

There are many additional determinants of museum visits. One is the quality of the collection or special exhibition. Others are the attractiveness of the building, the level of amenities provided by the museum, such as the general atmosphere, the extent of congestion in front of the exhibits, the cafés and restaurants, and the museum shop. Another important determinant is the marketing efforts made by a museum, especially through regular and attention-catching advertising. Taste is also an important determinant of the rate of museum visits. This is reflected in the fact that individuals who used to visit museums in the past are more likely to do so in the present and future.

10.2.2 Social Demand

Museums produce effects on people who do not actually visit them. These benefits cannot be captured by the museums as revenue.

Museums create social non-use values: options, existence, bequest, prestige, and education. The provision of these values is not compensated in monetary terms. As a consequence, museums have little interest in producing these values, and do so in a small extent, only.

Museums may also produce negative external effects whose costs are carried by other people. An example would be the congestion and noise that museum visitors inflict on a community.

The non-user benefits and costs have been empirically measured by using three techniques:

- *Representative surveys* of both visitors and non-visitors of a museum. The questionnaires have to be carefully designed in order to elicit the true willingness to pay for the various social values produced by a museum. In particular, the survey respondents have to be asked trade-off questions that make clear what other goods and services have to be given up in order to obtain these non-user effects.

- Another technique to capture the value of a museum relies on the *revealed behaviour* of individuals. One procedure is to estimate how much the property values increase in a city that has a museum. People are willing to pay more for a house or apartment in a city with a museum than an equivalent house or apartment in a location without such a museum. The same *compensating variation* can be computed by looking at wages. People are willing to work for lower compensation in a city that has a museum.
- A third technique to capture social values is to analyse the outcome of *popular referenda* on expenditures for museums. Switzerland's many referenda have been successfully used to identify the option, existence, and bequest values of buying two paintings by Picasso for the museum of art in Basel.

10.2.3 *Effects on Markets*

Museums produce monetary values for other economic actors. They create additional jobs and commercial revenue, particularly in the tourism and restaurant businesses. These expenditures create further expenditures (e.g. the restaurant owners spend more on food) and a multiplier effect results. Impact studies measuring the additional market effects are popular with politicians and administrators because such studies provide reasons to spend money on museums. However, these studies have to be interpreted with much care:

- Impact studies tend to focus on purely material issue. But the *raison d'être* of museums is to provide a certain type of cultural experience to its visitors as well as providing the non-user benefits discussed above.
- A museum's purpose is not to stimulate the economy; there are generally much better means to achieve that goal. For example, a theme park or an exhibition of racing cars may be much better at stimulating the economy. If one follows the line of argument of impact studies, one would have to give preference to whatever expenditure leads to greater economic stimulation.

10.3 Supply

10.3.1 *Cost Structure*

Museums are characterized by special conditions.

- *High fixed costs.* Museums in general operate with high fixed costs: buildings, collection, staff, insurance, technical outfits, and so forth cannot be varied in the short run. Independent of the output (e.g. numbers of visitors or numbers of exhibitions) the costs of running the museums remain essentially the same. The fixed costs,

especially for the acquisition of paintings, increase when art market prices rise, and the insurance fees for paintings increase accordingly. Because variable costs constitute a relatively low fraction of the total costs, museums face decreasing unit costs.

- *Marginal costs are close to zero.* The marginal costs of a museum constitute crucial economic information for determining how much should be produced. They indicate how costs vary with output. The cost of an additional visitor is usually close to zero. If a museum sets up an exhibition, the basic operating costs are for opening the museum on that particular day. When more people enter the museum, the fixed component can be divided by a larger quantity. Average costs therefore decrease. Were the number of visitors sufficient, such an industry could earn monopoly profits as it constitutes a natural monopoly. But this would be inefficient as the price—which reflects the marginal utility to consumers—is above the marginal cost. But demand is often insufficient; the demand curve lies below the average cost curve, and there is no price at which costs would be covered. However, there are situations in which marginal costs are not zero. At blockbuster exhibitions, an additional visitor does impose costs on other visitors. Such a congestion cost can be substantial.
- *Dynamic cost.* It is argued that museums face the same economic dilemma as most cultural organizations. Due to the cost disease, museums find it hard to raise the labour productivity of their employees but must follow the general wage increase that accompanies aggregate economic growth. Consequently, these organizations have constant financial problems. However, there are some possibilities for productivity advances in the museum industry: items can be shown on the internet; surveillance can be undertaken by cameras; organizational progress may rely on more volunteers; activities may be outsourced; and institutional settings may be changed, for instance by introducing New Public Management for public museums or privatizing them completely. All these changes work in the opposite direction of the cost disease.
- *High opportunity costs.* In their collected art works, museums own a huge endowment of high value. The paintings produce both storage and conservation costs and opportunity costs. The real costs of this capital stock would become apparent if museums borrowed money to buy the works of art. The annual interest that the museum would have to pay constitutes the real costs of capital. The opportunity cost of a painting is its monetary value used in an alternative investment. The annual rate on return can thus be seen as the cost of the artwork. For most museums, the value of their holdings is by far their greatest asset. At least some museums have realized that a closed museum costs more than just the operating expenses of the building. There are alternative uses for the rooms of the museum. The museum can, for instance, rent out rooms for business lunches and social events.

Most museums do not put a value on their collection in their accounts. Museums understate their true capital costs by not taking opportunity costs into account. This practice leads to an understatement of the losses and an overstatement of potential

revenues. A productive unit should choose its outcome level by comparing costs and revenue. If all costs are not taken into account, museums attain too large a size.

10.3.2 Firm Structure

Museums can take various organizational forms. Mainly, they can be private for-profit organizations, private non-profit organizations, and public organizations run in a non-profitable way. For Europe and for the United States, the non-profit organizational form is the predominant structure for museums. Different hypotheses can be advanced to explain the dominance of non-profit firms in the museum world and the arts in general. Non-profit organizations were founded to help meet an unsatisfied demand for public goods. Alternatively, the cost structure of museums can explain part of the predominance of non-profit organizations.

Most museums face a demand curve that lies below the average cost curve. This makes it impossible to set a price at which total admission receipts cover the total cost of the museum. If price discrimination is not applicable, or only of limited use, arts organizations can still ask individuals for voluntary price discrimination. Visitors volunteer to pay more than the official admission price and thus become donors. The non-profit form is better than the for-profit enterprise in attracting donations, because consumers lack exact information about the quality of the goods and services provided. Donors then prefer non-profit firms, where the possibility that the managers of the firm exploit donors and consumers is taken to be more limited.

10.4 Museum Behaviour

The output a museum produces is not given but can be chosen by the art organization—as can the input and the technology used. As resources are scarce, museums have to make decisions where the emphasis should be. Should they produce a lot of exhibitions, and so increase the number of visitors, or should they put more emphasis on raising additional income in restaurants and shops?

Instead of taking for granted that managers of museums behave entirely in the interests of the museums, imagine that the directorate is concerned primarily with the personal utility of its members. The directors' utility depends on their own incomes and the prestige they obtain within their reference group, which consists mainly of art lovers and the international museum community. A second source of amenity is derived from the agreeable working conditions and job security. But the museum directorate is not free to simply pursue its own goals, because its members face certain constraints on their actions. Differences in these institutionally determined restrictions explain the museum management's behaviour.

The finances available are the most important constraint on the museum's directorate. Other constraints, such as limited space and legal and administrative burdens

imposed by bureaucracy and labour unions can also weigh heavily. The source of income differs considerably between museums. While some depend mostly on public grants, others rely exclusively on private money, such as donations, sponsorship, and income generated from entrance fees, shops, and restaurants.

Purely public museums. Directors of purely public museums rely mostly on public grants. The government allocates them funds to cover the expenses considered necessary for fulfilling their tasks. While they are expected to keep within the budget, if a deficit occurs, it will be covered by the public purse. This institutional setting provides little incentive to generate additional income and to keep costs within budget. The directorate will not allocate energy and resources generating additional income, because any additional money goes back into the national treasury. If they were to make a surplus, the public grants would correspondingly decrease, which acts as an implicit tax of 100% on profits. The museum's management tends to emphasize non-commercial aspects. When the directorate is not forced to cover costs using its own efforts, it can legitimize its activities by referring to intrinsic artistic, scientific, and historical values. This application of non-commercial standards helps the museum directors to achieve their goal of prestige, top performance, and pleasant working conditions. These conditions lead to the following behaviour:

- Public museums do not sell any work of art from their art collection because the directorate cannot use the income generated. Moreover, selling works of art may attract criticism from politicians, especially if their value afterwards rises above the selling price.
- Directors of public museums are little interested in the number of visitors as such, but they depend on it in the longer run. In the budgetary process by the public administration their activity is often evaluated simply in terms of the number of visitors—not their contribution to what can be considered the public good. Therefore, exhibitions tend to be designed to please an insider group of art adepts.
- As a consequence, at least in the past visitors' amenities in public museums often were poorly developed. Relatively little attention was paid to the profitability of museum shops, restaurants, and cafeterias.

Purely private museums. Directors of purely private museums, on the other hand, have a strong incentive to increase their income, because their survival depends on money from entrance fees, the restaurant, shop, and additional money from sponsors and donors. If private museums generate a surplus, they are able to use it for future undertakings. As a result,

- Private museums rely on the market when managing their collection. Museums actively sell paintings that no longer fit the collection and use the money to buy new works of art.
- Private museums are more concerned with attracting visitors. Blockbuster exhibitions guarantee that the museum will earn revenue, because the preferences of a larger group of people are taken into account. Hence, the exhibitions are better arranged from a didactic point of view, appealingly presented, and above all the works of art are shown in a context attractive to a large crowd.

- Private museums emphasize visitors' amenities. The museum directorate makes an effort to satisfy the preferences of the visitors.

The difference in behaviour between public and private museums has narrowed over the last decades. Both public and private museums seek to attract funds from outside in order to be able to mount large special exhibitions and to cover their deficits. In contrast, if museums gain substantial revenues from the museum shop and restaurant, support from both the government and private sponsors tends to be reduced.

The performance of both types of museums tends to be evaluated by the number of visitors. In earlier times, this was not the case; museums were considered to be socially valuable by their mere existence. Today, all types of museums make a great effort to attract as many visitors as possible. These activities sometimes go so far that public museums almost behave like private museums. This raises the question why there are public museums at all.

Museums dependent on donations. Contributions to non-profit museums may be deductible under the income tax rule for individuals and corporations in certain countries. When the marginal tax rate falls, donations become less attractive. Tax-deductible status affects behaviour fundamentally. There is every incentive to avoid profits by charging low prices (which strengthens the legitimacy of tax-deductible status), while there is also an incentive to take out profits in the form of various kinds of excess payments that show up as costs.

Museum directors have a strong incentive to attract donors. They devote a great deal of effort and skilled resources to this end. Donors can be pleased in various ways, which influences the behaviour of the museum management. Donors can exercise some measure of control over the activities of museums. They directly influence museum policy by either interfering in the programming or by setting strongly binding legal limitations on the collections they donate. Most donors want to highlight their own artistic visions. Museums dependent on donations are rarely able to manage their collections on the market, which imposes considerable opportunity costs on museums.

A donor can be pleased when a museum publicizes the donor's contribution, thus enhancing their prestige and social status. Museums have developed an elaborate system of honours ranging from appropriate attributes ("benefactor", "patron", "contributor", etc.), to naming rooms, wings, and even whole buildings after the donor.

Museums must give the impression that the donations are effectively used. The art institution's good reputation with the public and the media is crucial for the flow of donations. This induces the museum directorate to use the museum's money efficiently.

10.5 Collection Management

In most art museums in the world, a considerable proportion of the holdings of paintings (often 80 to 90%) is not exhibited and not accessible, except possibly to specialists. The holdings then serve a solely archival role. What constitutes the major part of the wealth of an art museum does not appear in the balance sheet; the bookkeeping procedure of art museums does not even mention that the paintings collected are of any value, although at today's art market prices, collections of even minor museums are likely to be worth dozens of millions of Euro. In the case of major museums, the value may amount to many hundreds of millions of Euro. The museum managers are well aware that their holdings are very valuable. But why do managers systematically disregard these large sums of money? Three reasons can be proposed to explain the behaviour of museum management:

- One reason may be that the government imposes a legal constraint on selling. Many, or even most, public museums in continental Europe are prohibited from selling their art work. It is often allowed in the United States and to a lesser extent also in Britain.
- There may be voluntary contracts between the museum directorate and donors, who often want to keep the collection they give intact and often require it to be shown in particular rooms. The directorate is faced with a trade-off between receiving additional paintings and having to accept additional restrictions. If it decides to accept the gift, its value must be higher than the cost of the restrictions involved. Today, few museums accept such restrictions attached to a donation.
- The most convincing explanation for the behaviour is the effect of institutional conditions. For public museums, the museum directorate has no incentive to sell its holdings in storage. When a painting is sold, the revenue gained is not added to the museum's disposable income but, according to the rules of the public administration in most countries, goes into the general public treasury. Even if this is not the case, the budget allocated to the museum is most likely to be correspondingly reduced. This institutional setting dampens all incentives to manage the collection on the market. Selling paintings means that the existing stock of art is at least partly monetized, which eases outside interference by politicians and parliamentarians with the museum's business. The museum directorate's performance becomes easier to evaluate, and the buying and selling prices of particular paintings can be compared. As long as the criteria for evaluation are exclusively of an art-historical nature, the museum community is to a substantial extent able to define its performance itself. This is a useful and successful survival strategy that museum administrations do not voluntarily relinquish.

In contrast, private American art museums are indeed active in selling and buying art in order to suit their purposes.

Collections serve an important function by mounting special exhibitions. An art museum can only borrow paintings from another museum if it is able to reciprocate in the future. This establishes a club-like situation in which only museums with valuable holdings are able to participate.

10.6 Entrance Fees

There are large differences between museums in the way they set their entrance fees. Mr Sloane, whose donation led to the founding of the British Museum, imposed an explicit restriction not to charge an entrance fee. Still today, most British museums do not charge their visitors. Even in the United States, some museums, in particular the national ones, do not levy an explicit entrance fee. There are some positive externalities connected with a museum, as discussed before. Therefore, the museum should be funded with tax money. But the benefits are not distributed equally, and an accurate taxation according to these benefits is almost impossible. Those who visit a museum probably benefit the most from the museum. Therefore, an entrance fee should be levied over and above the contribution from general taxation. In the system of free admission, all taxpayers have to carry the total cost of running a museum, but the lower income groups who rarely visit museums are also burdened by the necessary taxation.

A variety of pricing options exists besides free entrance: donation boxes with and without price suggestions, seasonal tickets with zero marginal pricing for a particular entry, a free day policy, and a more sophisticated price discrimination. Price discrimination can be undertaken at times of high demand and/or with respect to the type of visitor. Many museums, even those that do not charge for their permanent collection, have higher entrance fees for special exhibitions. Additionally, a museum can charge more at weekends and less during summer holidays. Tourists could be charged more than residents. Prices can also be differentiated between visitors who want to spend little time on the visit to a museum and those who want to spend ample time. In periods of high demand, when the art museum's capacity is fully used, two entry fees can be set, a high and a low one. The high-priced entry will have a correspondingly shorter queue and will be used by the first category of visitors. The low-priced entry option will be used by the second category of visitors, among them students and other young people who do not want to spend much money but have plenty of time at their disposal. Price differentiation is advantageous for both categories of visitors (one gets in more quickly, the other pays less) and for the museum administration, which can therefore raise its revenue.

The question of how pricing influences the finances of the museum not only depends on the price elasticity of demand. Charging can also influence the flow of public subsidies and donations. Moreover, pricing decisions can influence the income generated with ancillary goods; for instance, revenue from the shop and restaurant depends on the number of visitors.

10.7 Commercial Activities

Besides the core activities of museums, which are directly related to the works exhibited or stored, most museums also engage in ancillary activities. The revenues

from these activities can make a large contribution to cover operating costs. Museums operate museum shops, restaurants, and cafés, sell catalogues, make money from parking lots, and organize cultural trips. Today, several museums not only operate shops on the museum's premises but even run off-site stores in the city the museum is located in, or even in a totally different city.

10.8 Conclusion

Due to the cost disease and the free provision of social non-use values, many museums are in constant financial distress. There are several possibilities to mitigate this problem. A museum can gain additional revenue by organizing blockbuster exhibitions. However, the costs of doing so are substantial, in particular due to high insurance and transport costs. A museum can also gain additional revenue by charging higher prices for visitors with low price elasticity, and it can engage in more commercial activities such as running profitable museum shops and renting out the museum space for social occasions. The policy of not selling any part of the collection needs to be reconsidered. There should be more flexibility in this regard. For instance, works never shown to the public could be sold to another institution prepared to exhibit them.

Related Literature

This chapter uses parts of the following joint paper

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