

New Technologies and Sustainability: Monitoring and Evaluation of the Results of Interventions for the Promotion of Cultural Heritage and the Human Landscape

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ABSTRACT

The relationship between the development of technologies and the history of the cultural and agricultural landscape is linked to the concepts of "cultural landscape", understood as a space in continuous construction that changes with the change of individual, collective, social and cultural relationships of the inhabitants of the territory, or of the "cultural inhabitants", citizens who are producers of culture, rather than users. A vision of the "future as an open place" emerges, understood as a place of usability and sharing of all human, material and immaterial productions. Technologies, within a similar perspective, are presented as the historical evolution of *téchne*, whose degree of development today allows an extension of the level of human action. This study, in agreement with the scientific literature based on the use of recently developed digital models, demonstrates that the mainly agricultural territory of Basilicata, historically the site of complex social relations, has created a traditional rural society in which the concept of neighborhood and the spatial connotation also had the symbolic value of sharing knowledge and practices, relationships based on inclusiveness and sustainability. The diffusion of 5G technology is generating important cultural transformations. What used to be the neighborhood community in Matera (IT) - also following the activities launched with the CTEMT project and the social consequences of the Covid-19 pandemic - is now becoming a virtual community for sharing knowledge and practices, beliefs and values, including the use and management of cultural heritage, which takes place through the network, and therefore using applications that promote a transformative intervention of the landscape, such as to make it functional to human needs, and, at the same time, sustainable with respect to the perpetuation of ecosystem relationships. The diffusion of 5G technology, is generating important cultural transformations. What in the past was, in Matera (IT), the neighbourhood community - also as a result of the activities launched with the CTEMT project and the social consequences of the Covid-19 pandemic - now becomes a virtual community, sharing knowledge and practices, beliefs and values, including the use and management of cultural heritage, occurs through the network with the use of applications that promote accessibility and sustainability in both the urban and agricultural landscape. As argued by the International Union for Conservation of Nature (IUCN), the attention to the dynamic conservation of the landscape should not be placed so much to the "culture itself" or to the "nature itself" but rather to the relationship between these two dynamic components has been established, but also from the holistic mentioned many times, attentive to the values of identity and comforted by the knowledge and decoding of the intangible heritage, from which we deduce the active role, shared social behaviours, the mechanisms of transmission of knowledge and transgenerational awareness also thanks to the complex and fascinating universe of uses, traditions, rituals and rites that are an important tool of conscious management of the landscape and its culture. The conscious use of artificial intelligence is the concretion of the virtuous relationship between Humanism and technologies. For the biodiversity it is a support to the recognition of the species, in particular of the native ones, and it allows people to recognize themselves culturally and find into the biodiversity a collective and cultural belonging to the community and to the landscape. Therefore, thanks to the use of new technologies biodiversity becomes an historical-anthropological archive of knowledge and practices of a territory, and new technologies a powerful tool for the conservation of the cultural heritage.

Keywords: New technologies, Cultural heritage, Human landscape, Virtual community, IoT

INTRODUCTION

Globalisation has dissolved both identity and market barriers in favour of the relocation of people and production (P. D'Antonio et al. 2020, F.V. Romano, 2019). Social sciences and technology are now called into question regarding the progressive fragmentation of the relationship between man, culture and landscape and the consequent lack of interest towards community welfare (F.V. Romano, 2021). Communities' well-being depends on the care of landscapes, that requires both the government and local administrations to develop strategies based on sustainability (D. Silvestro et al. 2016) which now emerge as a crucial issue for the survival of the planet. The interaction (A.J. Vanbergen et al. 2020) between innovation in technology and cultural heritage, through action based on the recovery of traditional knowledge and practices and their implementation with digital applications, has shown to be a suitable key for sustainability. Now more than ever, the survival of the planet requires an important shift towards sustainability. But sustainability itself is based on the innovation of technologies (C. Garau et al. 2015) that is increasingly oriented to operate on the territory, drawing more and more to tradition, to an enriched return of new discoveries in the technological field of what already pre-existed in the universe of knowledge and practices of traditional communities. In the observation and the consequent interventions on the landscape it is therefore appropriate to take into account the dual nature of the look on the landscape: an external, objective and tangible landscape that appears to our senses but is mediated by an internal, cultural, identity, of those who inhabit it, since the organization of the space and the concrete and symbolic constitution of the places represent one of the modalities of collective and individual practices.

CULTURAL LANDSCAPES AND NEW TECHNOLOGIES

Landscape, therefore is shaped by the social group, imagined and told and the sense of places is revealed in the practices with which the places and spaces are connected to the collective memory of the community that lives them. It determines it, from time to time, based on the relationships (P. Felten et al. 2020) that exist between the places and the members of its living community but also between those who visit and attend them, both really, and virtually. The identity of a cultural landscape is therefore constantly evolving, an "open construction site" in continuous construction and the city of Matera, UNESCO heritage and at the same time home to the testing of ultrafast telephony 5G is a fascinating and interesting example. Matera, the European Capital of Culture 2019 is characterized by a thousand-year history of archaeological remains, paintings, frescoes, but also a material and intangible cultural heritage connected to rural culture and its landscape. In his book, the English writer Henry Vollam Morton narrates his visit to Matera in the 1960s, when the city appeared to his eyes as Pompeii, suspended between past and future, once inhabited and then abandoned. The Sassi of Matera, that in the past were considered a shame for Italy, tell a story of millennial history, in which man and nature "challenged" themselves and found each other to recompose a habitat to live in reciprocal respect (P. D'Antonio et al. 2019). Thanks to

the current use of technology (Capece N. et al. 2022), the cultural heritage of Matera is now widely accessible and this makes it one of the most visited destinations with an exponential growth of tourists but this has a significant impact on the restructuring by its inhabitants of the symbolic space of the landscape and cultural heritage (P. D'Antonio et al. 2019). The International Union for Conservation of Nature (IUCN), stress the focus on a wider attention to the dynamic of conservation of landscapes as 'cultural heritage' to place not only to culture itself or nature itself but also to relationship established between these two dynamic components, to identity values, knowledge and decoding of intangible heritage. These two elements represent a shared social behaviour and they play an active role on the mechanisms of transmission of knowledge and trans-generation awareness, that are also related to the world of traditions, uses and rituals, key tools for the management of landscape and its culture. Therefore, symbolic representation plays a central role on management of the landscape in Matera that have developed a traditional rural society- thanks to the agricultural vocation of its land - in which the concept of neighbourhood, besides a spatial connotation, also had the symbolic connotation of sharing knowledge and practices (P. D'Antonio et al. 2020). The use of digital applications of which Matera is a place of experimentation, is enacting important cultural transformations and the old neighbourhood community now becomes a virtual community (M. Suarez et al. 2021, Y.M. Lalena, 2019) where sharing of knowledge, practices, beliefs and values, including the access and management of cultural heritage, is acted through a network thanks to applications that promote accessibility and sustainability. We can assume that technology, with its extreme pervasiveness, will encourage an even greater accessibility of historical places, in harmony with the conservation of cultural heritage.

EVALUATE DIGITAL SKILLS

The importance of promoting an education of the "digital citizen" emerges, indispensable in a society that has chosen the web as a privileged environment in which to grow and mature: democracy, inclusion, transparency, participation, creativity, culture (I.L. Ramos et al. 2016). Educating for digital citizenship means making all citizens able to exercise their citizenship by using the network and the media in a critical and conscious way, expressing and enhancing themselves using technological tools (Capece N. et al. 2020) independently and responding to individual needs, knowing how to protect themselves from the pitfalls of network and media and know how to comply with specific rules. For the first time, parents and teachers are called to educate their children and students in digital citizenship. They are "pioneers" who are asked to design, implement and verify new educational-didactic approaches which respond to changing needs, new communication dynamics and which involve the use of rapidly evolving technologies. Working for equal digital rights and supporting access to technologies is the starting point of digital citizenship itself. The role of adults therefore first of all requires them to offer correct use of technological devices and digital environments that can promote a virtuous ways of learning and communicating. This must also

be an objective with very young children, so as to fully develop the potential of the digital approach, but without minimizing the risks and promoting creativity and providing adequate tools for autonomous and active use (P. D'Antonio et al. 2020). The characteristics of the web and therefore the immediate availability of notions and contents means that knowledge is always available to children and that it is necessary to help them build a good way of exploring and deepening the contents they will encounter in their educational path. The construction of knowledge, also through digital language, supports learning by doing and by experience; knowledge, through digital, becomes increasingly transversal to disciplines, multiform and multilingual (V.N. Scalcione, 2022); the way written language is used changes and it intersects more with images and videos. In such a scenario, promoting digital skills assessment models becomes an essential objective. "The evaluation of skills takes place within the training process, through a systematic observation of the pupils, placed in front of different problematic situations, real or simulated: real tasks and projects. The reality task is a "complex, open-ended problem posed to students to demonstrate their mastery of something" (A. Glatthorn, 1999). The theme of evaluation is always very complex and arouses extensive debates and mistrust, alongside research and reflections of great interest. There are numerous concepts alongside that of evaluation such as verification, measurement, profit, observation, standard, implicit evaluation, self-evaluation, system evaluation (C. Fiorentino et al. 2022).

EVALUATE INTANGIBLE CULTURAL HERITAGE

At the same time, it is necessary to promote "management and administration" tools in the management of a museum or an archaeological area or even a cultural site. "In a context where attention is frequently focused only on the legislative text (...) attention is directed to the study of the results achieved by the reforms and their degree of coherence with respect to the initial objectives (L. Zan, 2014). Starting in the 1980s and 1990s, the wave of "managerialization" of the public sector (R. Palumbo et al. 2022) also affected many cultural organizations: the issue was widely debated in various disciplinary fields, such as economics, museology and management, with the creation of Autonomous or semi-autonomous bodies for the management of cultural heritage, decentralized from a previous central government. Even the studies of business economics, applied to public administrations, have developed in Italy in parallel with the affirmation of the New Public Management (whose acronym is NPM). The expression "Public Management" has been in use at least since the 1970s, especially in the more economically advanced countries; its theoretical roots date back to the US "Public Administration", carried forward by personalities such as Woodrow Wilson, professor of political science, who also became President of the United States in 1919: he knew how to combine and associate the contributions of political and juridical sciences with the pragmatic need for a managerial approach to public organizations of increasing complexity. The central concept of the nascent Public Administration was the search for efficiency and effectiveness, essentially performance, although this term would come into use much later. Throughout the first half of the

twentieth century, Public Management experienced its initial phase, during which criteria were sought that could be applied to the various sectors; it is interesting to create a connection with Tylor, albeit detached from the anthropological discipline and the latter's studies: as Taylorism moves in search of rules of universal application, so too Public Management tries to approach and research its principles in a of maximizing efficiency. In this context, it is not a question of applying "private" methods to the "public", but simply of promoting the best possible methods, those that can lead to maximizing the final result. The long season of administrative reforms, started in the 90s and still ongoing, then formally referred to business and managerial models inspired by the NPM (the so-called "corporateization"), but the influence of the line of studies referred to on and on the management of the subsequent steps of study and concrete intervention it was weak, given the dominance of legal culture, administrative law and bureaucracy in the environments of the Italian Public Administrations. In fact, observing the results obtained only from a legal point of view, one can perceive how the terminology adopted is essentially formal and abstract. It is as if a "managerialization" had been adopted by law, even in the way of speaking, with the introduction of a special "bureaucratese" dictionary that is not at all concrete and, at times, difficult to understand for non-experts. The managerial and managerial tools have thus been reduced to legal logic "according to that "obscure tendency" typical of public organizations to transform the objects of their own interest into something bureaucratic, and therefore understandable and manageable according to their own schemes and ways of operating". It should be remembered that it is crucial to monitor the transformation processes that have taken place over the years to understand how the notion of management is not only linked to commercial activities or profit-making organizations, but also applicable to organizations that deal with cultural heritage. In this framework, strategy is the fundamental and specific characteristic of an organization. "Certainly the complexity of the action is no less in cultural organizations, on the contrary it is the opposite", as Luca Zan affirms also in the case of the public sector: thinking strategically means paying attention to the cognitive process of reconstructing "how it is done and how must be done", which goes beyond how one would like to do it. Cultural organizations constitute, in this sense, one of the privileged contexts for moving away from the utopian and mystical bureaucratic vision of change: many cultural organizations are not only mere containers of history, but are themselves historical organizations, capable of pushing for this change, realizing it, however, in a concrete, active and constructive way.

CONCLUSION

In recent years, the concept of social impact assessment has become part of the lexicon used within both non-profit organizations and those linked to an economic and monetary objective. It has not yet been possible, however, to precisely define what is the meaning of social impact, although various scientific disciplines, including sociology, anthropology, demographic sciences, management and economics, have offered evaluations. To define this

concept, it is necessary to start from an analysis of the definitions of the word “impact” and of the word “social”, well aware of the difficulty of being able to compare different organizations, process strategies and diversified actions. The organization for economic cooperation and development, also defined by the acronym OECD, defines the impact as “the positive and negative effect, primary and secondary, developed by an intervention directly or indirectly, voluntarily or involuntarily” (G. Fiorentini et al. 2013): this definition is universally accepted, even if interpreted with some differences by the various sectors. The impact, on the other hand, includes not only the wishes for change, advanced by the intervention or better defined with the term “outcomes”, developed in relation to the final beneficiaries, but also the unforeseen effects on people, organizations, the institutions, the community, which were not the parties involved who were primarily recipients of the intervention. The impact corresponds to 360 degrees to the results generated towards the community in the broadest sense. After having analyzed the term of impact, it is necessary to introduce the development of that part of the impact which can be defined as “social”. Furthermore, the impact can be divided into economic, environmental, social and health: clearly the four aspects are interconnected and the social variable cannot be isolated. Referring to the definition provided by the Social Impact Assessment Network, the adjective “social” refers to the ways in which people “live, work, interact, organize responses to their needs, create norms and values that rationalize their involvement in society”. A similar definition is also provided by the literature on Social Return on Impact, which reads: “Social value is created when resources, inputs, processes and policies are reassembled to create improvements in the lives of individuals and the community” (J. Emerson et al. 1999). Another interesting definition is granted by the contribution of Zamagni, Venturi and Rago, who, in the article “Evaluating the social impact. The question of measurement in social enterprises”, they admit that “The definition of impact is more complex, as is its measurement. It is defined as the long-term sustainable change in people’s conditions or in the environment that the intervention has partially contributed to bring about”. From these descriptions we can understand the two variables that define the meaning of “social impact”: on the one hand the concept of change in people’s lives and on the other the causal relationship between the intervention and the change achieved. Zamagni, Venturi and Rago underline that “Social change is therefore the systemic transformation related to thought patterns, special relationships, institutions and social structures (...) and takes place through the use of methodologies that improve the conditions of society and allow the flourishing of potential” (S. Zamagni et al. 2015). On closer inspection, it is a concept that indicates the ability to respond to people’s emerging needs through new forms of collaboration and new action schemes and is configured as a constantly evolving phenomenon, which over the years has been defined according to different approaches and multiple points of sight. In its original meaning social innovation has to do with “change” and “social transformation”. The plurality and heterogeneity of impact descriptions makes it difficult to develop a single definition, as previously suggested. However, it is possible to identify a series of common characteristics that allow us to

outline the concept of social impact. It is therefore possible to state that the social impact is: the set of resources, inputs and processes used in the activities of certain subjects, internal or external to the organization, which, in pursuing specific corporate and social objectives, modify the living, working and relationship conditions of the people directly or indirectly involved in those activities; the change in people, or more generally in an area, generated by a company or organization, directly through its activities and indirectly through investments made in the short or long term; the difference that an intervention makes on a person's life. The plurality of definitions and declinations that the concept of social impact assumes is reflected in the multiplicity and complexity of measurement tools and methods used to calculate it.

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