

THE SUSTAINABLE MANAGEMENT OF MUSEUMS: AN ITALIAN PERSPECTIVE

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Abstract

Purpose – The theme of sustainability in museums has not been sufficiently explored in the international literature on cultural heritage management as well as few museums are already involved in programs to promote sustainable development. Considering this gap, the purpose of this study is twofold. Firstly, to provide a conceptual model applying the principles of sustainable development to the enhancement of cultural heritage and, secondly, to analyze the case of Marche Region.

Design – After analysing the three dimensions of sustainability – environmental, social and economic – and their possible application to museum management, the research tested the theoretical assumptions through an exploratory qualitative/ quantitative survey.

Methodology –The structured questionnaire was submitted to a sample of museums and consisted of a wide range of questions, primarily, although not exclusively, quantitative, which examined both museum management and sustainability orientation.

Approach – The analysis focused on two different dimensions: the first aimed at understanding the perception of sustainability and the value of its components, the second aimed at investigating museums' willingness and reasons to engage in concrete sustainability-oriented actions.

Finding – The field research showed Marche Region's museums have a full awareness of the benefits of sustainable management. However, the lack of a managerial approach to the museums' development compromises their ability to transfer this orientation in operational policies.

Originality of research – The paper provides a multidimensional model for measuring the level of museum sustainability, able to analyze cultural and behavioral components. This analysis identifies possible areas of intervention for regional policies aimed at improving sustainability orientation of museums.

Keywords Sustainability, museum management, cultural heritage, tourism

1. INTRODUCTION

Sustainability could offer great opportunities for museums, suggesting not only new ways to interpret and communicate heritage and reach a wider audience, but also providing innovative and effective solutions to manage collections and relationships with local stakeholders (Merriman 2008). In addition, the culture of sustainability brings better use of all resources and social responsibility (Museum Association 2008, 5). While recently an increasing number of papers and reports is dealing with sustainable development, there is not much literature specifically on sustainability in museums. Just some practice recommendations or guidelines for museums and

galleries are available, mainly deriving from museum associations or organizations “interested in ‘greening’ initiatives” (Stylianou-Lambert *et al.* 2014, 569) (Museums Australia 2003; Museum Association 2008 and 2009; National Museum Directors’ Conference 2009; Madan 2011).

Sharing these assumptions, this research first concentrated on the three dimensions of sustainability – environmental, social and economic – tailoring them to museum missions, needs and activities. Both recent scientific achievements on this matter and their application in the museum context were analysed, focusing on issues for Italian museums in particular.

Second, the research tested the theoretical framework on Marche Region’s museums (Italy) measuring the degree of sustainability orientation and analysing policies toward sustainability. An exploratory qualitative/ quantitative survey was accomplished in 2011 on a sample of 61 museums, which is a representative example of the heterogeneity and complexity of the Italian museum system. These institutions could find a source of competitive advantage in the tight cultural relationship with the local context. Hence, they are a distinctive asset that could attract new and increasing segments of tourists interested in local culture. However, they have a potential value that has not yet been expressed nor developed. Therefore, they still provide scant contribution to the sustainable development of their territory.

The field research aimed at answering the following questions:

- What is the museums’ current approach to environmental, social and economic sustainability?
- What ecological measures have museums already adopted?
- Which role do museum networks have in achieving social and economic sustainability?

Considering the role of museums for tourism development in peripheral areas, the focus of this survey is on the relationship between museums and sustainable tourism. Sustainability orientation was measured through a framework based on two different dimensions: the first one (*cultural*), referred to museum managers’ awareness of the meaning of sustainable tourism development and their willingness to invest in policies for sustainability; the second one (*behavioral*), referred to their sustainability-oriented actions. The intersection of these dimensions showed the level of sustainability orientation, the capability to pursue sustainability’s principles and prescriptions, and then the means to satisfy all stakeholders.

2. SUSTAINABILITY IN MUSEUM MANAGEMENT

Sharing the definition of sustainable development given by the Brundtland Commission in 1987¹, it is possible to argue that sustainability is implicitly part of a museum's mission, corresponding not only to preserving and enhancing cultural heritage and its value, even for future generations, but also to contributing to the cultural well-being of the community (Worts 2006). Museums, just as other organizations, are required to assume sustainable behaviours, paying attention to environmental, social and economic issues². Environmental issues concern mostly measures that help reducing energy consumption. Social issues invoke physical and intellectual accessibility for all visitors. Finally, considering that museums are non-profit institutions and merit goods, from the economic point of view and according to the value-for-money (VFM) framework, museums are required to create positive externalities to be sustained by public expenditures (Carnegie and Wolnizer 1996; Holden 2006; Montella 2009).

Therefore, museum sustainability should manage all these dimensions *as a whole*, linking public value creation, political management in the authorizing environment and operational capacity (Moore 1995, 2000; Moore and Moore 2005). According to Moore's Strategic Triangle in the public- and non-profit sector, three crucial points have to be taken in concern. (1) 'Public value creation' concerns public sector mission. (2) 'Political management' refers to the relationship between the organization and its political stakeholders, "thereby ensuring that resources and authority will flow" (Weinberg and Lewis 2009, 258). (3) 'Operational capacity' relates to systems, processes and resources to push the organization to accomplish its goals. This approach reminds public managers that the solution to one problem has to fit with the solutions for the others.

Sharing a sustainable approach to museum management, museums should create long-term value according to a multi-dimensional and multi-stakeholder approach (Burton and Scott 2003; Janes and Conaty 2005; Koster and Falk 2007; Scott 2008 and 2013) for:

1. Cultural heritage: conservation of the cultural heritage collections for future generations;
2. Involved organizations: developing museums through effective and efficient management, achieving high quality levels of museum facilities and performances using a service-centered approach (Alcaraz *et. al.* 2009);

¹ According to the Brundtland Commission definition, sustainable development means "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987, Report of the World Commission on Environment and Development, General Assembly Resolution 42/187, 11 December 1987, Retrieved: 2007-08-05, <<http://www.un-documents.net/a42r187.htm>>)

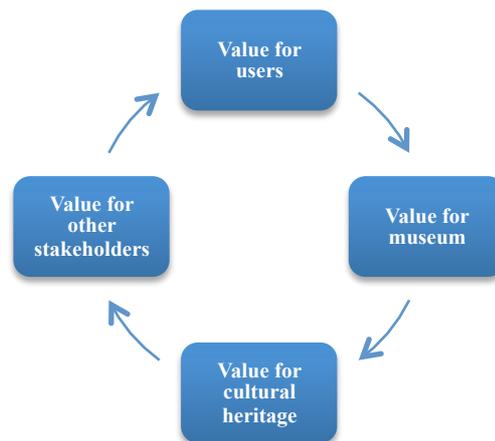
² Some recent approach also incorporates culture into sustainable development as a forth pillar concerning "the consideration, preservation, and presentation of tangible and intangible heritage, artistic production, as well as the knowledge and skills of various social groups, communities and nations" (Stylianou-Lambert *et al.* 2014, 569).

3. Stakeholders: directly satisfying cultural needs expressed by visitors and economic needs expressed by staff; indirectly, creating socio-cultural and economic benefits for local communities and operators (Montella 2009; Stylianou-Lambert *et al.* 2014).

In summary, activating a virtuous cycle, the museum that succeeds in creating cultural value for its users creates economic value for itself, attracting more resources to guarantee the long-term conservation of its tangible and intangible cultural heritage – directly, through revenue from tickets, and indirectly, through public and private funding. Consequently, continuously improving its performance, the museum could innovate its offer, satisfying new audiences that increase in number and creating benefits for the local context, e.g. development of economic and professional opportunities, social cohesion and higher quality of life (Siu *et al.* 2013; Villeneuve 2013; Di Pietro *et al.* 2014) (fig. 1).

Literature review on sustainability in museum management shows that most of the academic and professional studies have primarily concentrated on two aspects. On the one hand, this is the environmental respect, i.e. museum policies and practices that ought to reduce the environmental impact of cultural activities (Zannis *et al.* 2006; Sala and Gallo 2007; Farreny *et al.* 2012; Bickersteth 2014; De Graaf *et al.* 2014; Rota *et al.* 2015) and build critical information on climate change (Hebda 2007; Cameron 2012). On the other hand, there are socio-cultural actions, i.e. a museum's contribution to the community well-being through programs, e.g. expositions, educational activities, conferences, etc. that promote sustainability, such as the adoption of socially responsible behaviours towards new citizens and new generations (Janes and Conaty 2005). Less attention has been given to the economic dimension of sustainability (Babbidge 2000; Wild 2011; Lindqvist 2012; Woodward 2012).

Fig. 1: **Museum value-creation according to a multi-dimensional and multi-stakeholder approach**



Source: our elaboration

2.1. Environmental sustainability

For the last ten years, international museum studies have focused on energy consumption (Brophy and Wylei 2008; Madan 2011). Even though they are not the most energy-hungry buildings, museums should adhere to high standards of lighting, climate control, safety and security to ensure both better conditions of conservation for collections, e.g. temperature, humidity, light expositions, insulation from pathogen agents, etc. and comfort and well-being for users, e.g. visitors and staff (Bickersteth 2014; De Graaf *et al.* 2014). In addition, museums, as well as other organizations, should reduce waste and consider the environmental impact of exploiting other resources necessary to develop their activity, such as building materials, equipment, water, paper, etc. (Farreny *et al.* 2012).

In this field, studies focused primarily on construction systems – projects of new eco-sustainable buildings (Zannis *et al.* 2006). Among innovative structural solutions, besides new eco-sustainable buildings, such as the California Academy of Sciences designed by Renzo Piano in San Francisco³ (Kocioleck 2006; Brophy and Wylie 2008; Civita 2010), technological or structural works for reconversion and retrofitting (partial restoration) of old buildings stand out (Rota *et al.* 2015). An example is provided by the program ‘Museums – Energy efficiency and sustainability in retrofitted and new museum buildings’, that involved two Italian museums, Museum Bardini in Florence and Museum Pompeo Aria in Marzabotto, between 2004 and 2009 (Sala and Gallo 2007). Finally, ‘end-of-pipe’ techniques should be considered, i.e. light interventions such as using eco-save bulbs (LED or potassium iodide lamp) in a lighting system, e.g. in the State Hermitage Museum in St Petersburg or the Banbury Museum in the UK. In Italy, the new scientific museums, such as ‘Explora’ and ‘A come Ambiente’ are using best practices. These museums are exceptions in an area where sustainability will become a real key issue in museum management if specific incentives are identified to promote and facilitate investments in this direction.

The attention to issues linked to the measurement and evaluation of museum activities’ impact is not less important (Brophy and Wylie 2008). Tools have been developed to measure the collateral effects of museum activities on the environment, such as ecological or carbon footprints (National Museum Directors’ Conference 2009; Lambert and Henderson 2011), which is a simple metric that shows how an activity contributes to climate change.

Encompassing a dynamic definition of sustainability, Madan (2011) actually focused on organizational issues and staff involvement, with particular attention to the process leading up to sustainable management. After identifying the vision and analysing current situations in museums – above all the management gap – challenges to be faced

³ The building – hosting a museum of natural history, an aquarium and a planetarium – has obtained the certification of the world’s greenest museum. It has a 2.5 acre living roof, where 1.7 million native plants have been planted, high-performance glass throughout the building, radiant floor heating, reverse osmosis humidification, a solar canopy around the perimeter of the roof, insulation installed in the building’s walls made from recycled blue jeans, etc. At least 90% of regularly occupied spaces have access to daylight and outside views, reducing energy use and heat gain from electric lighting. The Louvre in Abu Dhabi by Jean Nouvel is also based on an innovative system of refreshing the environment.

to develop sustainability were seen as a strategy through SMART goals (specific, measurable, achievable, relevant and time-bound).

Sharing these assumptions, in 2009 the Museum Association in the UK proposed an action plan with ten actions in three areas: supporting excellence, promoting partnerships and building capacity (Museums, Libraries and Archives Council 2009, 8). The action plan, based on a bottom-up approach and museum independence, is more difficult to apply in Italy, where museums are public and functionally and administratively dependent on heterogeneous superior units, characterized by complex decision systems (Civita 2010).

2.2. Social sustainability

The social dimension of sustainability is most connected to the museum mission, which the International Council of Museums (ICOM) considers an “institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment”. Therefore, a museum is sustainable if it continually and holistically serves its audiences and communities, creating long-term value both for its stakeholders and future generations – equity in the treatment of different generations over time (*inter-generational equity* or *inter-temporal distributive justice*) is a key issue (Throsby 2002, 107). The challenge for museums is two-fold: on the one hand, they must reach a wider and more diversified audience, reflecting the complex demographic composition of contemporary society; on the other hand, they must ensure that the value of cultural heritage is understood and cultural capital increased (Campolmi 2013).

Particular attention should be addressed to social changes that are occurring in Europe, which also create challenges and opportunities for cultural heritage management (European Foresight Platform 2012). Hence, international migration and an aging population play an important role in European population change. These changes set new goals for museums: international migration increases the cultural diversity of population and, consequently, creates a greater diversity of culture providers and consumers to satisfy, whereas an aging population implies more spare time for an increasing number of people, hence a wider potential audience for museums. Furthermore, the increasing familiarity of young generations with ICT, e.g. Prensky’s ‘digital natives’, reshapes the way that museums provide services, improving users’ involvement and participation.

In this context, museums are required to become agents of social cohesion. The volume *Looking Reality in the Eye. Museums and Social Responsibility* (Janes and Conaty 2005) provides a wide set of case studies, focusing on social responsibility and museum accountability towards communities through deep relationships with all stakeholders. In particular, Sutter and Worts consider museums as agents and active facilitators of social change because of their contribution to history and cultural diversity being understood: “just as today’s societies are incredibly diverse and complex, museums are no longer the monolithic institutions of the past. Instead, many are focusing their efforts more narrowly, telling particular stories with larger meanings.

Often, these stories reflect issues and people that have been marginalized by mainstream society – First Nations, immigrants, and chronic illness. This approach can also lead to an activism that embraces community issues and inspirations, in an effort to provide value and meaning” (Janes and Conaty 2005, 3).

Finally, in order to provide services that not only satisfy the conservation need of collections, but also fulfill needs requested by visitors, the presence of qualified and responsible personnel is a critical requirement for social sustainable development of museums (Hayton 2010; Silence 2010).

2.3. Economic sustainability

Considering its importance for museum survival, literature on museum management has dealt with economic sustainability independently of the crucial issue of sustainable development (Babbidge 2000; Wild 2011; Lindqvist 2012; Woodward 2012). A museum is economically sustainable if it improves its performances, not only securing additional funding but also using its scant resources better, according to the British model of “efficiency with a conscience” (National Trust, Strategic Plan 2004-2007). Furthermore, for long-term sustainability museums should attract and satisfy new visitor flows, adopting an audience-centric approach and improving visitor relationship management (Siu *et al.* 2013; Villeneuve 2013; Di Pietro *et al.* 2014).

According to the value-for-money (VFM) framework based on the 3Es (economy, efficiency and effectiveness), performance measurement and accountability should be introduced in museums. They should encompass cost indicators (economy), level of resourcing indicators, source of funds indicators, volume of service and productivity indicators (efficiency), availability of service, quality, and outcome indicators (effectiveness) (Jackson 1994; Carnegie and Wolnizer 1996; Armstrong and Tomes 1996; Zorloni 2010).

Therefore, measurement, communication and evaluation of the value that museums create become an economic crucial issue (Koster 2006; Weil 2006; Koster and Falk 2007). Scott (2008) identifies a *use value*, which equals direct consumption; an *institutional value*, when well-managed institutions generate trust in the public realm and add value to government. The *instrumental value* describes governments’ expected return on public investments related to evidence of the achievement of social and economic policy objectives. “The recipients are (a) the economy – through civic branding, tourism, employment and the multiplier effect on local economies; (b) communities – through increased social capital, social cohesion, tolerance for cultural diversity, urban regeneration and civic participation; and (c) individuals – through benefits such as learning, personal well-being and health” (Scott 2008, 34-35).

If we consider small institutions, these goals could be achieved sharing resources with other cultural institutions – museums, libraries, archives – to reach economies of scale, scope and specialization, for structural restoration and functional adjustment and to provide cultural and commercial services, identifying the priority actions at a bigger level (Montella 2003).

An important tool could be the cooperation among different actors. Since the United Nations Conference of Rio de Janeiro, the Fifth European Community environment programme has assumed a cooperative orientation, which is an essential start-up, not only to match development and safeguard the environment, but also to develop inter-sector policies based on dialogue and cooperation among different actors.

In summary, when decisions are complex, in addition to the unitary management of financial resources, involving all interested private and public players is required. The economic sustainability of choices should not be reduced to available resources, which also depends on the model of governance, the effectiveness of networks and their capability to share common goals.

3. SUSTAINABILITY IN THE MARCHE REGION'S MUSEUMS

3.1. Marche region's museums

By applying the model in Figure 1 to the Italian cultural heritage, it is useful to remember that:

- The Italian distinctive feature and competitive advantage is the continuity of cultural heritage, the all-encompassing, pervasive material evidence of humanity and its environment and the tight historical, cultural and economic relationship between cultural heritage preserved in museums and the local context (Montella 2003; Golinelli 2008);
- Local cultural heritage is a valuable, unique and inimitable resource (Barney 1991), which has to be enhanced to promote local sustainable tourism development in peripheral areas and satisfy the new and growing demand of cultural tourism;
- The government, regions and other local administrations ensure the enhancement of cultural items preserved in museums and other cultural institutions and sites.

Therefore, the management of Italian museums, especially of the local ones, is sustainable, if it succeeds in enhancing the deep historical relationship between museum items and diffused cultural heritage and other museums, also using network organizations, achieving economic benefits such as economies of scale, scope and specialization. Hence, it could create long-term value in the abovementioned multi-dimensional and multi-stakeholder perspective.

In this section, we analyse the case study of the Marche Region's museums that provides an example of the fragmented and heterogeneous museum situation in the centre of Italy where there are many public, local and small museums. In many cases, they are almost unknown, mainly owning historical or artistic collections, and having scant resources and a blurred identity. Facilities and supplies are not the only weaknesses: museum performances – e.g. conservation and visitor services management – must be considered as well.

3.2. Methodology

3.2.1. Survey structure

Sharing the abovementioned, integrated approach to museum sustainability, an exploratory research has been led through a qualitative/ quantitative survey addressing museum curators or managers. They were selected among 260 public and private institutions, which were open to the public and participated in the first on-line self-evaluation campaign carried out in the Marche Region in 2007. Collections/ exhibitions that open only on request were not included, nor were other expositions that were not classified as museums.

The semi-structured questionnaire consisted of a wide range of questions, primarily, although not exclusively, quantitative, which examined both museum management, e.g. services, relationships with visitors and other stakeholders, marketing strategies, etc. and sustainability orientation, as a key factor for the success of public policies aiming at sustainable development.

Considering that museums have a crucial role in the development of sustainable tourism, contributing to the definition of the quality of the local cultural offer, and hence to the development of a region's attractiveness, sustainability orientation was measured through a framework based on two different dimensions:

- 1) *Cultural*: referred to museum managers' awareness of the meaning of sustainable tourism development and their willingness to invest in policies for sustainability;
- 2) *Behavioral*: referred to their sustainability-oriented actions.

The intersection of these dimensions showed the level of sustainability orientation, the capability to pursue sustainability's principles and prescriptions, and then the means to satisfy all stakeholders.

The environmental, social and economic dimensions were transversally analysed. Particularly, four variables that are related to environmental sustainability were investigated: efficient energy use, water conservation, waste collection and green purchasing strategies. The social dimension of sustainability was investigated analysing the number of visitors and the elimination of architectural barriers; further research should also consider visitor satisfaction and social outcome. Finally, museums' participation in museum networks as well as their achievements and benefits were evaluated, in order to identify economic sustainable opportunities that have not yet been exploited.

3.2.2. Sample profile

Between February and March 2011, the questionnaire was submitted to 61 local museums, a representative sample of the heterogeneity and complexity of the regional museum system, as regards the types of collections, property and capillary distribution. Fifty-nine percent (59%) of the interviewed museums are local institutions (57% are civic and 2% are provincial), 21% are ecclesiastical, 8% private, 3% university museums and 2% national.

Considering the types of collections in the museums, the survey registered the following: 41% art, 18% specialized material, 17% archaeology, 10% ethnography and anthropology, 7% natural history and science, 3% history, 11% territory, 1% technology and science.

Regarding museum visitors, 50% of the interviewed museums have less than 2,500 visitors per year; among these institutions, 23% register between 1,000 and 2,500 visitors, while 13% fluctuate between 500 and 1,000 and 14% have less than 500 visitors. As far as the remaining 50% is concerned, 21% register between 2,500 and 5,000 visitors per year, 16% between 5,000 and 10,000 and 13% exceed 10,000 visitors. These data reveal the low attractiveness of these museums, often located in small towns.

Concerning staff, 40% of the interviewed museums have volunteers, 18% have employees with open-ended contracts, 13% have employees with fixed-term contracts, 16% have employees with other kinds of contracts, and 16% make use of external employees. Moreover, people with an open-ended or a fixed-term contract are very often public employees who also deal with other offices and activities, e.g. libraries, education, cultural events, etc. and are not actual museum employees. The consequences for this shortage of managerial structure, almost nonexistent, are relevant. For eight of the 13 museums making use of voluntary workers, volunteers are not actually additional help for museum professionals, but the only human resource personnel that the museums have. Specific staff professional training is available just in a few cases where there are external employees.

Considering these data we can conclude that the interviewed museums are a representative sample of the regional museum system, not only because of the variety of their collections, but also due to the lack of management skills. If we analyse the relationships with visitors and other local stakeholders, only 18% of them have a service charter (in many cases not yet available to the public) and only 6% have periodic meetings with local stakeholders.

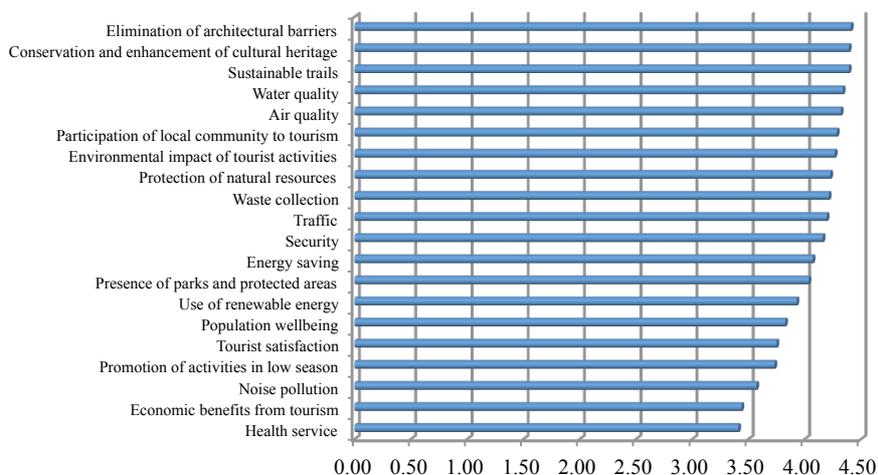
3.3. Findings

3.3.1. Marche Region's Museums' awareness of sustainability

According to a bottom-up approach, the effectiveness of sustainable policies should not exclude the awareness or the participation of all the players involved in this process. Therefore, two questions were formulated: the first, aiming at understanding the perception museums have of sustainable tourism, including the cultural, landscape and environmental dimensions; and the second, formulated to test their willingness to start concrete sustainable actions and motivations.

Concerning the first question (“*When we talk about sustainability, what factors should be considered and in what measure?*”), using a five-point Likert scale⁴, museums were asked to associate some variables to sustainable tourism. “The elimination of architectural barriers” achieved the highest score (4.41), followed, with a slight gap, by “the conservation and enhancement of cultural heritage” and “the proposal of sustainable trails” (4.39) (fig. 2).

Fig. 2: Variables associated with sustainable tourism



Source: our elaboration

It means that museums have a high awareness of their social function and role in the process that leads to the achievement of sustainable goals, forecasting actions addressed to the preservation and enhancement of cultural heritage and the promotion of the territory. Indeed, considering the question “*In what way is the museum a source of competitive advantage for the local context?*”, 95% of the interviewees answered that the museum is an attractive feature of the territory.

Another question investigated museums’ willingness to invest in sustainable policies (“*Is it worth investing in policies for environmental and social sustainability?*”). The great part of the interviewees (92%) provided a positive answer.

Analysing motivations, the majority of museums (89%) considered sustainability an investment for the future, 74% a moral obligation, 49% a value required by visitors and 48% a source of competitive advantage. Even though all the items received a positive result, museums reveal their greater attention to the social benefits of sustainability; their awareness of the economic benefits of sustainability is lower, especially if we consider the possibility to change it through local development opportunities.

⁴ The format of the five-level Likert scale was as follows: 1 = it does not concern sustainability; 5 = it concerns sustainability very much.

3.3.2. Museums' actions for sustainability

When analysing the capability of museums to activate policies for sustainability, four variables were considered that referred to environmental impact: efficient energy use, water conservation, waste separation and green purchasing strategies. Seventy-nine percent of museums separate waste, 36% apply measures for efficient energy use, 33% use green purchasing strategies and 30% promote actions for conserving water.

Examining motivations, in most cases (77%) this was an autonomous choice; for 33% of museums, it can be ascribed to normative prescriptions and in 10% of cases to subsidies.

Only two of 61 museums have an environmental certification (ISO 9001 and ISO 14000).

Second, the social dimensions of sustainability were investigated, focusing on the elimination of architectural barriers. Only 65% of museums have already eliminated architectural barriers; 11% only partially and 18% haven't eliminated any.

Finally, considering museums' structural and functional exigencies, and their potential value, the questionnaire focused on the economic dimension of sustainability, considering it a system value, achievable through the cooperation of all the players involved in the local sustainable development.

Considering cooperation among museums and other institutions to increase and improve museum services, 75% of museums have stable relationships with other public and private local players.

As far as network capability is concerned, the large majority of those interviewed (82%) answered that they participate in museum networks. However, when asked about the network management of museum services, 56% of the interviewees answered that they do not respect the same opening hours as organizations in the same network. Only 20% of them have the same opening hours and 24% did not know. Considering pricing policies, only 33% of the interviewees sell cards to visit several different museums (43% of them have only single tickets and 24% did not answer). The high percentage of individuals who were not able to give an answer reveals a low awareness of being a network member, hence highlighting some gaps in the museum network system.

Focusing on network marketing strategies, the interviewees revealed a weak network visibility. Even though more than the half of the museums (61%) have a museum network corporate identity for brochures and booklets, the percentage is lower if road signs are considered (31%). When analysing the museum setting, 30% adopt the same design for boards and labels, 21% for museum furniture, display and renovation and 20% for museum signs. Finally, less than 2% have a uniform for front-office staff.

Moreover, in 62% of the museums, visitors can find information about other museums in the network, but only 34% of them have a guide or catalogue of the network's museums.

Using a five-point Likert scale⁵, museums were asked to score perceived benefits of network organization. Even though the score never reaches 4 points (good), the highest score concerns museums' visibility (3.50), followed by inter-institution cooperation (3.30), service quality (3.18), staff involvement (3.07), and increase in visitors (2.98). The least positive scores were the full use of personnel's productive capacity (2.21), and economies of scale (2.47).

As far as the benefits for the local context, museums gave a positive – though not optimal – answer about territory promotion (3.33) and citizens' awareness of cultural and environment protection (3.21). Lower scores were given to social cohesion (2.84), start-up for new economical activities and entrepreneurship (2.40), increase in employment (2.37), and the development of activities in other sectors (2.23).

When asking about the strategies that cultural networks currently follow to enhance participating museums and their deep relationship with the local context, interviewees gave the highest score to guided tours and special openings during local cultural events (3.88). They also gave average importance to the presentation of the local cultural offerings (3.50), the presentation of the diffused museum, links between museum items and local context, history of museums and their collections, and the organization of tourist cultural tours (3.38), followed by the presentation of the network's museums and how to find them (3.23) and the organization of events in association with local cultural institutions and firms (3.15). Not much value was given to the updating of information and educational tools (2.85), to the promotion of scientific research and publishing about the network's museums and collections (2.80), the explanation of the original use value of cultural items (2.62) or the presentation and marketing of local products, e.g. wine and food, crafts, etc. inside museums (2.18).

These data confirm that museums have a low capability to communicate to their audiences the relationship of cultural heritage with the local context, which is their competitive advantage, thus revealing a low level of social and economic sustainability.

Furthermore, the majority of interviewees did not manage to explain actions pursued to develop these strategies, nor could they elaborate on the evaluation methods and tools employed to measure them and results actually achieved. They only mentioned the production of brochures and booklets and the organization of cultural tours and exhibitions.

In conclusion, the Marche's museum networks are in the early stages of a network, not yet generating enough economies of scale, scope and specialization to increase their offerings.

⁵ The format of the five-level Likert scale was as follows: 1. not at all; 2. not much; 3. average; 4. quite a lot; 5. very much.

3.4. Discussion

Museum policies are sustainable if they create long-term socio-cultural and economic value for cultural heritage conservation, service quality improvement and for stakeholders, both directly and indirectly.

The survey on a sample of museums revealed some significant gaps in management, i.e. lack of qualified personnel, restricted opening hours, lack of service charts and information tools, architectural barriers and the lack of an effective marketing approach.

Answering research questions (§ 1), the Marche's museums are aware of benefits resulting from sustainability, even though they focus on the socio-cultural aspects of sustainability rather than on its economic dimension. Aware of their role in sustainable tourism policies, they also started good environmental practices, even without grants. However, museum networks are not yet a successful tool to achieve social and economic sustainability and their capability to generate socio-economic value is still low.

Therefore, regional cultural policies need a strategic approach and a business vision based both on awareness of cultural operators and their cooperation. The region has the role of a 'key player', defining a governance model based on cross-sector planning and aimed at overcoming museums' structural constraints, in order to ensure their survival and their contribution to local development (Cerquetti and Montella 2011).

Developing the framework provided by the UK Museum Association (2009) and considering that human and financial resources are scant, regional planning should proceed on the basis of museum self-evaluation and museum priorities, implementing a differentiated and integrated strategy, based on four lines of action:

(1) *Horizontal actions – ensuring cultural heritage preservation.* They apply to all museums and collections, in order to address their urgent needs and obtain, in a short amount of time, the minimum standards of security, preservation and service supply.

(2) *Punctual actions – supporting excellence.* These actions focus only on a few museums or museum networks, outstanding for the quality of their collections or their organization, in order to achieve an excellent level of performance and provide the best cultural experiences for the public, creating narratives for new and wider audiences. Indeed, these institutions could become the showcase for regional museum policy – an exemplary goal to attain.

(3) *Cross-actions – promoting partnerships,* strengthening the links among museums, as well as between museums and other cultural bodies, and building on cross-sector partnerships and inter-related projects. First of all, cross actions aim at enhancing the diffused museum, through the planning and implementation of cultural tours, both museum-to-museum and through cultural heritage beyond museum doors.

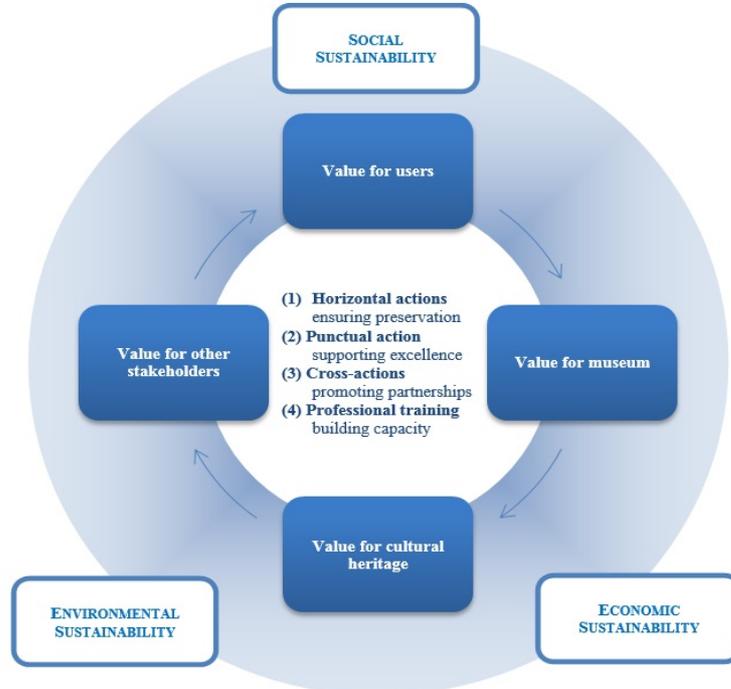
(4) *Professional training – building capacity*, investing in leadership and professional development, in scholarship and collections care, in new finance and governance models, and in digital technology, to ensure effectiveness and sustainability for the long term.

Then, developing museum networks' marketing orientation (Pencarelli and Splendiani 2011) museums may create long-term value from a multi-dimensional and multi-stakeholder perspective, creating economic benefits from cultural benefits and ensuring the environmental, social, institutional and economic sustainability of enhancement activities (fig. 3).

CONCLUSIONS

This study investigates the sustainability orientation in Italian museum management through a case study: combining *cultural* and *behavioral* components, it provides a multi-dimensional model for measuring the level of museum's environmental, social and economic sustainability. This research, although not validated on a large scale, can identify possible areas of intervention for national, regional and local policies aimed at improving the sustainability of museums. Hence, a further development should not exclude the comparison with other regional museum systems.

Fig. 3: **A Regional differentiated and integrated strategy for the sustainable development of museums**



Source: our elaboration

The research shows some limitations, which will require further studies in order to suggest future research paths. The first is the need of a more robust statistical analysis of our data. The second is the lack of longitudinal analysis, which is useful to grasp the changes adopted by museums over time. Another limitation is the lack of analysis of the other stakeholders involved in the process of sustainable development in local systems.

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