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Managerial paths, social inclusion and NBS in tactile cultural products: theory and practice

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Keywords

Tactile arts, Social inclusion and NBS, Blind people, Managerial paths, Cultural institutions, Accountability

Abstract

The aim of the work[i] is to outline the contribution to Nature-Based Solutions (NBS) of managerial paths regarding processes of social inclusion of cultural institutions. The paper addresses particular

aspects of heritage accessibility with respect to the community of a territory, making it more sensitive to disadvantaged people with special needs. Considering social inclusion as an important social challenge of NBS, the article examines a case study, the Polo Tattile (Tactile Centre), in which accessibility to culture plays a pre-eminent role, transferring the historical and artistic value of cultural products to visually impaired and blind people. Empirical study assesses the degree of social inclusion of this institution where the NBS approach helps to develop inclusive pathways and improve the perception of the reality of these disadvantaged participants. The research defines a possible accountability model through the definition of indicators to measure the inclusive aspects of managerial action as a relevant challenge of the NBS approach.

1. Introduction

NBS represents an idea that takes nature as a crucial element in evaluating and implementing processes. Everything revolves around nature; therefore, to study how human actions and choices interface with nature represents a way to interpret the impact of some managerial paths, considering nature as a resource that contributes to producing social benefits.

Solutions that consciously use nature can help satisfy different ethical and social aspects with reference to different contexts. NBS has been applied in a wide variety of sectors in order to address societal issues, such as developing green infrastructure in urban environments (Cohen-Shacham, Walters, Janzen & Maginnis, 2016; Griffiths, 1999; Hall & Roberson, 2001; Sharp, Pollock & Paddison, 2005).

The motivations that have stimulated the present research derive from the importance of the theme of social inclusion, especially for those with disabilities. Access to artworks and places of historical and artistic interest is not always easy for these players. In cultural organisations, there are still barriers, especially regarding blind people, that limit the fruition of cultural products.

Therefore, it is necessary to activate paths of social inclusion to allow disadvantaged people to enjoy artistic heritage (Tan, Tan, Lim & Kok, 2019) and obtain social benefits. In this context, nature can take on an important role, as the redevelopment of some green areas and the urban context (Sharp et al., 2005) can allow solutions to be created for these purposes.

Starting from the scarce literature, which deals with the theme of cultural organisations that promote inclusion in interventions concerning nature and the urban context (Griffiths, 1999; Hall & Roberson, 2001; Sharp et al., 2005), we wish to analyse the role of tactile museums by presenting a case study, very unique in its kind also because it comes from a process of urban redevelopment. Moreover, nature on the inside of the structure, in a simple way but with a strategic intent, favours processes of social inclusion. To this end we tried to consider the NBS approach in these organisations as a solution that management must devise and adopt to improve the condition of life of these people. In order to make these actions operationally measurable, we have to review the reporting and measurement system, according to the main scientific framework of social and environmental accountability, to consider NBS also as an economic element to be valued and social inclusion interventions, such as a societal challenge, to be achieved.

The present paper, analysing the cultural institutions that are mainly concerned with cultural heritage in museums (Bagdadli, 1997; Baldarelli, 2004; Dainelli, 2002; Donato & Visser Travagli, 2010; Magliacani, 2008; Senesi, 2002; Sibilio Parri, 2004; Zan, 1999; Zan, 2003), aims to adopt the NBS approach and the critical aspects of social inclusion in the context of tactile museums, intended for the blind and the visually impaired. NBS identify paths aimed at improving the living conditions of society, through solutions that can be found in nature or inspired by nature itself (Raymond et al., 2017, p. 1). That could help improve the degree of socialisation to achieve a more democratic use of natural resources and a better perception of the service environment (Wong, Ji & Liu, 2016).

In this context tactile arts that use nature can be considered a particular nature-related solution providing social and environmental benefits to disadvantaged people. Problems regarding blind people are of great importance since the National Institute of Statistics indicates that there are 362,000

blind people in Italy; in addition, blind people have increased by approximately 30% in the last 20 years. The phenomenon has a very interesting consistency considering the data of the 2018 WHO (World Health Organization [WHO], 2018) "An estimated 253 million people live with vision impairment: 36 million are blind and 217 million have moderate to severe vision impairment. 81% of people who are blind or have moderate or severe vision impairment are aged 50 years and above". The analysis of how managerial behaviours and specific actions linked to NBS in cultural institutions (Han & Hyun, 2017) address the issue of social inclusion is less investigated in the literature and requires more scientific attention.

The research design is oriented towards answering the main research question: "How can NBS in tactile museums pursue a social inclusion challenge and integrate managerial action and accountability processes?"

The research design develops through a deductive and inductive approach (Ferraris Franceschi, 1978; Naumes & Naumes, 2006). The deductive approach is based on the analysis of the literature contributions regarding the role of tactile arts as a solution inspired by nature to promote social inclusion as a societal challenge of NBS. Then a scientific approach that considers cultural institutions (museums) as social inclusion agent, according with the issues of social and environmental accountability, is presented (Belfiore, 2002; Coffee, 2008; Kotler, 2001; Sandell, 2000; Sandell, 2002).

Under the methodological profile, the framework is used to analyse a research case study (Naumes & Naumes, 2006): the tactile multimedia Tactile Centre of Catania, that is hereafter called the "Tactile Pole" in this paper. The survey examines the critical aspect of accessibility with regard to a category of disadvantaged players and highlights how the NBS approach contributes to developing paths of social inclusion for these subjects by creating a link among nature, culture and historical heritage. The interpretative methodology is used to capture the managerial perspective of the museum in the realisation of social inclusion pathways according to specific aspects of NBS that emphasise the individual, the community and the social and environmental context. The empirical research is based

on the study and interpretation of accounting documents and quantitative and qualitative data and information obtained from the consultation of Tactile Pole websites, direct interviews (via questionnaire) to directors and managers, as well as reports analysis.

The present contribution wishes to define the role of tactile arts, which can be developed with managerial solutions inspired by nature and can affect social inclusion processes, activated to educate society to justice and social cohesion.

In order to realise the purpose of the present study and to enrich the literature on NBS with respect to the theme of social inclusion, the paper involves the following steps of analysis.

The first section introduces the motivations and the main research question. The second one outlines NBS as a solution that responds to the societal challenge of social inclusion and cohesion. To evaluating the impact of social inclusion the Sandell's model is described. It is useful to identify some areas of analysis to interpret the processes of social inclusion and to construct a set of indicators, that may be suitable to measure performances attained and to contribute to accountability in this field. In the third, to measuring social inclusion in cultural institutions as a societal challenge of NBS, an accountability model is defined.

In order to adopt the theoretical framework a case study is presented (sections 4-5). The model is implemented to evaluate social inclusion and analyse the accounting system of the organisation with respect to the inclusion approach to measure the degree of inclusion in qualitative and quantitative terms (section 6). Finally, the findings of the case study highlight comments and identify the contribution of NBS through managerial tools to emphasise the aspects of inclusive museums (section 7).

The innovative contribution of the study is to enrich the literature on the possibilities for measuring the impact of NBS with respect to the challenge of social inclusion and cohesion, providing operational tools for managers wishing to implement solutions and to improve participation and social cohesion.

2. Social Inclusion and NBS in "tactile" cultural institutions: literature review

2.1 NBS and Societal challenges

In the context of scientific contributions regarding the NBS approach, an important issue is to evaluate the impact of NBS with regard to different social challenges. Raymond et al. (2017) propose a framework to identify how NBS can produce both synergies through ecosystem services and co-benefits deriving from different contexts. The framework includes four dimensions that are considered: "when implementing NBS in urban areas: 1) co-benefits for human health and well-being; 2) integrated environmental performance (e.g., the provision of ecosystem services); 3) trade-offs and synergies to biodiversity, health or economy; and 4) potential for citizen's involvement in governance and monitoring" (Raymond et al., 2017, p. 16). The authors consider costs and benefits in different areas, such as: climate and physical environment, socio-economic and socio-cultural systems, ecosystems and biodiversity. They highlight ten key societal challenges: "climate adaptation and mitigation, water management, coastal resilience, green space management, air quality, urban regeneration, participatory planning and governance, social justice and social cohesion, public health and well-being, economics opps. and green jobs" (Raymond et al., 2017, p. 17). For each challenge the potential actions or expected impacts of specific objectives are analysed. To this end, impact indicators and methods for evaluating the results achieved and impacts are proposed.

Among different dimensions proposed by Raymond et al. (2017, pp. 16-17), the present study is mainly located in two dimensions: "1) co-benefits for human health and well-being" and 4) potential for citizen's involvement in governance and monitoring" (Raymond et al. 2017, p. 16). The meaning of the two dimensions regard the active participatory involvement of stakeholders (Freeman, 1984; Matacena, 1984; Rusconi, 2018) finding alternative procedures and implementation of programmes

to ameliorate health and well-being. Another important aspect is developing the processes of co-creation (Cannas, Argiolas & Cabiddu, 2018; Kim, Tang & Bosselman, 2019).

The paper especially focuses on the area related to "Socio-economic and socio-cultural systems". Furthermore, in the socio-economic and socio-cultural systems topics, the issues that are addressed are linked to the following challenges: "Social justice and social cohesion" and "Participatory planning and governance". Concerning these two, it is possible to consider some indicators of impact as (1) the Quality of Participants that measure aspects such as: "Perceived level of trust, legitimacy, transparency and accountability of process" (Raymond et al., 2017, p. 18, Table 1) and (2), Accessibility to public green space based on social indicators of justice that is represented for example by: "% of people living within a given distance from accessible, public green space" (Raymond et al., 2017, p. 18, Table 1).

Adopting solutions that use nature in a sustainable way to create particular museums, such as tactile ones, is an important opportunity. In these contexts, NBS may be important in redeveloping abandoned green areas, exploiting areas and green spaces to redesign specific routes for the disabled and also creating the conditions for improving the state of life of some categories of disadvantaged people.

2.2. NBS, social inclusion and the accessible museum: moving to managerial paths

Tactile art is conceived as a solution that increases accessibility and social inclusion that represent social challenges to which the NBS approach tends.

The clarification of terms used in the NBS definitional framework indicates: "NBS explicitly address societal challenges. The solutions are not aimed at addressing only environmental challenges or

minimising only environmental impacts, although these may be part of what the NBS is targeting" (Cohen-Shacham et al., 2016, p. 6).

Among NBS principles (International Union for Conservation of Nature [IUCN], 2014) considered, according to NBS definition, there is the assertion that NBS "produces societal benefits in a fair and equitable way, in a manner that promotes transparency and broad participation" (Cohen-Shacham et al., 2016, p. 6). Also tourism and hospitality consider NBS essential in activating sustainable management practices (Olya & Alipour, 2015).

Social inclusion is improved by accessibility. Not always is the green space designed to be easily accessible; in fact in many cases it is heterogeneous (Wolch, Byrne & Newell, 2014), because for example green areas can have different ways of access, different recreational modes and paths of use. Then, NBS require planning approaches and governance architectures to support accessibility to green spaces or institutional spaces for dialogue and interactions of different stakeholders (Dennis & James, 2016; EKLIPSE Expert Working Group report, 2017). The concept of inclusion of disadvantaged subjects is considered in terms of social cohesion and inclusion as relevant challenges of NBS. Indeed, accessibility enhances social justice outcomes, welcoming "typically excluded social groups (e.g. migrants, women, persons with disabilities)" (EKLIPSE Expert Working Group report, 2017, p. 34; Fraser, 2009). Impacting on environmental justice and social cohesion in urban areas and engaging excluded social groups, NBS "designed, delivered and monitored in ways that reflect the needs and interests of typically excluded social groups" (EKLIPSE Expert Working Group report, 2017, p. 34, table 18), allowing participation and cohesion.

Several studies address the issue of social benefits that can generate solutions based on nature (Farrington & Farrington, 2005; Keniger, Gaston, Irvine & Fuller, 2013). Accessing the green space may overcome certain social challenges and improve social cohesion (Kingsley & Townsend, 2006). Moreover, interaction with nature can facilitate interaction among subjects, reinforcing social participation. Nature therefore becomes a resource for creating a social context and a place for interaction and sharing (Briot, Guyot & Irving, 2007; Coley, Sullivan & Kuo, 1997).

In this sense, NBS activate paths of participation and promotes social inclusion. Indeed, it is highlighted that "green care and nature-based services can be a very important supplement to traditional health- and welfare services" (Kogstad, Agdal & Hopfenbeck, 2014, p. 6065), helping the community to have a more satisfying life and a more significant role in society.

The characteristics of the cultural institution move in the perspective of achieving inclusive action for certain disadvantaged subjects such as a societal challenge of NBS. On the one hand, the managerial action emerges through certain behaviours that can reinforce or discourage inclusive paths. On the other, the theme of exclusivity is tied to that of vulnerability (Pelligra, 2008).

From a managerial point of view, attention to stakeholders, even more in institutions that take on a particular social role (Chen, Lune & Queen II, 2013), presupposes the moral and ethical consideration of interests and needs. This action should involve a closer link between individuals and their empowerment. At the same time, subjects need to realise that behaviour, that translates into decision-making processes, is closely related to the benefit of others in order to prevent any damage from falling back on themselves (MacIntyre, 2001).

Sustainability development, too, becomes complete only when it is able to actively engage all the players in the socio-economic processes, even those of different abilities (Nussbaum, 2007). Building an economic system where people are happy (Zamagni, 2007) requires the essential contribution of people with different abilities by making them acquire equal work dignity.

From the managerial perspective, these goals are pursued in relation to the behaviour of management and those operating within the organisation. The perspective adopted for the purpose of identifying the relationships between organisation and stakeholders in value creation processes, is that of Carroll (1991), who highlights the principles of ethics and morality, that are even more essential in managing relationships with people with disabilities. The author points out several facets of social responsibility (Albus & Ro, 2013; Jones, 1980; Woo, Uysal & Sirgy, 2016) including that related to philanthropic components, which are connected to various aspects such as the importance of acting on the basis of philanthropic expectations of society, the consideration that management and staff have to participate

in the volunteering activities of their community and the opportunity of supporting all those projects that aim at improving the quality of life (Carroll, 1991).

To pursue inclusive objectives, it is necessary to evaluate the possible benefit to the excluded people and also to those who develop the "inclusive" paths (Fredette, Bradshaw & Krause, 2015; Tang, Morrow-Howell & Hong, 2009).

There is a link among: vulnerability, dependency, trust and responsibility. This link develops the need to take care of the other. It is an important approach to advance trust and to create interdependence among agents (Nussbaum, 2002).

A fundamental logical passage is, indeed, the realisation of reciprocal satisfaction if, on the one hand, a specific need of the weak agent is achieved. On the other hand, the pleasure of the vulnerable agent attributes a sense to the action and life of the agent that offers its social responsibility towards the others. There is a moral and ethical duty that pushes people in the direction of taking care of people excluded from normal enjoyment of services and cultural activities and how to govern and to communicate them to the stakeholders. In this sense, the NBS can address the ethical challenge concerning social problems faced with the sustainable use of nature (Eggermont et al., 2015), trying to eliminate the barriers (Chan, Okumus & Chan, 2015) that can limit the use and access to areas.

Moreover, literature examined the processes of creating and measuring the value of museums and historical-artistic heritage (Ecchia, 1998; Magliacani, 2008; Sibilio Parri, 2004; Trosby, 2001) also with reference to managerial profile (Donato & Visser Travagli, 2010; Zan, 1999). In this context, the importance of social value related to cultural products is emphasised. Value is associated with the "social" utility that derives from the enjoyment of such products. It is important to extend this perspective not only to cultural goods of public museums but also to cultural institutions of the private-sector; that, in any case, should not limit the realisation of a social objective. The value created by the museum or the cultural product comes from a variety of tangible and intangible activities (Magliacani, 2008).

The museum constitutes an entity of service to society and its development, in its essential and general role of transferring culture and historical and artistic meanings of the artistic heritage contained therein. The process of knowledge transfer and value creation plays a more complex role in museums or cultural products destined, for example, to blind and visually impaired people (Scichilone, 1997). Accessible museums and cultural products create value for the community when accessibility to heritage and the physical and cultural modalities with which it is realised become essential prerogatives in the pursuit of their goals, comprising inclusion in relationship-based activities phenomena for the weaker categories of society (Baldarelli & Cardillo, 2012).

From these statements, it emerges that the mission and the distinctive trait that make cultural products "accessible" have the aim of transferring the culture and the historical-artistic meanings contained therein considering the beneficiaries of the cultural institution as key stakeholders (Freeman, 1984; Freeman, Harrison, Wicks, Parmar & de Colle, 2010; Mitchell, Agle & Wood, 1997; Roberts, 1992). A relevant consideration, regarding cultural institutions and cultural products in general, is to understand the nature of the museum's action towards such categories. Specifically, cultural institutions can generate exclusion processes or activate inclusion mechanisms.

With reference to the action of the museum, the literature highlights the role of the museum as a social inclusion agent (Belfiore, 2002; Coffee, 2008; Sandell, 2000; Sandell, 2002; Sandell, 2003; Sandell & Janes, 2007).

Within the UK government, particularly the Department for Digital, Culture, Media & Sport (DCMS), social inclusion work should: "promote the involvement in culture and leisure activities of those at risk of social disadvantage or marginalisation, particularly by virtue of the theatre they live in; their disability, poverty, age, racial or ethnic origin" (Department for Culture, Media and Sport [DCMS], 1999). Though, in order to understand social inclusion, social exclusion aspects must be defined (Bradshaw, Kemp, Baldwin & Rowe, 2004). "Inclusion may be derived by combining both a functional and a social approach to creating inclusive groups" (Fredette et al., 2015, p. 31).

As explained by Sandell, the cultural institutions and museums have been usually considered as an exclusive environment as they are: “products of the establishment and authenticate the established or official values and image of a society in several ways, directly, by promoting and affirming the dominant values, and indirectly, by subordinating or rejecting alternate values” (Sandell, 1998, pp. 407-408).

The Author indicates three fundamental topics in order to consider cultural institutions and museums agents of social exclusion: access, representation and participation. The problem of access to cultural institutions is crucial, as it is not only a question of physical access, but to be able to enjoy the products.

The issue of representation relies on their history and collections and sometimes the museum presents itself as an exclusive institution, which is not entirely open.

Participation in the process of creating cultural production may generate social exclusion when the product is not accessible to the different abilities of the public. However, if the action of the museum or cultural institutions is activated to curb these barriers, the museum becomes social inclusion agent and activator of a new culture of social inclusion.

The contribution of Sandell (1998) suggests a possible framework in which the museum expresses its potential with recourse to social inclusion, exploring the relevance and managerial implications for the museum sector. In this sense, culture might possess the potential to improve social cohesion or to reduce social inequalities.

The author creates a framework for assessing the extent to which the museum addresses exclusion and how it handles the symptoms of social exclusion even with respect to their role in society. In the model the Museum is ‘inclusive’ when it pursues such a goal and activates actions aimed at participation and access of those excluded. This requires developing a cultural dimension to avoid exclusion and thus indirectly to reduce other social problems. The Museum is also an Agent of Social Regeneration to improve the quality of life of the users and their self-esteem. It requires activating initiatives that can alleviate those disadvantaged and stimulate personal development. The Museum

is also a Vehicle for Broad Social Change, as it can influence a positive social change by promoting greater tolerance towards the most disadvantaged people. It becomes important to create a forum for educational debate and persuasion. These approaches are influenced by the social dimension with which exclusion phenomena are limited and the problems associated with exclusion are reduced.

Starting with Sandell's contribution, it is possible to define different dimensions of museum as agent of social inclusion [Table 1].

Table 1

Different dimensions of museum as agent of social inclusion

	The inclusive Museum	*The museum as agent of social regeneration*	*The Museum as vehicle for broad social change*
Dimensions	Finalist (goal of inclusive museum)		
	Instrumental (actions to achieve inclusion)		
	Motivational (cultural activities to limit exclusion)		
	Critical (reduction of problems associated with exclusion)		

Adapted from Sandell's model, 1998, p. 416

3. Measuring social inclusion in cultural institutions as a societal challenge of NBS: an accountability model

Social inclusion is a challenge in the field of solutions based on nature. The theoretical framework adopted aims to link the relevance of the NBS approach in cultural organisations and the challenge of social inclusion. In order to measure social inclusion, the Sandell model has been adopted to define some dimensions of analysis that formed the basis for creating a model of accountability.

The theory applied to create a link between these different theoretical approaches is social and environmental accountability (Deegan, 2002; Parker, 2005). The NBS idea supports social cohesion

and inclusion; the sustainable use of nature is a crucial factor in social growth and accountability systems can become tools to measure benefits and impact of nature-based solutions.

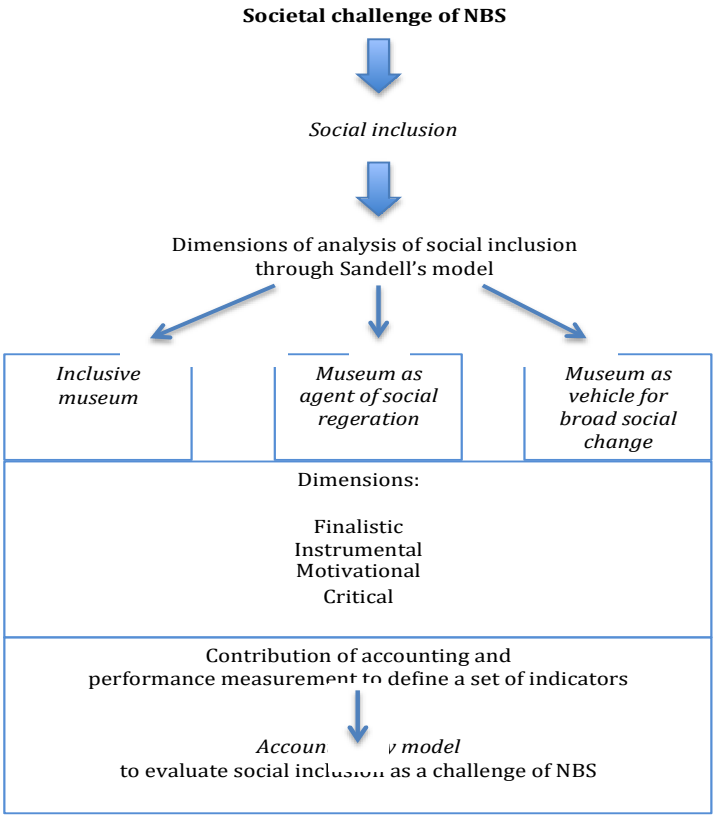
In this sense, the analysis of accounting data and reporting systems and the study of critical managerial aspects of cultural organisations can help to construct a set of quantitative and qualitative indicators that evaluate the degree of accountability with respect to social inclusion, according to the inclusive characteristics identified by Sandell. The NBS adopted in the context of the tactile museum, as an association between tactile arts and nature, stimulate social inclusion and therefore the related defined indicators to evaluate it become possible measures of the impact of the NBS answers (Tang & Jang, 2010).

To monitor the final benefits of NBS implementation processes targeted indicators are needed. The indicators can be financial, non-financial and linked to administrative budget or cost/benefits of inclusive actions according to different dynamic of the systems at a variety of geographic and temporal scales (Raymond et al., 2017).

The definition of indicators is a necessity to evaluate the impact of NBS on the various challenges it proposes. Defining a measurement system using indicators allows managers to obtain information to improve decisions and spread the idea of NBS also within the economic field, considering it an important item in the estimated expenditure of any entity (Kabisch et al., 2016).

The logic of interpretation of the case study is represented in Figure 1.

Figure 1



Considering social inclusion as a challenge of the NBS approach in cultural organisations, different dimensions of analysis are defined on the basis of the Sandell's model. In order to measure social inclusion, we highlight the contribution of accounting systems to evaluate some relevant aspects of social inclusion from the perspective of social accountability. A set of indicators is thus defined that can measure the inclusion processes and the ability to implement solutions based on nature for these purposes.

4. The Tactile Pole of Catania: methodology and research design

The research methodology in applying the NBS approach and Sandell's perspective to the Tactile Pole, is an interpretative case study (Chiucchi, 2009; Corbetta, 2015; Hyett, Kenny & Dickson-Swift, 2014; Stake, ; Yin, 1984). The approach is consistent with the research undertaken (Grand, Davies,

Holliman & Adams, 2015) that includes participation and orientation to others involved in the research context. The choice of this methodological approach is also considered useful for the position of the case study with respect to the research question (Darke, Shanks & Broadbent, 1998). Some studies on this topic adopt the methodology of the case study to interpret and describe specific impacts in the context of natural urban parks (Briot et al., 2007) or the conservation of biodiversity and social inclusion (Baur, Tynon & Gómez, 2013).

Moreover, the choice of this methodology lies in the need to understand certain managerial aspects by "listening" to the viewpoints of the respondents in order to understand certain behavioural profiles and ways of thinking that are relevant in the particular institution observed. We see the interpretive approach as a very useful one for understanding the person's perceptions, assuming their points of view. In doing so, the theoretical lenses presented above are used to explain the specifics of the practices within the organisation rather than providing generalisations (Scapens, 2004).

Specific factors related to the inclusion processes have been investigated and interpreted according to the theoretical framework described above.

The data were collected, over different periods: from March to July 2016 and from June to February 2018, through document analysis and interviews.

Documentary data was gathered from: newspaper articles, accounting documents, the Tactile Pole's web site, as well as the recognised projects and several other initiatives.

Various tools have been used for this purpose, including: providing a semi-structured questionnaire to certain key actors working in the museum, obtaining qualitative and quantitative information on governance arrangements, accounting aspects and fruition logic, documents containing the description of specific activities within the museum and data useful in evaluating them. Some links have also been established between the role of the Tactile Pole and the work of the Braille Stamperia, which has been the driving force for the realisation of most of the tactile products contained in the Tactile Pole, both in terms of financial and human resources. Those interviewed are those who deal with the overall management of the Tactile Pole. Semi-structured questionnaire interviews were

conducted with the Director General of the Stamperia and the Tactile Pole, the Administrative Director of the Stamperia, the Manager of the Tactile Pole, the Manager of the Tactile Showroom, who is a blind person and who also has the function of works supervisor, and the Manager of Company Visits as well.

The aim of such interviews was to stimulate an informal talk to assemble, through the several experiences reported, the profile and the goal of managerial action. Specifically, the interview with the Administrative Director highlighted significant aspects of the accounting system and organisational processes. The main information was obtained from the questionnaire and document data, that have been summarised in tables (Appendix 1) and reflect the general information of the institution, the accounting and budgetary system and aspects of the inclusive museum.

The themes of the interviews tried to encapsulate the aspects of inclusion in its various articulations and, specifically, in its internal dimension, as a managerial way of structuring the offer and, in its external dimension, as an action to raise the awareness of society. Some interviews were conducted simultaneously with various other subjects; indeed, some particularly significant aspects emerged from the interviews carried out simultaneously with the Manager of the Tactile Pole and the Manager of the showroom. On such occasions, to specific questions on the subject of inclusion, the two players, one visually healthy and the other blind, communicated different points of view, and it was evident that the different physical condition implies a different perception of events and a different approach in giving meaning to words, actions, and concepts.

5. The Tactile Pole of Catania: mission and governance

The case study of the Tactile Pole of Catania (Italy) is conceived for blind and/or visually impaired people but its impacts in terms of transfer of values and meanings influence the whole community generally. The Tactile Pole is undoubtedly a cultural institution of high social value, enabling the use of significant works of art and special structures. The choice of the case study derives, on the one

hand, from the interest of studying a distinctive reality in Europe in order to integrate into a single structure not only the tactile museum but also other structures, such as the Sensory garden, an NBS to stimulate the participation of people. The Pole, such as the tactile museum, derives from a process of urban redevelopment and also nature plays an important role within the structure.

The tactile museum takes on a particular connotation combining tactile art and nature, through this link an information exchange is realised, essential to transfer to the blind person a conception of the world and of himself.

In fact, these museums are often built and designed redeveloping abandoned green areas or green structures or in any case adopting solutions inspired by nature (Raymond et al., 2017, p. 1), improving the perception of the natural environment (Line & Costen, 2014). Indeed, the experience of the sensory path implies, in some structures, the immersion of the person into nature, through sensory gardens, with the presence of hundreds of different species of plants that are accompanied by a plate in Braille, in which the name, the species and the type of vegetation are indicated. The garden located in the tactile museum is a meeting point between sighted, visually impaired and blind with the ecological construction of a pathway that allows them to immerse with nature without particular dangers for the blind.

The garden has different species of plants, many types of flowers and perfumed essences. The sensory garden and the “musical” fountain are the innovative elements based on NBS as will be specified in this section. The redevelopment of the green space represents a central part linked to other structures such as the bar in the dark, the internet cafe and the tactile arts museum. The context of the Tactile Pole is of low environmental impact and is structured without architectural barriers that can prevent fruition.

The Pole is conceived as an integrated structure inspired by nature from the awareness that the Tactile Pole, stimulating the touch of vulnerable people, is an example of knowledge transfer that wants to overcome prejudices and marginalisation phenomena which improve human health.

The objective was, therefore, to investigate the Tactile Pole managerial and governance processes that favour the social inclusion of vulnerable people and the social cohesion of the community as a societal challenge of NBS, adopting the Sandell framework (1998). A significant element is the fact that the stimulus and the realisation of the structure come from the will of the private sector on the basis of a strong interest in people with visual issues and the will to answer their needs. The visual problems consider the need to perceive the value of works of high historical-artistic significance, even without seeing them, overcoming "*the prejudice that wanted to relegate the blind to marginalisation and darkness, even to ignorance*" (President of the Braille Stamperia).

Another important aspect to consider is that the Tactile Pole, as stated in 2008, is the first poly-functional Tactile Pole in Europe devoted to the integration of blind and visually impaired people, promoted and realised by the "Regional Braille Stamperia"[ii], located in Catania.

In Italy there are several structures that offer services to the blind, including the tactile museum of Ancona (Omero Museum), but the Tactile Pole, proposed as a case per se, is the only one in Italy that offers, in the same structure, various types of services including cultural services through tactile "museum" path and playful services such as the "Sensory Garden" and the "Dark Café". These elements attract a certain number of visitors annually, not just blind people, especially from schools for the socio-educational goals that the Tactile Pole stimulates.

Starting from the Sandell approach, it is possible to identify the elements of social inclusion carried out by the museum relating to three areas: The Inclusive Museum, The Museum as Agent of Social Regeneration and The Museum as Vehicle for Broad Social Change.

Each dimension is represented on the basis of various information related to: the mission and the tools that are used to activate virtuous cycles. The way in which the action can limit the exclusion and finally the modes by which the museum is able to manage some issues that are associated with exclusion.

This contribution, adapting the framework to the study of a cultural institution, seeks to identify some areas and themes of analysis to assess the management action with respect to social exclusion.

The study of the managerial aspects implies the consideration of the modalities of inclusion and the contribution of the managerial tools to realise the inclusive actions.

Based on the theoretical reflections above-mentioned, we interpret the case study.

The Tactile Pole offers various visiting supports: the Tactile Museum, the Sensory Garden, the Internet Braille Café and the Bar in the Dark.

The cultural institution we are dealing with is aimed at the blind and all people who are intent on experiencing a new way of appreciating art by touching it. Moreover, they become enriched by the profound message and meaning that the structure offers. The museum offers copies of original art works and historical and artistic monuments and, for this reason, it is not considered a museum in the usual sense. However, it tends to be considered a "special museum" as it makes accessible and enjoyable cultural products of which historical and artistic value is acquired, trying to transfer it to partially and/or totally incapable people who are therefore vulnerable.

Among the people involved in the realisation of the works, one is blind and tries to test reproductions, while three people have a contract funded by the Province of Catania. To achieve the goal of the Tactile Pole, the Directors of the Museum and the Stamperia seek to increase the financial resources in order to be able to better develop design and implementation activities that absorb much in terms of human and financial resources[iii].

The museum is free for all disabled people, but it requires the payment of a fee (€ 2.50 per person) for visitors with no disabilities and receives a flow of visitors which, when compared to the opening year, is constantly growing (Table 2 in Appendix).

As shown in Table 2, the number of visitors grew steadily. The strong growth in 2016 is due to two reasons: the first: to the expansion of the Tactile Pole, and the other, to a greater promotion and publicity of the Pole not only as a centre for the blind but also as centre for all those who wish to experience a moment of significance.

An articulated governance system characterises the Tactile Pole, the Braille Stamperia[iv] is the central core with the resources, which has contributed greatly to the creation of the Tactile Pole. Several

organisations support and sustain such structures, like: the Italian Union of the Blind (UIC), the Ministry of Cultural Heritage, the Sicily Region and the Regional Province[v].

Within the Stamperia, research and design activities are carried out. Indeed, each work is a detailed study, in which experts evaluate its feasibility and the ways in which blind people can use it. From the description of this composite system it is noted that the Tactile Pole, critical to the territorial context, enjoys an absolutely important position becoming a point of reference for people with visual impairment and, at the same time, a place where creative and innovative action is generated. The framework outlined above highlights the relevant aspects of managerial action, which creates the integration of "vulnerable" people (Pelligra, 2008) through a specific role: art education for particularly disadvantaged individuals.

Undoubtedly, in the case examined, it is not possible to refer to the acquisition and display of original artistic works, but rather of "special" works, since it is not original goods but reproductions studied and produced to be enjoyed by visitors with disabilities. This entails a remarkable commitment from the museum and specifically of the Stamperia, which deals with the design and production phase, and the development of high-value social activities. Indeed, from the information obtained, human and instrumental resources are absorbed by over 50% of the activities aimed at the design, construction and preservation of works. Managerial action is related to value-generation processes, in which the analysis of the relationship between the institution in question and the group of stakeholders involved in it is inseparable. To this end, it is essential to identify the main users as if "you do not understand how the museum is run, it is not even possible to orient the evaluation system in order to verify how it is managed" (Chirieleison, 1998, p. 473).

Given the fact that the philanthropic components of corporate social responsibility are of particular relevance, it is crucial to study the nature of the relationship between management and community and/or people who relate to the institution. Consistent with the concept of moral management (Carroll, 1991), various interviews with managers and directors of the Stamperia and the Tactile Pole revealed certain ethical principles and values that would justify the dedication, the deep respect and the desire

to make the blind and visually impaired as an integral part of a community. These elements could not emerge from the aseptic reading of documents or the detached observation of economic and financial performance. The listening process of the people, which has been carried out by the present study, has created a close proximity to those people interviewed, succeeding in capturing essential values such as respect, ethics and fairness of actions. The Manager of the Tactile Pole (June 2017) considers it a: "*place where together, with handicapped people and non, they can experience, share, know and touch with their hands… that it is possible to live like everyone in the world of everybody*", aiming towards "*greater cultural literacy for the blind, the visually impaired and all citizens, enabling visitors to experience a unique experience, an experience of discovering a new way of integration*".

6. The evaluation model of social inclusion in the Tactile Pole as a challenge of NBS

Adapting the theoretical framework regarding NBS dimensions, such as: stakeholder active participation, trust, legitimacy, justice, social cohesion and accountability (Raymond et al., 2017, p. 18, Table 1) as well as Sandell's approach (Table 1), the work identifies several actions and responses according to the three spheres i.e.: inclusive cultural institution, social regeneration and social change as relevant challenges of NBS.

The dimensions change according to the areas of analysis and they have been extended in the present research work with respect to the characteristic of the Tactile Pole.

The first area focuses on: *Inclusion*. Sandell's framework assumes cultural inclusion as the relevant goal of an inclusive museum, that creates a positive and propulsive NBS background for co-benefit, justice and social cohesion. The Tactile Pole expresses this goal in its specific mission: "to offer blind and/or visually impaired people the opportunity to know the characteristics and value of historical and artistic heritage through the creation of works for them studied and designed in order to make them take part in an important moment for their human and social growth" (Interview with the

General Director of the Tactile Pole, June 2017). The Tactile Pole was founded in 2008, thirty years from the establishment of the Braille Stamperia, with the aim of completing the cultural offer, through a substantial urban redevelopment that has also incorporated a green area which today is part of the Pole and that has been equipped to allow the blind to meet with nature. In this sense, a solution based on nature allows the social participation of these people.

The mission is linked to the desire to appreciate and thus enhance local and Italian cultural heritage even to those who have a visual impairment through the production of three-dimensional works that allow contact and can be experienced by such people as well. The Tactile Pole Manager (July 2017) states: "*The museum does not promote inclusion because inclusion is the reason for its existence… so the museum exists as it integrates, it includes; if it does not accomplish this purpose it does not exist*".

The ways in which this dimension is realised relate to all actions that enable representation, participation and access to categories that are usually excluded from certain processes (Sandell, 1998; Sandell, 2000). Moreover, the exclusion diminishes the potential contribution of the inhabitants of the surrounding area in governance NBS processes (Raymond et al., 2017, p. 16). The purpose of integration, for example, also supports the testing of plastics, made in the Stamperia by blind people who possess an average capacity to perceive both physical and historical aspects and artistic significance. Choosing the average tester's capacity allows, in terms of the ability to enjoy and understand the work, covering a good part of the people with such disability. The works are built in scale and details are emphasised and the use of strong colours also serves to affect the visually impaired person to perceive certain characteristics of the work.

The facilities of the museum, in terms of accessibility are extraordinary. Behind them, there is a strong desire expressed by the General Manager, who is an expert in the study of the conditions and issues of the blind, to identify himself in the condition of the blind and/or visually impaired people, since this is his principal contact with the Tactile Pole. For this reason, accessibility is detailed: at the entrance, there is a smart button that guides the blind visitor to access the museum describing his

current location and access modes. The structure also features a yellow path designed with state-of-the-art elements and materials that allow a safe path for the blind visitor.

Another aim pursued is to involve the blind in political debate. An interesting example of it is the scale model of the Messina Bridge on which trains and cars are built to give the idea of road traffic. It is absolutely significant that a visually impaired person can "touch" the project and be involved in a current critical issue regarding the possible construction of the connection between the island of Sicily and the rest of Italy.

In this context the factors that limit the exclusion take on a cultural connotation. First, the purpose is to limit the barriers that exclude the blind from the enjoyment of historical and artistic heritage, trying to create special services that make it possible to understand the relationship between those who have this disability and those who come into touch with them. In order to improve inclusive processes, the managerial actions have been and are currently focused on solutions that use nature linked to the fruition of artistic heritage.

Continuous enrichment of collections implies a management action aimed at obtaining funds to improve cultural offerings. In 2008, thanks to the Special Fund for Publishing of the Ministry for Cultural Heritage, the Stamperia has made further projects for the creation of new editorial products for the blind and visually impaired, including a series of tactile polymath books called "Wonders Under the Fingers". In addition, a convention with the Provincial Authority of Catania for the implementation of a project called "From the eyes to the hands", has made it possible to realise many three-dimensional architectural plastics, that have enriched the Tactile Pole. Further funding from the Ministry of Cultural Heritage in 2014 has allowed the Tactile Pole to be expanded, creating another exhibition area and enhancing the realisation of architectural works that from approximately 15 have become about 60.

Among the problematic elements that could become exclusion factors, there is that of the gratuity of the Tactile Pole. Indeed, such gratuity would be accepted in institutional museums where the blind do not pay because they cannot see and enjoy works, but it is less acceptable in such a structure that

should treat subjects with visual impairment in a normal way. The resulting issue is strongly linked to the phenomenon of exclusion. These problems were dealt with by the General Director, who states that blind people should pay for entry and there is a willingness to foresee it in the future; the current choice of making it free lies in giving absolute space to a higher goal: "*first to break the cultural and architectural barriers that limit the actions of the blind to the enjoyment of cultural heritage*" (General Director of the Tactile Pole).

Another problematic aspect is the absence of equipment for other forms of disability and therefore sometimes it is likely to exclude disabled non-blind people, who would like to visit it.

The second area, that is examined, considers "*regeneration*" (social, ecological, integrated). If a cultural institution assumes the goal of improving quality of life and the growth of self-esteem, then it assumes the features of an inclusive museum and is more easily able to activate innovative NBS approaches (Wong et al., 2016). Such actions must be geared towards alleviating the disadvantage of blind people. However, could some of the efforts alleviate the disadvantage or increase it? How can you achieve inclusion without risking exclusion? In this regard, the Manager of the Tactile Pole states that, meanwhile, they can never include enough, affirming: "*inclusion is a process of continuous improvement. Actions should be studied first with respect to the objective that is intended. This is to avoid the failure of inclusion*". There are several initiatives that aim to alleviate the disadvantage and increase self-esteem. For example, in the Braille Café Internet Room, there are internet-connected PCs, equipped with a Braille bar and screen readers, which are made available to the blind and visually impaired. Voice synthesis installed on PCs converts what appears on the screen in voice form. The goal of this area is that the Internet is perceived, as a socialisation and integration tool and the blind must have access to this tool. The blind and the visually impaired can contact the Tactile Pole for this service whenever they wish. The urge to make use of the Internet for the visually impaired was born with the constitution, by the Italian Union of the Blind, of the Observatory of the Internet, which assesses the degree of Internet accessibility for the disabled with visual rights, whose

right to surf the web and access the information was dictated by the Stanca Act (4/2004), which obliges public bodies to render their sites accessible.

The "Fragments of Light" area, which is a particular showroom, experiments and produces, in its workshop, specific didactic and technical material for blind people and exhibits technological material, which allows the blind to reach a certain degree of autonomy. This helps to make the life of a visually disabled person more normal and comfortable: mappings, tactile compasses, meter and speech scales, children's fairy tales, geographic maps, text reading devices, Braille writing boards, subsidies for mathematics and instructional games for children's perception, blind watches, and colour-matching devices.

The Tactile Pole, therefore, assumes an inclusive dimension when it manages to improve the lives of such disadvantaged and vulnerable people. Among the main actions to reduce vulnerability, there are those based on NBS and those, integrated with the former, relating to the creation of tactile pieces.

On the issue of vulnerability, during the interviews, the Managers of the Tactile Pole and of the showroom have defined the vulnerability differently. While the Tactile Pole Manager has correlated vulnerability to physical disadvantage that can indeed create situations of weakness and impotence in responding to the person, the Showroom Manager, who is a blind person, has expressed a different idea, affirming that vulnerability does not necessarily derive from external agents but it is a mental setting. "*Vulnerability is linked to our mind, it is not related to physicality. We can be healthy and very vulnerable, but also disabled and not easily vulnerable. People or actions can condition vulnerability but it always depends on our minds. It is also not stable, it can be momentary or linked to a specific moment of life*" (Showroom Manager). The issue of vulnerability takes on a peculiar connotation within the Tactile Pole. The structure is also intended for non-blind people, who can experience blindness through specific areas (i.e. Bar in the Dark). It often happens that the non-blind person increases his/her vulnerability, such as getting himself/herself into such and such a situation that he/she increases his/her level of awareness and anxiety.

Exclusion is therefore limited if the person finds in the museum a dimension of growth and valorisation of his/her existence, giving himself/herself part of the life of the other peoples and feeling part of a moment of growth. The development of tactile works, thanks to the financial and political commitment of management, is tied to the desire to expand the opportunities for the blind to discover historical and artistic works. So, the initiatives promoted are designed to make blind people subject of a world that thinks of their specific needs. These considerations point out that any parameter or method used to measure value and managerial action cannot disregard the addressee's preoccupation and the activities that are being carried out in an attempt to make an improvement.

The third area, that is analysed, focus on *Broad social change*. Indeed, one goal of the Tactile Pole's managerial processes is to influence society, raising awareness not just of understanding the status of certain categories, but also of enhancing the sharing of values and ethical principles. The Tactile Pole play a very important social role and NBS potential innovation background creation to be a vehicle for community change and well-being improving. An essential aspect of this change is consciousness. The visit to the Pole is, indeed, a formative experience perhaps even more for non-blind people (about 40% of annual visitors are blind). Initially, the coming of the non-blind visitor is characterised by curiosity, from the interest of observing a place created for those who cannot see; afterwards, the trip triggers the visually impaired sensation.

This visitor immerses themselves into the condition of those who do not see and, in that case, the blind person becomes the guide, the reference for non-blind people. From this path, it is easy to experience deep emotion, inner growth, and to understand better and be more aware of the condition of people with such disabilities. The structure that is stimulating in this sense, especially for the non-blind, is the "Bar in the dark", undoubtedly a successful experiment for the integration of the blind and non-blind through a reversal of roles. It consists of a tour of the bar and the furniture is also shown, for example, by touching the visitor with the relief paintings hanging on the wall in the dark. The non-blind person, after an initially uncomfortable situation, becomes captivated and gets used to the darkness and begins to experience "with a different eye". For these people, this is a living

experience that leads to profound reflections on the value of light and on the way of life in the blind world.

Another aspect of managerial action to strengthen social change is socialisation. An example of a structure devoted to this objective is the Sensory garden, which is the main idea in the museum based on NBS, favouring the inclusion of disadvantaged subjects as well as stimulating emotions through direct contact with nature (Raymond et al., 2017).

The Sensory Garden of Catania's multimedia tactile pole shows specific characteristics. The first is the variety of plants and the type of essences; the second is given by the way the garden is used.

The Garden has 250 different species of plants including olive, almond, orange, lemon, carob and palm-trees and laurel bushes, as well as different varieties of aromatic essences and flowers like mint, sage, thyme and the Melissa plant. Each plant is easily identified by a braille tag, which also includes information about species and types. Furthermore, the path is specially designed by the experts of the tactile pole and is made of tactile-plantar tiles that trace a path to guide the person. Moreover, the blind person can leave the tactile path, and go onto the lawn, because the garden has been specially equipped with some suitable signs that allow walking on the grass.

The Tactile Pole has also adopted another idea based on NBS, which is the "musical" fountain. Water games and movements are produced and these create sounds so that blind people can perceive the type of water movement.

The experience of the sensory path implies the immersion of the person into nature, with the presence of hundreds of different species of plants that are accompanied by a plate in Braille, in which the name, the species and the type of vegetation are indicated. The garden with the ecological construction of a pathway and the "musical" fountain, that allows people to immerse themselves in nature without any particular danger for the blind, represents a meeting point between sighted, visually impaired and blind, improving the perception of the natural environment (Line & Costen, 2014).

Education is an essential effect of the managerial action of the tactile museum. Related activities are connected to the creation of evaluation processes, meetings and initiatives to educate society, families, school children and youth. At the end of the tour, the respondents provide a questionnaire to the visitors in order to try to detect the feelings experienced during the visit and what sense was most stimulated in the absence of sight. This is also an important moment to guide future actions by the Tactile Pole. The main initiatives to begin a process of limitation of exclusion phenomena involving a social change are linked to external value assets that, under a management profile, absorb less human and financial resources, than the ones linked to internal-value assets.

The Tactile Pole, in order to become a vehicle for educating society, tries to make its works and, consequently, the efforts made in their implementation known to the whole community. However, the dissemination should be further developed as stated by the Museum Director and the Manager. Efforts have been made to increase communication channels, by the website and the Facebook page, and to activate initiatives and projects that showcase Tactile Pole activities, such as the National Day of Braille and the Dark Dinners. Among them, it is worth mentioning the travelling Tactile Pole, which provides for the display of some works and items for the visually impaired, on a specially equipped bus, for the purpose of disseminating its activities and services. As part of the awareness campaign, visits to the museum are particularly important by national and foreign schools, which may visit the museum many times during the year. The teaching staff of these structures feel that the visit to the museum is a moment of absolute human growth for youths. To this end, the Tactile Pole develops a number of external value activities linked, for example, to the activation of manipulation workshops for students and pupils in schools. All of these activities are a tool in limiting exclusion and related issues, improving social cohesion as NBS suggest (Raymond et al., 2017). The purpose of education covers various aspects, not only the inclusion of disadvantaged categories of people but also the dissemination of the NBS idea. First of all, private parties and public administrators are encouraged to carry out urban redevelopment projects, such as the Tactile Pole, also to create other museum structures for different categories of subjects or for the entire community. In addition, green

spaces designed for tactile perception identify an idea of a solution based on nature that can be re-proposed in other contexts and structures. This allows for spreading the idea that nature can also be a way to enhance cultural or recreational places.

The president of the Braille Stamperia states that society must grow "*by giving spaces to everyone, without distinction, to affirm the value of the person per se*". In this sense, he considers the tactile museum "*bright information and knowledge*", an example that can give everyone a "*better conscience, the awareness that people who for whatever reason have a disadvantage are the same as those who are more fortunate, and the fortune is neither capacity nor conquest, therefore consciousness must enrich with knowledge and values, the true greatness of each individual and of mankind*".

From the information derived from the case study and based on the Sandell approach, we try to represent the characteristics of the museum inclusion activity and how managerial actions and tools, such as accounting systems, may contribute to explaining the processes of inclusion and the ability to experiment with NBS innovations. Different aspects of measurement concerning *Inclusivity* involve: cultural aspects, the way of fruition, the activities that stimulate participation and integration. The elements related to *regeneration* are mainly aimed at improving the quality of life, through specific actions including investments that improve the status of disadvantaged people and their perception of the benefit received. The area of *Social change* is relevant because it represents the overall result of the inclusive action of the museum. Social change is aimed at stimulating greater social awareness of the status of disadvantaged people. This should create a cultural change in the community and, in public or private institutions, a greater propensity towards developing NBS projects.

Specifically from the information on the accounting and governance system obtained by way of the questionnaire and the reading of the accounting documents (Table 1), an accountability model (Tables 3, 4, 5 in Appendix) has been attempted. It links the Sandell's perspective with the specific indicators and information data deriving from the accounting system or performance measurements that can

highlight the contribution of these tools in explaining the inclusive managerial action of the cultural institution. The indicators represent a possible measurement of social inclusion as a relevant impact of NBS, monitoring and evaluating costs and benefits of organisation.

The case study allowed us to draw some reflections on various managerial aspects of the inclusion activities in the cultural institution. Several elements useful for measuring the inclusion action of the museum have emerged. They are not systematically measured and monitored by the institution analysed even though they could be useful, not only to improve performance compared to inclusive activities, but also to assess the social impact of these activities. Such measures could explain the dimensions of inclusion. Each dimension is subdivided by nature and each specific nature can be linked to aspects of analysis measured by indicators. Measuring indicators requires a well-organised accounting and performance measurement system that can provide the required data. The same indicators are proposed for the measurement of the different roles of museum (Inclusivity, Museum as Agent of Social Regeneration, Museum as Vehicle for Broad Social Change), though in any case, they contribute to providing a different composition of the set of indicators that describes the different aspects of the dimension.

7. Discussion and Conclusions

In order to answer to the research question: "How can NBS in tactile museums pursue a social inclusion challenge and integrate managerial action and accountability processes?" This paper investigates how the NBS (Cohen-Shacham et al., 2016; Raymond et al., 2017) in a tactile museum responds to the societal challenge of social inclusion for which it was implemented. Some managerial and governance aspects of cultural institutions are significant activating inclusive action. Starting from the Sandell's model (1998), which defines some responses to the inclusive museum for vulnerable people (Pelligra, 2008), different social spheres that assess social inclusion (Sandell, 1998) as the challenge of NBS (Raymond et al., 2017), are defined.

It is possible to identify certain characteristics of the museum which move in the perspective of achieving inclusive action for disadvantaged people. The accessible cultural product generates, in a wider context, a number of repercussions and impacts that are not limited to the simple enjoyment of goods and/or services, but stimulate a profound awareness and social integration action. Indeed, the development of managerial pathways, that strive to improve access to cultural products, may allow a virtuous process to be initiated. This virtuous process starts with the purpose not only of giving the opportunity of fruition to the disabled, but also of developing a series of positive circuits for the human growth as well as for a greater sensitivity towards sustainable choices.

The case study attempted to frame a series of activities carried out by the Tactile Pole located in Sicily, which takes on a different connotation and is interpreted with reference to the various fields that characterise the inclusive action, regeneration and wide social change. These value-creation processes are influenced by how management relies on its community of reference, which benefits from cultural services delivered and from NBS to improve active stakeholders participation, justice, trust and well-being. The nature of relationships and the identification of subjects in the case examined are associated with the level of morality assumed by those who run the organisation.

The adopted framework (Bradshaw et al., 2004; Cohen-Shacham et al., 2016; Olya & Alipour, 2015; Raymond et al., 2017; Sandell, 1998), in the scientific context of social and environmental accountability (Deegan, 2002; Parker, 2005), suggests that museums, and thus cultural institutions, can positively affect the lives of marginalised people, they can act as catalysts for social regeneration and can improve a specific community by creating a fairer society. This scientific approach allowed for developing of a possible model of representation and measurement of qualitative and quantitative aspects of inclusion that could be a first approach towards creating a managerial tool for assessing social inclusion aspects and the attitude towards implementing NBS.

The Inclusive Museum carries out all actions that enable representation, participation and access to categories usually excluded from certain processes. The actions taken by the Tactile Pole management team are a fundamental objective, that is the pursuit of the social objective of integration.

In pursuing regeneration, the organisation assumes an inclusive dimension when it manages to improve the human lives of such disadvantaged and vulnerable people. Realising a Broad Social Change implies a series of managerial actions which, in the case considered, mainly refer to consciousness, socialisation and education. In order to define the role of management tools in measuring inclusive aspects, a link between each dimension of the Sandell model and different indicators deriving from the accounting and reporting system, has been achieved. The proposed accountability model aims to help define the contribution in representing and measuring inclusive activity, as the societal challenge as well as the final impact of NBS. The definition of indicators allows the measurement and evaluation of aspects that influence the inclusion activity of the museum. Different indicators have a direct connection with NBS choices, such as for example, *Investments in social inclusion through NBS* (Table 3) or *Measurement of the social benefit produced by investment in NBS* (Tables 4, 5); other indicators, even if not directly connected to the NBS approach, may however indirectly consider the specific actions that can include NBS (e.g. *Research activity of private and public funds,* Table 5) or the measurement of the effects of the implementation of NBS choices (e.g. *Measurement of effectiveness of integration initiatives,* Tables 4, 5). Some indicators assume a certain degree of relevance in order to evaluate the inclusive processes related to NBS choices. The indicator *Investment in social inclusion through NBS* (Table 3) in the area of Inclusive Museum allows measuring how many investments, which promote social inclusion, involve the NBS approach. *Stakeholder mapping and perception of NBS ideas* (Table 3) in the motivational dimension of Inclusive museum are important in order to identify and classify the stakeholders and to perceive their idea of NBS. This involves evaluating, through interviews or questionnaires, how the community interprets nature-based solutions and whether some categories of stakeholders have greater awareness than others. The *Measurement of the social benefit produced by investment in NBS* (Tables 4, 5) in the area of Museum as Agent of Social Regeneration is an indicator that measures the social benefit that NBS investments can create. This can be measured, for example, by the level of satisfaction that disadvantaged categories express after having benefited from structures based on

NBS. Another significant indicator is *Training activities on knowledge of NBS to improve social inclusion* (Table 4) in the instrumental dimension of the area "Museum as Agent of Social Regeneration". This indicator identifies managerial actions aimed at informing the staff and stakeholder about the potential that NBS can produce with regard to improving inclusion activities. The indicator *Public or private initiatives or funds to start NBS projects* (Table 5) within the area of "Museum as Vehicle for broad social change" evaluates the quantity and quality of NBS projects activated by public institutions, companies or entrepreneurs. As noted in the survey (Table 1: "Accounting and control system"), there is a questionnaire to gauge the satisfaction given to visitors at the end of the visit of the Tactile Pole, whose data are not processed for management purposes by the museum organisation. These questionnaires, if further supplemented with even more specific information regarding the NBS approach, may constitute an additional management tool for assessing the perception of visitors on these issues, becoming an information base for the *Stakeholder mapping and perception of the NBS idea* indicator.

The Tactile Pole is a precious example of urban redevelopment where a green space has been re-evaluated, cared for and used for a noble social purpose. The green space inside the Pole is considered a green oasis within the city. The choice of this entity has allowed us to interpret a reality and its ways of social inclusion as an effect of an urban redevelopment project that had a significant impact on the territory.

NBS represents the conceptualisation of an idea that, perhaps even unknowingly, the subjects who created the Pole have carried on. The present research wanted to demonstrate the positive effects that an urban redevelopment project can produce in one area and to spread the idea that nature-based solutions, such as the Sensory Garden, can be an opportunity to the development of the territory.

From analysis of the case, it emerges that the creation of this structure assumes importance not only for the disadvantaged but also for the whole community. The educational profile is very relevant, as it demonstrates an original way of using nature. Through the sensory garden that is integrated into the structure complex, the concept of safeguarding plant species and the beauty of enjoying a green

space is communicated, considering it an integral part of a museum. Conceiving nature as a possible expression of culture should be a message not only for blind people but also for all people.

The Garden is, indeed, designed to offer subjects the opportunity of immersing themselves in a green park, of learning about the different types of plants and of meeting other people. This idea stimulates socialisation and therefore social inclusion.

Another important consideration is that the adoption of NBS, as analysed in this case, is further enhanced by the context in which it originates. As noted in the case study, nature is part of a path where other solid structures also alternate (such as the museum of artistic works reproduced for the blind or the Bar in the dark). Therefore, NBS may also be implemented in harmony with other structures enhancing their impact. This happens, for example, in the case study where nature is not a simple delineation or a mere physical passage but a relevant element of the museum to be discovered and appreciated.

The tactile museum takes on a particular connotation combining tactile art and nature, through this link the perception of reality improves, essential to transfer a conception of the world and of himself to the blind person.

The NBS solution adopted in the tactile museum realises a strong connection between nature and this type of disability. The analysis of this case has revealed that nature can be a tool to create a relationship between the world and the blind. The sensory garden and the “musical fountain” are winning examples of managerial choices in which nature, presented on the basis of a project idea shared by the managers, helps to reduce the perceptual gap of the blind. This approach can find further developments, for example by placing tactile works within a natural setting where the blind can perceive not only the architectural style or the historical period of the work but also the nature that surrounds it (rivers, trees, plants). The implementation of these projects involves the use of more extensive green areas based on the NBS approach, such as redeveloping abandoned green areas and redesigning green spaces according to specific solutions.

Adopting solutions that use nature in a sustainable way to create particular museums, such as tactile ones, is an important opportunity.

In order to stimulate these processes, a greater awareness of the actions and choices produced by organisations is needed. Therefore, a model of accountability that measures social inclusion activities and the propensity towards NBS choices which may improve this inclusion could be a useful step in order to consider nature as an element not only to be protected, according to environmental sustainability factors, but also a solution for growth, sharing and social education.

The study tried to contribute to enriching the paucity of literature on the possibilities of measuring the impact of NBS in a tactile museum with respect to the challenge of social inclusion, providing operational tools for managers to stimulate processes of inclusion of disadvantaged subjects and improving participation and accessibility as challenges of NBS.

However, the work has the main limitation that regards the empirical approach based on managerial and governance paths of a single case, which hinders the generalisation of results and requires a further research step aimed at considering more cases to submit to deeper investigation regarding these issues.

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Appendix 1

Table 1
Data collected at the Tactile Pole by questionnaire and reading of documents (data collection period June-February 2018)

General information and social context

Detected aspects	***Description***	***Analytical data***	***Notes and comments***
Name	Tactile Multimedia Tactile Pole	The Tactile Pole is a decentralised structure of the Braille Stamperia	
Subjects interviewed	Head of the Tactile Pole, General Manager, Administrative Director		
Legal status	Non-profit organisation with a social purpose	The Regional Braille Stamperia is a non-profit organisation of social utility ONLUS, recognised in regional law November 16th, 1984, No. 93 and L.R. (Regional Law) March 1st, 1995, No. 16 and 30th April 2001, No. 4	
Year of establishment of the Tactile Pole	2008		
Institution bodies	• Board of Directors • Management bodies • The Board of Auditors	The Board of Directors is made up of president, Vice-president, two councillors; The Management bodies are made up of General manager and Administrative Director	
Number of employees of the Stamperia	27 employees Two managerial positions: a general manager and an administrative director	25 permanent staff units and 2 part-time staff	Annual cost of staff Euro 1,100,000.00
Number of employees of Tactile Pole	4 Employees		Decrease in the last three years from 6 to 4 employees
Decentralised structures of the Stamperia	Multimedia Tactile Pole, Research, experimentation and production Tactile Pole		

Purpose of the Stamperia and the Tactile Pole	The purpose of the activity is to produce goods and services that can be used "for school integration and social inclusion of the visually impaired"		The aims of the Tactile Pole are “development and maintenance of the tactile museum, the Showroom, the sensory garden and the Bar in the Dark"
Specific purpose of the Tactile Pole	Developing integration, access to the art and culture for blind and visually impaired people		
The products of the Stamperia	Volumes in Braille characters	Technical aids material, typhlodidactics and books with enlarged characters for the visually impaired and any other educational material, including information technology useful for this purpose	
Productions for the Tactile Pole	Design activity and reproduction of works	Reproduction of artistic and cultural works and realisation of plans of cities and towns or parts of them, useful for blind people	
The Tactile Pole’s paths	Sensory garden, Bar in the dark, Tactile Museum, Fragments of light		
Organisational structure of the Multimedia Tactile Pole	Manager of Tactile Pole, No. 3 units in charge of reception, including a visually impaired person		No mapping of external stakeholders is carried out
Participative way of making management decisions	It is not taken		
Operational management performed by the	Management carried out by the governing bodies,		

owner or by the shareholders	according to a centralised structure		
Production management and/or services provided internally and/or externally	Production is mainly carried out internally	The transcription activity of the scholastic texts is carried out by transcription cooperatives; external service companies sometimes provide semi-finished products	
Production developments	The activity is in continuous development. The museum exhibition areas have increased in the last two years and so too the works realised	Future goal: to create new products and technical designs for the blind	The development of the Tactile Pole favours opportunities for the blind
Perception of the judgement of external people	The museum impacts positively on the community	In order to allow an active participation of external stakeholders, both in the strategic planning phase (drafting of the Anti-Corruption Plan), and in the reporting phase of the results achieved in terms of transparency and anti-corruption and, in general, to receive reports and opinions on the subject by citizens-users, the Stamperia has activated an e-mail address that receives reports or comments	Some people wish to visit the museum because they are intrigued without having a true awareness of the message and the profound meaning
Perception of the judgement of internal subjects	The staff and users are motivated and play their role with awareness and knowledge of the "problem" that is managed every day	There is a high degree of specialisation of the workers of the Stamperia and Tactile Pole	
Perception of the institution as a social reference point within the local context	The Tactile Pole is a point of reference but is still not fully known		The will of the managers is to make the museum a place not only for the blind but open to the whole community, as a

			tool for growth for all
Judgement on suppliers	The judgement is positive. There is a proven supply system	Some services are offered by transcription co-operatives and external service companies	
Perception of the judgement of employees	Employees consider activity stimulating and of social utility		
Judgement on local administrations on the ground	The context of local institutions could contribute to a greater extent	The Stamperia and Tactile Pole have agreements with: the University of Catania (Department of Electronics and Systems, Centre for Active and Participated Integration); Regional Provincial Authority of Catania	

Accounting and control system

Detected aspects	***Description***	***Analytical data***	***Notes and comments***
Type of accounting system	Cash accounting and accrual accounting		Cash budget, balance sheet, annual report
Where the general accounting is kept and by which person	At the organisation there is an administrative director who deals with accounting		
Preparation of accounting reports	Cash statement, income statement		
Cost accounting	There is no analytical cost accounting		
Indicators of quality of services rendered	There is no systematic evaluation of the quality of services rendered		
Use of satisfaction questionnaires	In the Tactile Pole, satisfaction questionnaires are available, to be filled in at the end of the visit		There is no systematic processing of the data collected
Annual budget preparation	The cash budget is established		
Objectives set in terms of revenues	An estimate of revenues is made in terms of contributions paid by different entities	The revenue of the Braille Stamperia consists of: a) contributions of the Sicilian Regional Authority; b) patrimonial income; c) ordinary and extraordinary contributions by public and private bodies; d) contributions and income from institutional activities; e) donations, legacies and oblations; f) specific contributions for services or services provided according to the institutional purposes	An estimation of financial contributions is carried out, the objectives development of the Tactile Pole depends on them

Method of determining objectives	The objectives are set at the level of the governing bodies		Objectives set according to financial resources
Dissemination of accounting results	They are not disseminated analytically	The operating result from 2013 to 2014 increased by 26.70%; while from 2014 to 2015 it registered a decrease of 87.68%	
Forecast of the destination of operating result	Profits from economic activities are intended for implementation of institutional activities or those directly connected to them	During the life of the institution it is absolutely forbidden to distribute, even indirectly, profits and operating surpluses, as well as funds, reserves or capital, unless the destination or distribution are imposed by law or are made to another non-profit ONLUS organisation, being part, by law, by laws or regulations, of the same and unitary structure	

Tactile Pole as a promoter of inclusion

Detected Aspects	***Description***	***Analytical data***	***Notes and comments***
Perception of the role played by the Tactile Pole	The museum experience is considered positive	Certain evaluations are obtained from questionnaires administered after the visit and indications given in the form on	The Tactile Pole offers a unique service; it plays an important role for the dissemination of culture to all people, even those who are

		the guided visits in the section "purpose of the visit"	blind. The number of visitors has grown especially in the last two years (in 2015 about 4,000 visitors, in 2016 about 8,900) and, therefore, also the attractiveness of the museum
Participatory management and ethical values of the organisation	Full participatory management is not achieved	The principles contained in the Code of Ethics must be respected by directors, managers, employees, collaborators, consultants, suppliers and by all those who, directly or indirectly, establish relationships with the Stamperia and the Tactile Pole and work to pursue the same goals	
"Inclusion" initiatives undertaken in recent years	Actions aimed at strengthening the communication and promotion channels of the museum and raising awareness among schools	Social impact initiatives (itinerant museum or meetings to promote the Tactile Pole) and project initiatives	
Positive social impact initiatives	Initiatives to spread the social message of the Tactile Pole	Specific social initiatives have been carried out, for example, Dinner in the dark, the national day of Braille, the travelling museum established in 2012 having the aim of cultural integration	
Quality of the relationship between top management and employees	It is a collaborative relationship		

Presence of specific skills for the management of services	Hospitality at the museum is carried out by people with specific relationship skills and also by visually impaired people		The testing of the works is also carried out by partially sighted people
Participation of volunteers for management	It is foreseen by statute		The possible use of volunteers in museum activities is governed by a specific regulation, taking into account that the use of volunteers must have the character of occasional complementarity
Methods of disseminating values and awareness activities	Activities promoting interest and awareness are carried out in schools; education activities; Facebook page; project activities	Project activities include: a laboratory to support the Tactile Pole's cultural activities; a 2nd-level Master's degree for experts in designing and drafting multimedia aids for the blind and visually impaired	

Table 2
Average number of visitors to Tactile Pole per year

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2,500	3,000	3,500	3,600	3,700	3,700	3,900	4,000	8,900	9,200	9,150

Table 3. The Inclusive Museum: description and accounting performance measurement system		
Finalistic	*Cultural inclusion*	• *Measuring of social impact of museum activities (sustainability reporting, social reporting systems, accountability tools, etc.)* • *Measurement of the social benefit produced by investments in usability and accessibility*
	Fruition of cultural products	
	Accessibility to the museum	

	Increase quality and degree of involvement of disadvantaged people	• *Costs incurred for use and accessibility* • *Investments in the creation of accessible cultural works and products* • *Investments in social inclusion through NBS* • *Evaluation of human resources dedicated to the structure and achievement of objectives*
	Knowledge of the artistic and cultural heritage	
Instrumental	*Development of access and usability activities*	• *% Costs/ incurred for use and accessibility* • *% Costs of engagement and participative actions* • *% Costs of dissemination activities* • *% Costs for events and initiatives for the dissemination of the museum* • *% Financial resources provided for the inclusive activities* • *% Financial resources planned for the increase of collections* • *Product and process innovations* • *Organisational innovations*
	Engagement and Participative actions	
	Dissemination activities	
	Events and initiatives for the dissemination of the museum in the territory	
	Creativity and innovation in "inclusive" activities	
Motivational (which limits exclusion)	*Removal of cultural obstacles and physical barriers*	• *Cost/benefits ratio incurred for use and accessibility* • *% Financial resources planned for the increase of collections* • *Cost/benefits ratio incurred for social integration* • *Stakeholder mapping and perception of inclusive aspects* • *Stakeholder mapping and perception of NBS idea* • *Detection of perceptions of users' museum experience* • *Level of education of human capital both of top management bodies and of employees* • *Presence of participative governance mechanisms* • *Staff perception detection systems with respect to inclusive mechanisms*
	Development of artistic works and collections	
	Social integration initiatives	
	Perception of "non-exclusion" by internal and external stakeholders	
	Inclusiveness of governance and staff motivation	
Critical	*Gratuity/non-gratuity of visit*	• *Economic impact of revenue from museum entries on operating result* • *Mapping of stakeholders and perception of motivational aspects*
	Motivations that drive visitors to fruition	

	Fruition by subjects who have other forms of disability	• *Detection of the motivational aspects of museum users* • *Estimate of revenues and expenditures to expand the museum offer to other disadvantaged groups* • *Ability to attract funding sources (for inclusive activities)* • *% Costs for the promotion and dissemination of the role of the museum* • *% People of the organisation who perceive the museum's opportunities* • *% People of the organisation with expertise and experience on specific disabilities* • *% People of the organisation that develop inclusion ideas*
	Sharing with the community of the museum's purposes	
	Awareness of the importance and the role played by the museum	
	Acquisition and management of financial resources for "inclusive" activities	
	Managerial skills and inclination towards the development of "inclusive" ideas	

Table 4. The Museum as Agent of Social Regeneration: description and accounting performance measurement system

Finalistic	*Cultural Inclusion*	• *Measurement of the social impact of museum activities (sustainability reporting, social reporting systems, accountability tools, etc.)* • *Measurement of the social benefit produced by investments in usability and accessibility* • *Evaluation of the objectives achieved for the disadvantaged* • *Measurement of the social benefit produced by investments in NBS* • *% Financial resources provided for "inclusive" activities* • *Measurement systems for detecting the perception of the museum experience*
	Self-esteem growth of disadvantaged users	
	Improvement of the quality of life of users	
	Increase quality and degree of involvement of disadvantaged people	
	Ability to appreciate the artistic and cultural heritage	
Instrumental	*Development of access and usability activities*	• *Cost/benefit ratio incurred for use and accessibility* • *Cost/benefit ratio of engagement and participative actions*
	Engagement and Participative actions	

	Dissemination activities	• *Cost/benefit ratio of dissemination activities* • *Cost/benefit ratio for events and dissemination initiatives of the museum* • *% of financial resources provided for the inclusive activities* • *Measurement of the effectiveness of tools to alleviate the status of disadvantaged people* • *Number of employees and relative % of people of vulnerable categories* • *% Increase number occupied workers* • *Composition and skills of the staff employed* • *Training activities on inclusive activities aimed at employees* • *Training activities on knowledge of NBS to improve social inclusion* • *Number of volunteers and interns*
	Events and initiatives for the dissemination of the museum in the territory	
	Tools to alleviate the status of disadvantaged people	
	Ability to generate employment and job attraction	
<u>Motivational (which limits exclusion)</u>	*Removal of cultural obstacles and physical barriers*	• *Cost/benefit ratio incurred for use and accessibility* • *% of financial resources planned for the increase of accessible collections* • *Social integration activities* • *Stakeholder mapping and perceived improvement of disadvantage* • *Detection of the perceptions of the museum experience of museum users* • *Level of education of human capital both of top management bodies and of employees* • *Measurement of the effectiveness of integration initiatives (creation of groups, meetings, shared experiences, etc.)*
	Development of accessible artistic works and collections	
	Social integration initiatives	
	Perception of the improvement of the quality of life by internal and external stakeholders	
	Quality and degree of involvement of disadvantaged people	
<u>Critical</u>	*Gratuity/non-gratuity of the visit*	• *Economic impact of revenue from museum admissions on the operating result and social reflections of non-gratuity* • *Mapping of stakeholders and perception of "motivational" aspects* • *Detection of vulnerability aspects of museum users* • *Estimate of revenues and expenditures to expand the museum offer to other disadvantaged groups*
	Motivations that drive visitors to fruition	
	Fruition by subjects who have other forms of disability	
	Awareness of the importance and the role played by the museum	

	Acquisition and management of financial resources for "socialising" activities	• *Management and development of funding sources for social integration initiatives* • *% of costs for the promotion and dissemination of the role of the museum* • *% of disadvantaged users who repeat the experience* • *% of people of the organisation with expertise and experience on specific disabilities*
	Correlation between the museum experience and the improvement of the state of disadvantage/vulnerability	

Table 5. The Museum as Vehicle for Broad Social Change: description and accounting performance measurement system

Finalistic	*Positive cultural and social change*	• *Measuring of social impact of museum activities (sustainability reporting, social reporting systems, accountability tools, etc.)* • *Measurement of the social benefit produced by investments in usability and accessibility* • *Measurement of the social benefit produced by investments in NBS* • *% of financial resources provided for inclusive activities* • *Systems for detecting the perception of the museum experience* • *Research activity of private and public funds* • *Voluntary activities and external support*
	Self-esteem growth of disadvantaged users	
	Improvement in the quality of life of users	
	Involvement of public and private subjects and institutions	
	Stimulate greater awareness and tolerance towards vulnerable people	
Instrumental	*Sharing and interaction processes*	• *Cost/benefit ratio of sharing/interaction processes* • *Cost/benefit ratio of engagement and participative actions* • *Cost/benefit ratio of dissemination activities*
	Engagement and Participative actions	
	Dissemination activities	

	Events and initiatives for spreading of museum activities over the territory	• *Cost/benefit ratio for events and dissemination initiatives of the museum* • *% of financial resources provided for dissemination and educational activities (forums, meetings, groups, etc.)* • *Public or private initiatives or funds to start NBS projects* • *Measurement of the effectiveness of tools to alleviate the status of disadvantaged people* • *Number of employees and relative % of people of vulnerable categories* • *Increase of number of employees* • *Composition and skills of the staff employed* • *Training activities on inclusive activities aimed at employees* • *Number of volunteers and interns*
	Tools to alleviate the status of disadvantaged people	
	Ability to generate employment and job attraction	
<u>Motivational (which limits exclusion)</u>	*Removal of cultural obstacles and physical barriers*	• *Cost/benefit ratio incurred for use and accessibility* • *% of financial resources planned for the increase of accessible collections* • *Cost/benefit ratio incurred for social integration* • *Mapping of stakeholders and perception of awareness of the role of the museum and of the state of vulnerability* • *Detection of the perceptions of the museum experience of museum users* • *Economic sustainability of networks with public and private subjects* • *Measurement of effectiveness of integration initiatives (creation of groups, meetings, shared experiences, etc.)* • *Measurement of effectiveness of initiatives and support from the public and private sectors*
	Development of accessible works and collections	
	Social integration initiatives	
	Perception of the role of the museum by internal and external stakeholders	
	Involvement of public and private institutions in limiting exclusion	
<u>Critical</u>	*Management of fruition*	• *Mapping of stakeholders and perception of consciousness and awareness issues* • *Number of collaborations with other institutions and changes in the managerial practices of these partners derived from this collaboration*
	Motivations that drive visitors to fruition	
	Nature and areas of external collaboration	

	Sharing with the community of the museum's purposes	• *Estimate of revenues and expenditures to expand the museum offer to other disadvantaged groups* • *Sources of financing for social interest and awareness initiatives* • *% of costs for the promotion and dissemination of the role of the museum* • *% of subjects of the organisation with expertise and experience on specific disabilities* • *% of non-disadvantaged users who repeat the experience*
	Awareness of the role played by the museum	
	Acquisition and management of financial resources for "awareness" activities	

Notes

i The first version of this paper has been presented at the 13th EIASM interdisciplinary workshop on "Intangible and intellectual capital" - Value Creation, Integrated Reporting and Governance, held in Ancona (Italy), 21st - 22nd September 2017, in which suggestions were received to develop the present paper.

ii The Regional Braille Stamperia was established in 1978, thanks to Article 7 of Regional Law No. 52 of 4th December, 1978, which assigned the Italian Union of the Blind in Caltanissetta an annual contribution of 50 million Italian lire for the start of activities. At present, the state of the art is an Onlus (a not-for-profit organisation) and its activity is mainly supported by regional contributions (Regional Law 4/2001). The cultural goal serves as a guideline for all the other activities funded by the press. A Stamperia library is made up of 5,000 volumes in Braille and about a thousand audio books. Particularly important are the investments made in the professional and technology sector in order to introduce new techniques for producing tactile texts and publishing products for the blind and visually impaired. The paperboard industry specialises in the production of three-dimensional plastics that represent the way for understanding beauty. In 1985, with the advent of the first computers the production of the first Braille textbooks that in a few years increased considerably in number began. In 1997, the production of large-format textbooks for vision impairment, more commonly referred to as "Large Print", is started. Unlike braille texts, these involve graphic and page layout difficulties, since character sets from 18 to 48 are used depending on the degree of partial sightedness and are tailor-made (with regard to colours, sketches, images, and layout) for the end user. In 1998, Stamperia transferred its activities to Catania, Via Aurelio Nicolodi 4. In 2001, the Regional Law No. 4 officially acknowledges Stamperia's production and delivery of texts, magazines and aids for the blind and visually impaired people in Sicily by providing it with its own Board of Directors.

iii From a financial point of view, Stamperia receives an annual contribution from the Sicily Regional Authority for the management of its various activities on the basis of a budget, which must be prepared annually. Stamperia must report annually on the use of such contributions. It also makes use of funding for specific projects funded by regional and provincial Authorities.

iv Regional law 30-04-2001, No. 4-Standards in support of the activity of the Regional Council of the Italian Union of the Blind.

v The management of the Braille Regional Printing House is attributed to the board of directors, which consists of 5 members: four of which are designated by the UIC and one designated by the Regional Council for Cultural and Environmental Heritage. The board holds the office for 3 years with the possibility of being reconfirmed once. Auditing is exercised by the Auditors' College, which is a regional public appointment (Budget Department and Department of Cultural and Environmental Heritage), holds the office for 4 years and can only be confirmed for another 4 years. In addition, their compensation is paid by the UIC.