

Industrial Heritage and Citizen Participation: The UNESCO World Heritage Site of Ivrea, Italy

Matilde Ferrero ¹, Martha Friel ², Erica Meneghin ³, and Mariangela Lavanga ⁴

¹ Department of Law, Economics and Sociology, Magna Græcia University of Catanzaro, Italy

² Faculty of Arts, Fashion and Tourism, IULM University Milan, Italy

³ Fondazione Santagata for the Economics of Culture, Italy

⁴ Erasmus School of History, Culture and Communication (ESHCC), Erasmus University Rotterdam, The Netherlands

Correspondence: Mariangela Lavanga (lavanga@eshcc.eur.nl)

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Abstract

The article explores the dynamics of community involvement in managing the UNESCO World Heritage Site of Ivrea, Italy, designated as the “Industrial City of the 20th Century” in 2018. Ivrea is known for its historical connection to the Olivetti factory, whose existence shaped the town’s material and immaterial identity. The UNESCO-designated area in the north of the city features a mix of diverse buildings from the 1930s to the 1960s, serving various purposes and a variety of cultural activities. The research, commissioned as part of a larger project for updating the Site Management Plan by the Municipality of Ivrea, the managing authority of the UNESCO Site, aims to critically employ participatory approaches in the Management Plans of industrial heritage sites, analyse their role in preserving industrial heritage, and identify a new future for the city where cultural and creative industries play a vital role, or, in other words, to develop the site of Ivrea as a permanent cultural cluster. By employing an action-research methodology rooted in multidisciplinary and participatory approaches, this study focuses on the key role of residents and their connection to the industrial cultural heritage and the city to envision the site’s future. Initial findings from semi-structured interviews reveal a limited awareness of the Site Management Plan in the community and underscore the need for enhanced participatory governance. The article highlights how the collaborative efforts of stakeholders, particularly youth, yield innovative ideas, paving the way for social advancement, economic sustainability, and local promotion. Ultimately, this study envisions the UNESCO World Heritage Site as a central component of the city’s identity and a catalyst for the well-being of the involved communities.

Keywords

conservation; industrial heritage; participatory heritage management; UNESCO World Heritage Site

1. Introduction

Over time, the cultural and creative development of urban areas has been profoundly influenced by the activities of companies that have developed within them or in the neighbouring areas, shaping their economic landscape and history, infrastructures, and institutional relationships. This influence extends beyond mere economic impact, and, sometimes, it leaves enduring material and immaterial imprints on the fabric of these urban spaces. Also, company towns such as New Lanark (founded in 1785) in Scotland, Crespi d'Adda (founded in 1878) in Italy, and Saltaire (founded in 1851) in England stand as tangible testaments to this phenomenon and, for this reason, are recognised as UNESCO World Heritage Sites, for their contribution to both industrial progress and the nurturing of vibrant worker communities. Today these places testify to the vestiges of industrialisation and worker communities, designed and developed as both places of work and centres for life, hosting schools, theatres, and other cultural and recreational facilities. Starting from the last decade of the twentieth century, there has been a growing interest in repurposing industrial brownfields into cultural districts and creative hubs, also supported by a growing academic and policy discussion on the revitalisation strategies of such spaces (Braun & Lavanga, 2007; Lavanga, 2013; Mommaas, 2004; van der Borg et al., 2005) and on their potential to catalyse economic and cultural growth (Andres & Grésillon, 2013; Lavanga, 2020). In this body of literature, a less analysed aspect is the role Management Plans associated with UNESCO World Heritage Site designations can play in participatory revitalisation processes. UNESCO designations aim to protect and preserve cultural heritage of outstanding value to humanity. Designations are symbolic and accompanied by rigorous management plans that focus on safeguarding cultural heritage and developing sustainable practices. The objectives include promoting cultural diversity, fostering community involvement, and encouraging educational and tourism opportunities that benefit the local population (UNESCO World Heritage Centre, n.d.).

Despite the limited representation of industrial heritage on the UNESCO list, we argue that the Management Plans associated with the UNESCO World Heritage List offer a window of opportunity to revitalise and reconnect the industrial past with contemporary creative processes, thus contributing to discourses on the development of cultural clusters. The role of the Management Plan is crucial for the effective and sustainable conservation of World Heritage Sites. It serves as an integrated planning and action concept, outlining goals and measures for these sites' protection, conservation, use, and development. The Management Plan is essential for ensuring the proper management of World Heritage Sites, and deficiencies in management systems or the absence of adequate management plans are significant factors affecting these properties globally (Ringbeck, 2018; UNESCO, 2015; UNESCO et al., 2023). Moreover, it is seen as a tool for promoting sustainability across economic, social, environmental, cultural, and governance dimensions. It emphasises the importance of sound governance principles such as openness, participation, accountability, effectiveness, coherence, and subsidiarity in ensuring the successful implementation of public policies and the active engagement of citizens in heritage conservation and management (Ripp & Rodwell, 2018). In this view, Management Plans are meant to safeguard the industrial heritage while redefining its role in promoting creativity and innovation in contemporary society. These plans have the potential to leverage the UNESCO World Heritage status towards the identification of new socio-economic prospects, redefining the position of these industrial sites within the global network of innovative regions. This means they require a multifaceted approach encompassing preservation efforts and strategic initiatives for adaptive reuse of industrial heritage. These plans should engage local stakeholders, businesses, artists, and creative industries, thus infusing these spaces with bottom-up ideas that ensure their relevance in

contemporary urban life. Therefore, revitalising historic industrial landscapes involves much more than simply transforming disused factories and warehouses into vibrant centres for creative expression, innovation, and cultural exchange. Strategies for connecting these sites with surrounding communities, enhancing accessibility, and establishing links with other cultural and economic hubs become central. This interconnectedness may reinforce the role of industrial heritage sites as catalysts for local development and contribute to the cultural vibrancy of the entire region.

Although there is considerable academic and policy interest in revitalising industrial brownfields into cultural districts and hubs for the creative industries, there is less focus on how industrial UNESCO World Heritage Sites are managed and the effectiveness of their Management Plans in achieving this transformation, reconnecting the industrial past with contemporary creative processes. While there is widespread academic and policy interest in the revitalisation of industrial brownfields and their transformation into cultural districts and hubs for the cultural and creative industries, there is less attention to the context of industrial UNESCO World Heritage Sites and the extent to which Management Plans associated with these sites effectively achieve this revitalisation and reconnection of the industrial past with contemporary creative processes. Additionally, the specific role of companies in this process, beyond their historical influence on the development of urban areas, requires further investigation. Understanding how companies can actively contribute to urban areas' cultural and creative development, particularly within the UNESCO World Heritage Sites framework, represents a significant gap in current literature and research. Therefore, studies need to explore approaches encompassing preservation efforts and strategic initiatives for the adaptive reuse of industrial heritage, focusing on engaging local stakeholders, businesses, artists, and creative industries. Such research would provide valuable insights into effectively leveraging industrial heritage sites as catalysts for local development and contributing to the cultural vibrancy of entire regions.

This article focuses on the case of Ivrea in Italy, a city known for its historic connection to the Olivetti factory and recognised as a UNESCO World Heritage Site in 2018 with the denomination "Industrial City of the 20th Century." It analyses participatory approaches in the Management Plans of industrial heritage sites and their role in preserving industrial heritage while identifying a new future for the city where cultural and creative industries play a vital role. In doing so, the article employs an action-research methodology where multidisciplinary and participatory approaches have been deployed to strengthen the connection among residents, industrial cultural heritage, and the city. This article is structured as follows. In Section 2, we emphasise industrial heritage's role in revitalising cities. Section 3 introduces the case of Ivrea. Section 4 highlights the methodology employed in our article. Section 5 discusses the results of our study, followed by conclusions and directions for future research.

2. The Role of Industrial Heritage in Contemporary Society

According to The International Committee for the Conservation of the Industrial Heritage (2003), industrial heritage encompasses the remnants of industrial civilisation that hold historical, technological, social, architectural, or scientific significance. These remnants include structures like buildings, machinery, workshops, mills, factories, mines, processing and refining sites, warehouses, energy generation facilities, transportation infrastructure, and spaces associated with social aspects of industrial life, such as residential areas, places of worship, or educational institutions. Industrial heritage represents a significant facet of cultural capital encompassing tangible and intangible dimensions. While its tangible elements embody

scientific and technological advancements and aesthetic qualities reflective of their historical significance, industrial heritage also encompasses intangible aspects such as preserving memories, traditions, and customs associated with industrial practices, which serve as invaluable records of societal and economic transformations, offering insights into the cultural fabric of communities and the evolution of industrial landscapes over time (Cossons, 2016). Thus, industrial heritage emerges as a multifaceted testament to human ingenuity, creativity, and the interplay between technological progress and cultural identity, which calls for preservation and valorisation (Fontana & Gritti, 2020).

However, the concentration of industrial heritage within urban areas gives rise to several challenges. The significance of this heritage in shaping the cultural development of cities extends beyond its historical context to encompass contemporary issues such as the reuse and the promotion of its multifaceted value, how reuse is designed and implemented (Andres & Grésillon, 2013; Konior & Pokojaska, 2020; Scaffidi, 2022), and also the role of local communities and participatory governance of the revitalised heritage. These aspects represent dynamic and intricate fields of study, extensively explored in academic literature across various disciplines and perspectives (Douet, 2016). Furthermore, the tension between authenticity and commercialisation underscores the multifaceted nature of industrial heritage as both a site of historical significance and a potential engine for tourism and economic development (Hospers, 2002; Vargas-Sánchez, 2015).

In general, it is possible to isolate three main aspects of the impact of industrial heritage on cultural and economic urban landscapes on which academic literature in economic geography and management studies have focused. The first aspect concerns the long-lasting cultural imprints left by the industry on the urban fabric (Douet, 2016; Vecco, 2010). Studies such as those by Liu et al. (2018) have tried to examine and assess the cultural significance of industrial heritage, including technological, artistic, and social value. These values, incorporated into tangible and intangible components, also translate into economic benefits from active and passive use of this cultural capital, as shown, for example, by the study of Bertacchini and Frontuto (2024) on the demand for industrial heritage rehabilitation projects.

The second aspect is linked to the revitalisation strategies of abandoned historic industrial sites (Grecchi, 2022; Hermawan et al., 2020; Ifko, 2016; Ifko & Stokin, 2017; Kuzior et al., 2022; Tötzer & Gigler, 2005; van der Borg et al., 2005; Vaništa Lazarević et al., 2020). The adaptive reuse of these spaces into vibrant centres of artistic expression and innovation can reconnect industrial heritage and modern creativity (Douet, 2016; Friel & Lavanga, 2024; Lavanga, 2009; Robiglio, 2016; UNESCO, 2023). Revitalisation strategies that include adaptive reuse of heritage sites, community engagement, financial sustainability, securing adequate funding, and ongoing maintenance (Farr, 2011; Roberts & Sykes, 1999) can trigger a “creative atmosphere” (Bertacchini & Santagata, 2011; Bullen & Love, 2010; De la Torre & Mason, 2002), or, in other words, a critical mass of creative knowledge, production, and consumption, fostering local creative ecosystems. Revitalised industrial areas can connect historical industrial heritage with contemporary innovation processes and act as reservoirs of tacit knowledge (Bathelt et al., 2004; Bertacchini & Santagata, 2011). However, assessing residents’ demand for revitalisation projects of industrial heritage present in their city is a complex process. The preferences of the resident communities for preserving specific attributes of their industrial heritage reveal a more nuanced connection between economic choices and attitudes toward cultural value (Bertacchini & Frontuto, 2024). Although many studies emphasise the importance of actively involving citizens in the decision-making process in the revitalisation strategies of industrial heritage and

brownfields, many concrete examples of inclusive practices highlight serious flaws in engaging the most vulnerable segments of the community, risking the perpetuation of inequalities (Ferilli et al., 2016). Moreover, the diversity of approaches and participatory practices has sparked a debate on the optimal conditions for achieving meaningful results (Savini, 2011). Within this dialectic, gentrification also emerges as a pivotal concern of many scholars (Sun & Chen, 2023), encapsulating broader debates over socioeconomic equity, cultural preservation, and community identity.

The third aspect, very much connected with the first two, is linked to the large and growing body of literature that explores the role of industrial heritage and manufacturing districts in the identity of a place and its branding, as well as in connection with tourist attractiveness. Authors delved into the intricate relationship between region branding and the ultimate prosperity of industrial heritage, underscoring how this connection intertwines with the strategic promotion of regions to foster economic sustainability and entice tourism (Wicke et al., 2018). This literature has focused on multiple aspects, ranging from governance issues (Bramwell & Rawding, 1994) to urban branding strategies (Asprogerakas & Mountanea, 2020; Liouris & Deffner, 2005) and tourist product development (Xie, 2006).

Overall, the three aspects highlight the multifaceted impact of industrial heritage on cultural and economic landscapes, underscoring the implications for heritage conservation and creative revitalisation within urban areas (De Gregorio et al., 2020; Jonsen-Verbeke, 1999). In this context, despite the growing interest of academic literature on the topic, little attention has been paid so far to the role that UNESCO World Heritage recognition may exert in this process of industrial heritage revitalisation, and, in particular, to what extent the Management Plans linked to that recognition play a role in drafting, implementing, and guiding such a process of industrial heritage revitalisation along with paying attention to the role of participatory and innovative perspectives in shaping the future of UNESCO Sites and promoting community well-being.

3. The Case of Ivrea and Its UNESCO World Heritage Status

The industrial city of Ivrea was founded by electrical engineer Camillo Olivetti in 1908 and further developed under his son, Adriano Olivetti. The Olivetti factory, initially specialising in typewriters and later expanding into mechanical calculators and computers, played a central role in shaping the city's identity. Ivrea became a model for the modern industrial city, adeptly responding to the challenges of the 20th century. Adriano Olivetti's leadership extended beyond traditional managerial roles. It revealed concern for the community, from the well-being of individual workers to the urban form and architectural identity of Ivrea and its cultural and social dynamics (Simone et al., 2021).

The process of designation of Ivrea was long and complex. A National Committee specifically established for the process was promoted by the Adriano Olivetti Foundation in collaboration with the Municipality of Ivrea and the University of Milan. Established by ministerial decree on March 20, 2008, it was funded by the Ministry of Cultural Heritage and Activities and Tourism (MiBACT), the Piedmont Region, and the Adriano Olivetti Foundation. Over the four years of its operation, the Committee discussed enhancing Ivrea's modern architectural heritage. With contributions from national and international experts, it worked on the plan to nominate Ivrea as the "Industrial City of the 20th Century" on the UNESCO World Heritage List. In 2009, the Municipality of Ivrea entrusted the Adriano Olivetti Foundation with the leadership for the initial phase of the nomination project. Working with MiBACT, they aimed to include Ivrea on Italy's

Tentative List of sites proposed for UNESCO heritage status. Following Ivrea's inclusion on the Tentative List, the MiBACT UNESCO Office formed a Coordination Group involving various ministerial departments, the City of Ivrea, the Piedmont Region, the Province of Turin (later Metropolitan City), the Adriano Olivetti Foundation, and the Guelpa Foundation. The Coordination Group appointed a Steering Committee to oversee the operational phases of the nomination process. In 2016, the Italian State submitted the Nomination Dossier and Management Plan to the UNESCO World Heritage Centre. Evaluation by ICOMOS, UNESCO's advisory body, began in 2017, followed by an Evaluation Mission in late September 2017, prompting requests for additional information. After discussions between Coordination Group representatives and ICOMOS representatives, further information was submitted by the end of February 2018. Finally, on July 1, 2018, during the World Heritage Committee Session in Manama, Bahrain, "Ivrea, Industrial City of the 20th Century" was inscribed on the World Heritage List (Ivrea Città Industriale, n.d.-a).

The UNESCO designation aligns with the emphasis on social and cultural values embedded in Olivetti's philosophy, vision, and practices. It requires the preservation of the cultural heritage of Ivrea, including its spatial plan, public buildings, and residential structures, along with its commitment to community engagement and integration of cultural elements into urban planning. The designated area in the north of the city showcases a mix of diverse buildings from the 1930s to the 1960s. According to Olivetti (2013, p. 26): "This new series of buildings, facing the factory...represents the idea that the man spending the long day in the factory does not seal his humanity in the work suit." These words, spoken by Adriano Olivetti in 1958, encapsulate the guiding vision that drove the production, centred on humanity and its needs rather than labour (Lunati, 2015). Directed by Adriano Olivetti, key figures of the Italian "Modern Movement" (Figini and Pollini, Gardella, Vittoria, Gabetti and Isola, Cappai and Mainardis, Sgrelli) designed the urban fabric and buildings between the 1930s and 1960s (Galuzzi, 2016). New manufacturing facilities, administrative buildings, social services, and residential areas were developed, reflecting the ideals of the *Movimento Comunità* (Community Movement). The movement was a social initiative launched by Olivetti to improve the quality of life and working conditions for the company's employees and their families. It was founded on social responsibility, community engagement, and humanistic values (Iglieri, 2020).

The Management Plan for Ivrea's UNESCO World Heritage Site was developed collaboratively following the city's nomination in 2016. It was a crucial component of the UNESCO heritage application process, crafted through cooperation between the Municipality of Ivrea, the Adriano Olivetti Foundation, regional authorities, and relevant national ministries, including the MiBACT. The Management Plan outlines strategies for sustainable preservation, community involvement, and the promotion of cultural heritage. It ensures that the management and preservation efforts are aligned with UNESCO's guidelines for World Heritage Sites (Ivrea Città Industriale, n.d.-a). Some of the criteria of the UNESCO designation highlight the following requirements:

Criterion ii: to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning and landscape design....Criterion iv: to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history....Criterion vi: to be directly or tangibly associated with events or living traditions, with ideas, or beliefs, with artistic and literary works of outstanding universal significance. (Ivrea Città Industriale, n.d.-a, p. 9)

The latter appears to be a fitting criterion for the city of Ivrea, the result of the talent of world-renowned Italian architects and designers of the 20th century and the influence of the ideas and beliefs of Olivetti on the social and political fabric of the city.

Even though Ivrea has a strong historical legacy of technological, economic, and social innovation, the city may not be as innovative as it used to be. The concept is intended here as social and institutional innovation (Czischke et al., 2015; European Commission, 2020; Mieg & Töpfer, 2013). It aims to underscore the extent to which local development activators can instigate social, cultural, and economic advancement, benefiting the underutilised resource and its surrounding environment (Scaffidi, 2022). The Ivrea Management Plan 2018–2022 (Ivrea Città Industriale, n.d.-a), which guided the UNESCO nomination, has the vision and ambition of redefining the position of Ivrea in the network of innovative urban areas internationally, along with the preservation and revitalisation of its industrial heritage. The slogan “from the innovative urban factory of innovative products to the urban factory of innovative enterprises” aims to attract SMEs who value industrial culture grounded in technological innovation and creativity. Aligned with the economic development plan of the area, the Management Plan strives to ensure tangible benefits for residents and businesses, supporting the restoration and repurposing of its architecture. It also envisions a “Social Laboratory on the Digitalisation of the Cultural Heritage of the Site” to bring the physical site into a virtual platform, experimenting with new forms of interpretation and presentation of heritage and new strategies for audience engagement. Furthermore, the Management Plan assigns a crucial role to the creation and exchange of knowledge and skills related to the cultural valorisation of the site, through training programs, and dialogues with research institutions and industrial heritage sites around the world.

4. Methods and Data

The study employs action research, a methodology embraced in the social sciences for instigating and analysing shifts in behaviour at the levels of groups, organisations, or society (Burnes, 2004). This approach addresses social issues through behavioural change within organisations or broader social contexts (Lewin, 1946). To engender change, action research must be a participatory and collaborative process involving all stakeholders. Scholars have employed this methodology within the field of cultural heritage and creativity to analyse the organisational processes that led to the implementation of sustainable accounting and accountability by a smart city (Magliacani, 2023), or to examine the role of evaluation in the conservation of architectural heritage in marginal areas (Rossitti & Torrieri, 2022). However, the methodology has not yet been used to critically analyse and guide the development of industrial World Heritage Sites.

This study embraces multidisciplinary and participatory approaches to address the complexity of the relationship between the local community, the industrial cultural heritage, and a historical and modern city (Bandarin & Van Oers, 2014; Court & Wijesuriya, 2015; UNESCO, 2013). In doing so, it employs action research to explore the role of participatory practices in strengthening the connection between residents and the industrial heritage, particularly in relation to the assessment of the Management Plan 2018–2022 for the UNESCO site of Ivrea. Moreover, it aims to identify future scenarios for bettering participation practices via interviews and a series of co-creation sessions with a diverse range of local stakeholders (i.e., site manager, key stakeholders, and the local community). In the action-research approach, the researcher is embedded within society, and knowledge is thus the product of interactions with stakeholders and their values, understandings, and experiences. In our study, action research facilitated the coproduction

of knowledge, the evaluation of management efficiency, and the level of stakeholder involvement, thereby focusing on changing community involvement practices (from mere usage to active participation in site management). Revitalising historic industrial landscapes encompasses more than merely transforming disused factories and warehouses into vibrant centres for creative expression, innovation, and cultural exchange. It should also involve exploring how communities engage and actively participate in this transformation process. In particular, UNESCO World Heritage Sites and the assessment of their associated Management Plans and their future design and implementation can offer a good opportunity to analyse participatory approaches that could be deployed to strengthen the connection between residents, industrial cultural heritage, and the city. We argue that this interconnectedness may reinforce the role of industrial heritage sites as catalysts for local development and contribute to the cultural vibrancy of the entire region.

The research was conducted as follows. First, 22 semi-structured interviews were conducted in January–March 2023 to get an in-depth understanding of the context, which allowed us to capture diverse perspectives and enrich our study. Interviewees were selected, in collaboration with the managing authority, the Municipality of Ivrea, based on their roles in the implementation of the Management Plan, thus including representatives from local authorities, universities and schools, local associations, partners in specific projects aimed at enhancing and promoting the World Heritage Site, funding bodies, and beneficiaries outlined in the Plan as targets of proposed interventions. This selection process was pivotal in capturing a broad spectrum of perspectives, enriching the study with diverse insights and experiences crucial for the site's effective stewardship. The interview guidelines gathered basic demographic data of the participants. This was followed by questions about their specific responsibilities within the Management Plan, allowing us to map the network of influence and accountability. The qualitative part of the interview probed the participants' subjective evaluations of actions taken, governance structures, and prospects of the site, revealing the nuanced interplay between policy, practice, and perception. A quantitative assessment complemented this, where participants rated aspects of the Management Plan on a Likert scale, providing a measurable dimension to their subjective insights. Participants were asked to rate various elements of the Management Plan on a scale from 0 (*insufficient*) to 5 (*excellent*), encompassing areas such as site management, conservation efforts, stakeholder competencies, community engagement, and site accessibility. This dual approach enriched our understanding of stakeholder satisfaction and highlighted areas for potential enhancement. The interviews concluded by exploring challenges and weaknesses, which are critical steps for any adaptive management strategy. By identifying these areas, we can propose targeted interventions that align with the dynamic needs of heritage conservation and management. This structured yet flexible interview format is emblematic of the iterative nature of research, allowing for both standardised data collection and the accommodation of individual narratives, thus providing a comprehensive understanding of the complex heritage management ecosystem.

Second, the insights gathered via the interviews were used as input to design two co-creation workshops to allow a more in-depth assessment of the Management Plan (Workshop 1: "Management Plan Assessment") and identify possible future scenarios (Workshop 2: "Future Scenarios"). Far from being isolated, the workshops represent a seamless extension of the dialogues initiated during the semi-structured interviews. Notably, they encompassed both participants from the initial interview cohort and newly identified actors who emerged during the Management Plan assessment process. By intentionally expanding the participant pool, we fostered a more inclusive dialogue—one that extended beyond administrative boundaries and embraced diverse perspectives. A total of 30 people were involved in the two workshops in March 2023:

18 participants in Workshop 1, and 12 participants in Workshop 2. The workshops were designed around the need to (a) involve local actors in UNESCO World Heritage Site management, (b) increase the awareness of the values and local resources for social and community growth and flourishing, and (c) collectively identify development opportunities related to the presence of a UNESCO Site (Canadian Commission for UNESCO & UK National Commission for UNESCO, 2022; UNESCO, 2019). These workshops, therefore, represent a pivotal step toward nurturing a sense of shared ownership and collective responsibility for Ivrea's industrial heritage—a legacy that transcends generations and resonates with the very essence of community identity.

Third, an extra workshop was specifically designed to target the younger generation. Fifty-three students participated in this innovative session, which was designed to foster a bottom-up reactivation of local development processes. The workshop's format diverged from the previous two, reflecting the distinct needs and perspectives of its youthful participants. This workshop integrated the participatory tools utilised in the first two workshops with methodologies adapted from hackathons and Design Sprint (Ferreira & Canedo, 2020; Jansen-Dings et al., 2017; Knapp et al., 2016; Lara & Lockwood, 2016; Medina Angarita & Nolte, 2020). Both formats are considered learning methods that originated in software engineering and later transferred to the economic and design domains. They are based on activating collaborative processes for the development of innovative ideas to solve complex problems in a short time. They aim to rapidly generate innovative solutions to complex challenges, leveraging young minds' creative and innovative potential through team competition, collaborative group work, and a hands-on approach. The workshop unfolded over five hours, during which the students engaged in a friendly competition to address challenges and identify opportunities related to the UNESCO Site of Ivrea. The methodology of the Design Sprint provided a structured framework with predefined rules, facilitating the active involvement of students, teachers, and external experts. The participants had a set space and time to develop new projects in response to recognised needs within the Site, articulated around specific topics.

The integration of methodologies between the first two workshops and the third was evident in the continuity of participatory tools and the emphasis on stakeholder engagement. However, the third workshop introduced additional elements, such as the use of "needs cards," which contained comments and reviews about the Site from various audience perspectives. This allowed participants to compare these external perceptions with their own, fostering a deeper understanding of the Site's needs and potential. In conclusion, the third workshop represented a methodological evolution tailored to the younger demographic, maintaining the participatory essence of the previous sessions while introducing new techniques to stimulate innovation and active learning. This approach not only engaged the students in managing the UNESCO Site but also empowered them to become proactive contributors to the sustainable development of their cultural heritage.

5. Findings: Evaluating UNESCO World Heritage Site Management Through Action Research

The analysis of the interviews and co-creation workshops yielded valuable insights into the management dynamics of the UNESCO World Heritage Site of Ivrea and the opportunity to increase community engagement to shape its future. First, the exploratory interviews conducted with key stakeholders in Ivrea enabled a comprehensive needs analysis linked to the management of the World Heritage Site. Participants, drawn from local authorities, universities and schools, local associations, partners in specific projects aimed

at enhancing and promoting the World Heritage Site, funding bodies, and beneficiaries, provided qualitative reflections on the implemented actions, governance, and future development perspectives.

A recurring theme from the interviews was the need for a governance structure that would be better able to steer private action towards the UNESCO Site's valorisation and maximising its properties' usability. One interviewee mentioned: "There is a necessity for governance that can direct private efforts in a way that truly benefits the heritage site and its accessibility." Another participant echoed this sentiment: "The actors involved in the Management Plan can influence this management by fostering shared governance practices between public and private entities."

The interviews revealed a critical knowledge gap among local actors regarding the Management Plan, and this limited the interviewees' ability to collaborate on collective projects, as highlighted by one participant: "The absence of a defined budget to support all the actions planned has made it complex for some stakeholders to develop articulated and shared project designs." This gap has been identified as a pivotal area for intervention, with targeted efforts needed to increase awareness and understanding of the Management Plan within the local community. Moreover, some participants highlighted the importance of involving schools and young individuals in the site's management: "Engaging schools and young people is undoubtedly an objective to pursue. The connection between education and heritage is crucial for fostering a sense of ownership and active participation." This perspective aligns with the broader goal of nurturing a new generation of heritage stewards who can contribute to the sustainable development of Ivrea's industrial legacy.

Additionally, the quantitative assessment of stakeholder satisfaction, conducted via a mini-survey questionnaire, highlighted varying levels of satisfaction (from 0 to 5) across the five actions of the Management Plan. The survey results, depicted in Table 1, indicate a correlation between stakeholders' familiarity with the plan and their level of satisfaction, suggesting that increased knowledge could lead to more effective engagement and implementation of the plan.

The intersection of qualitative and quantitative methods has provided insights into the management dynamics of Ivrea's UNESCO Site. The critical analysis of these findings points to the importance of governance, collaboration for project development, and the empowerment of local actors through education and increased plan awareness, setting a course for the Site's sustainable future.

Second, two co-creation workshops, "Management Plan Assessment" and "Future Scenarios," were conducted. Guided by the outcomes of the interviews, the workshops aimed at involving local actors in the management

Table 1. Satisfaction of interviewees (on a scale of 0 to 5) with regard to the five Actions Plans (A. Coordination, B. Protection, Conservation and Documentation, C. Capacity building, D. Communication and Education, E. Presentation) of the Management Plan of the UNESCO World Heritage Site of Ivrea.

Action Plan of the Site Management Plan	Level of satisfaction (from 0 to 5)
A. Coordination	3.59
B. Protection, Conservation and Documentation	3.53
C. Capacity building	3.47
D. Communication and Education	3.06
E. Presentation	2.85

of the UNESCO Site, raising awareness of the Site’s values for social and community growth, and collectively identifying development opportunities. These workshops served as a collaborative platform to redesign the relationships between institutions and other stakeholders, ensuring sustainable development and heritage safeguarding. The collective intelligence of different stakeholders emerged as a vital resource for shaping the future of the UNESCO World Heritage Site.

Participants were divided into small groups in the first co-creation workshop dedicated to assessing the Management Plan. They were encouraged to (a) identify and reflect on the overall needs of the UNESCO World Heritage Site and (b) indicate specific actions to address those needs (see Figure 1). Starting by analysing the current situation, participants highlighted aspects that need to be addressed in the future. These include the enhancement of skills and capabilities, especially in the field of tourist hospitality, increased involvement of the local community beyond specialised audiences, the strengthening of international and national networks through the exchange of best practices, and the development and innovation of entrepreneurship based on past industrial experiences.



Figure 1. Needs and corresponding actions emerged in the first participatory workshop of the UNESCO World Heritage Site Management Plan of Ivrea.

Afterwards, the workshop facilitated a collective analysis of the impacts of the UNESCO designation on the local context, as perceived by the workshop participants (see Figure 2). The socio-cultural and economic impacts identified by the participants illustrate diversity in the roles and commitment of the different stakeholders and highlight key elements for the site's future development. Some participants highlighted among the impacts an increased knowledge of Olivetti's cultural heritage and, more generally, the raising of awareness of issues related to the UNESCO designation and industrial architecture, e.g., through increased access to the Olivetti historical archive or activities carried out in local schools. Other participants, especially those linked to local authorities, emphasise the activation of a process of safeguarding the 20th century industrial architecture heritage and the ongoing effort to reuse these buildings.

In the second co-creation workshop, participants were prompted to reflect on potential actions to align the new Management Plan (2024–2027) of the Site with the Agenda 2030 and, in particular, to the four Culture Indicators defined by UNESCO: Environment and Resilience, Prosperity and Livelihoods, Knowledge and Skills, Inclusion and Participation (see Figure 3). This futuring session aimed to incorporate sustainable development principles into the new Plan and align the management strategies with global cultural sustainability goals outlined by UNESCO. For instance, education and capacity building are to be considered central to the site's management, aiming to foster awareness and skills for enhancing both tangible and intangible heritage. Additionally, achieving economic growth under environmentally and socially sustainable conditions and promoting innovative industrial development are indirect objectives that characterise the strategic vision of the management of the site. Lastly, the field of environmental sustainability and the promotion of responsible production and consumption align with strategies for establishing environmentally

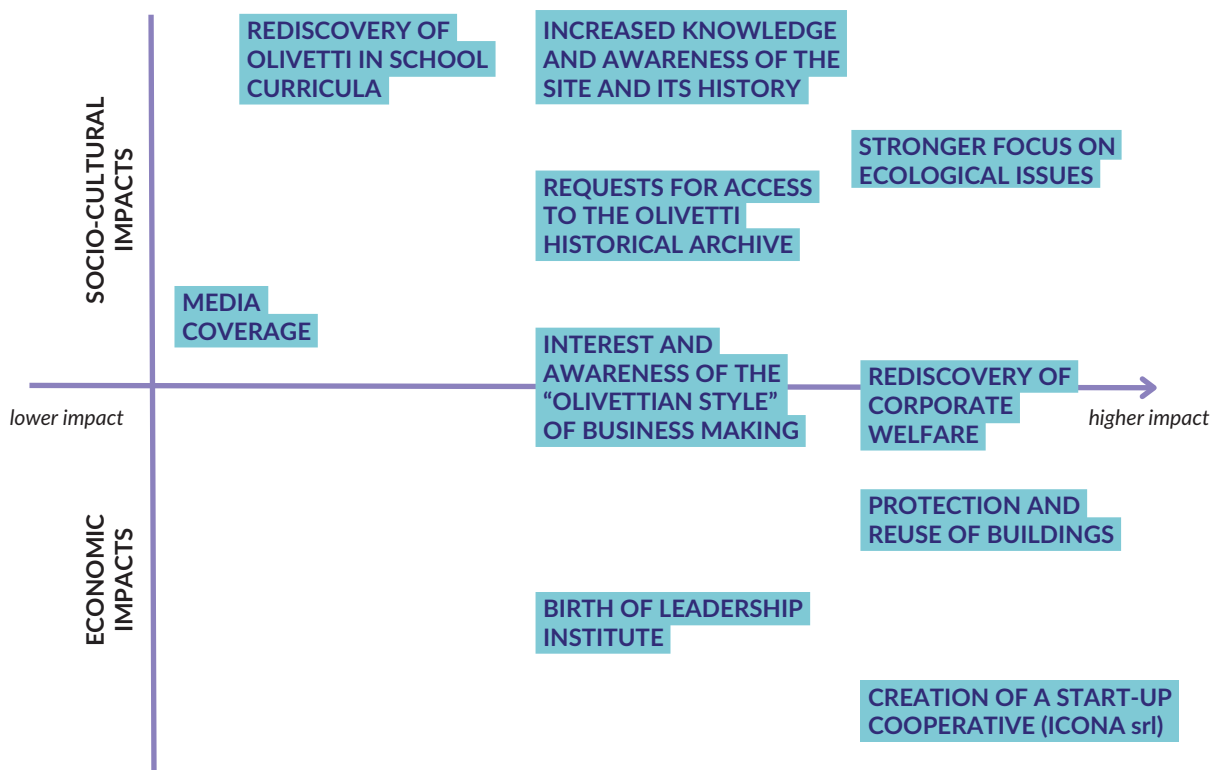


Figure 2. The economic and social impacts of the designation of Ivrea as a UNESCO World Heritage Site were observed by the participants in the first participatory workshop.

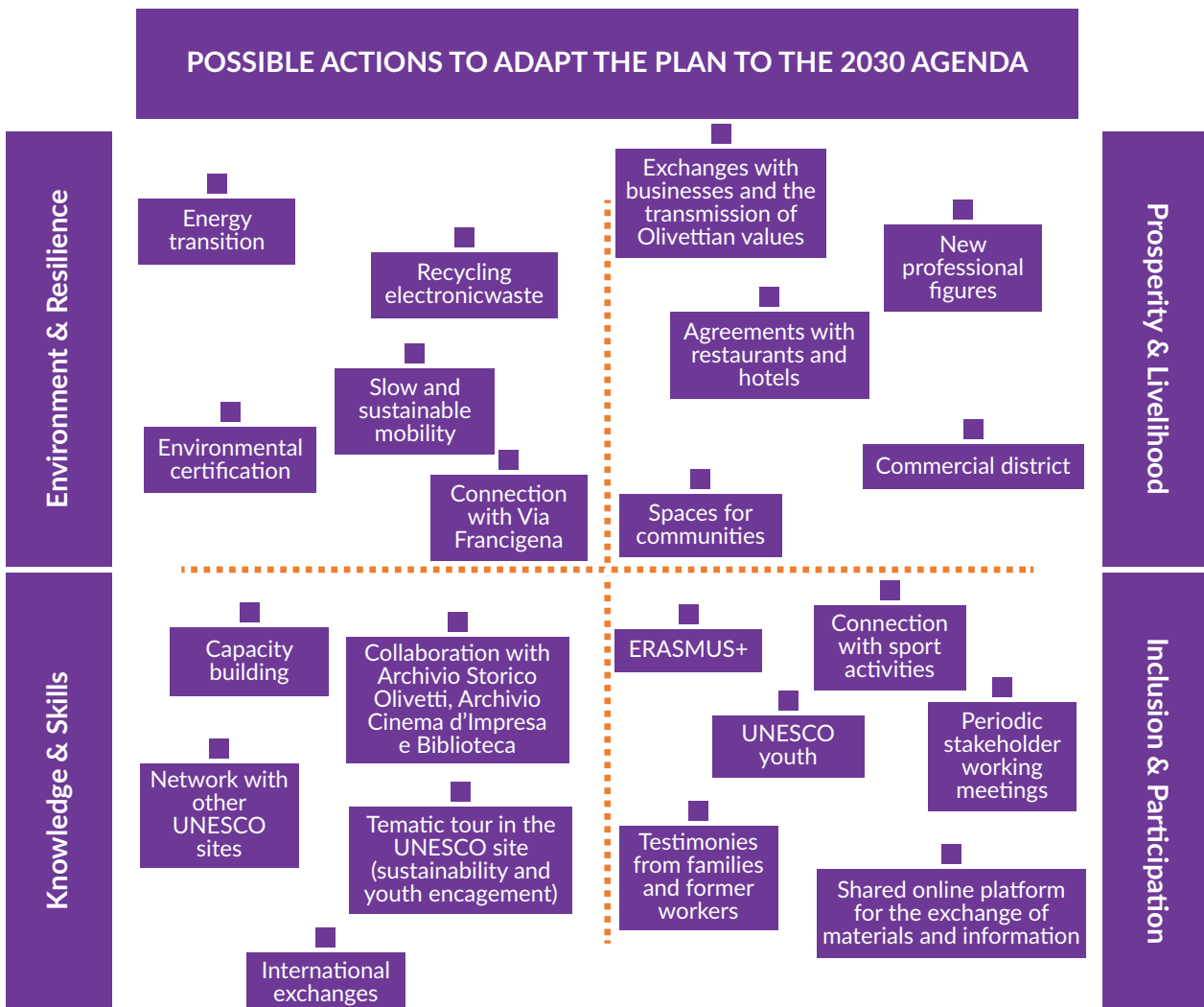


Figure 3. Possible actions to align the management of the Ivrea UNESCO World Heritage Site with the 2030 Sustainable Development Goals (SDGs), as identified by the participants in the second participatory workshop.

conscious businesses in the realm of sustainability within the territory. The two workshops contributed to a deeper understanding of the local perceptions and aspirations of the UNESCO World Heritage Site and can guide the formulation of more inclusive and forward-thinking strategies for the UNESCO World Heritage Site of Ivrea.

Third, we explored youth engagement in the third and last co-creation workshop, which was designed as a hackathon—an intensive, time-bound event that brings together diverse talents to creatively solve specific challenges through rapid prototyping and experimentation, thus fostering collaborative innovation. The workshop hosted a combination of presentations of the context of Ivrea, cultural professionals acting as mentors, and group work guided by design tools and supported by facilitators. A total of 53 students from two high schools in Ivrea actively participated in the hackathon. Several milestones were reached through the workshop:

- Increased awareness: The initiative contributed to the widespread awareness of the value, uniqueness, and cultural resources of the local area and the UNESCO-designated site.

- Direct engagement and mobilisation: The workshop successfully engaged and mobilised young individuals, inspiring them to define objectives and actions aimed at the sustainable development of the UNESCO Site.
- Information dissemination on site management: The workshop facilitated the dissemination of information about the Site Management Plan, easing the integration of young participants into the network of stakeholders who were actively involved as key contributors to the ongoing processes. The involvement of youth as protagonists in addressing the current needs and future challenges of the UNESCO Site was a significant achievement.

The hackathon approach can be considered an effective way for harnessing the creative potential of the younger generation. The workshop not only contributed to the identification of youth perspectives but also fostered a sense of ownership and connection towards their city's UNESCO World Heritage Site. Integrating innovative approaches to bridge the gap between tradition and innovation proved to be essential when ensuring the Site's relevance for future generations.

One important aspect that emerges through the analysis of the interviews and the workshops is the need to attract organisations that are able to share Olivetti's philosophy and values while at the same time making the UNESCO Site management system more dynamic, innovative, and forward-looking. To meet this need, several efforts were identified to leverage the international networks activated by the UNESCO designation and use the protected buildings to foster innovation. One example in this respect is Officine ICO, a manufacturing facility that was part of Camillo Olivetti's company expansion. Conceived initially as a manufacturing facility, Officine ICO has undergone extensive transformation through the years. Several building alterations and adaptations were made in the past to adapt the facilities to new production needs and regulatory requirements (Ivrea Città Industriale, n.d.-a, n.d.-b; Ministero della Cultura, n.d.). Officine ICO was bought recently by ICONA Srl, an organisation led by Andrea Ardisson and Alberto Zambolin, with the purpose of revitalising the industrial legacy of Olivetti. On November 9, 2017, ICONA Srl signed a preliminary agreement to acquire a segment of the Red Brick Factory, now known as Officine ICO (Ivrea Città Industriale, n.d.-b). The two founders convened a general assembly of 20 stakeholders who collectively embraced the vision of modernising industrial sites linked to Olivetti. Their shared mission was to interpret socio-economic shifts and anticipate future challenges. The project "The Future Is Back Home" is a notable brainchild of this collaborative effort. Envisioned as an innovation lab, this place is poised to test and refine new production models, pioneering new educational approaches and social initiatives. The proposed project positions the Red Brick Factory as a hub for innovation designed as an inclusive space beckoning the local community and the global stage alike. It aspires to be a platform for ideas, individuals, and enterprises, seamlessly bridging technology and societal issues, innovation and industrial heritage (Officine ICO, n.d.-b).

A second project within Officine ICO is Officine ICO•LAB. Orchestrated by CZA Architects, this project aims to craft a contemporary space harmonising business zone, public social hubs, services, training grounds, exhibition spaces, and laboratories. Drawing inspiration from Adriano Olivetti's vision of a tangible community, the initiative strives to forge a novel ecosystem that balances entrepreneurship, personal development, societal impact, and environmental considerations. Objectives encompass inclusivity, cultural production, local actors' empowerment, innovation promotion, and fostering social economy initiatives. The approach emphasises collaboration, multidisciplinary methodologies, strong community ties, creativity, and sustainability as a guiding principle (Officine ICO, n.d.-a).

To accelerate the revitalisation of Olivetti industrial areas, Ener2Crowd and Infinityhub have launched a crowdfunding campaign for Officine ICO in 2023. This month-long campaign sought to secure a portion of the resources required for the regeneration of some of the spaces of Officine ICO. The envisioned project encompasses the energy redevelopment of historic premises to transform an area of 30,000 square metres into production and prototyping zones for existing and new businesses (Ener2Crowd, n.d.).

Innovation manifests itself in Ivrea as a cluster of projects poised to reignite past architectural, cultural, and social innovation. To this regard, it becomes crucial to acknowledge that the economic landscape of Ivrea today differs significantly from the conditions that led to Olivetti's innovations. In this context, UNESCO can play a pivotal role as a catalyst to foster new paradigms in innovation. The adaptation sought goes beyond heritage preservation, as it extends to the creation of new directions for future development. The pivotal question remains whether the international network fostered by UNESCO, individual initiatives, and public-private funds will align and prove sufficient for breathing contemporary vitality into the legacy of Olivetti.

6. Conclusions

The analysis of Ivrea's UNESCO World Heritage Site management has provided insights into its current status and future development. The assessment of stakeholder satisfaction with the Management Plan uncovered a central challenge related to the nexus between the local community and Ivrea's industrial heritage. Community awareness, active participation, and the promotion of community education were identified as key priorities.

This study has three main implications. First, there are theoretical implications concerning the enhancement of community awareness and fostering active participation, particularly through innovative initiatives targeting different age groups. The exploration of youth involvement through dedicated workshops has highlighted the potential for fostering fresh perspectives and ensuring the relevance of heritage for future generations. Furthermore, innovative projects supported by private enterprises and crowdfunding campaigns emphasise the importance of aligning international networks and public-private funds to revamp the legacy of Olivetti's philosophy and values. As Ivrea navigates the intersection of tradition and innovation, the UNESCO designation stands as a catalyst, guiding the city's evolution towards the coexistence of its industrial heritage and contemporary dynamism. This research contributes to the broader discourse on participatory heritage management, offering valuable insights for academics, policymakers, and local stakeholders invested in the sustainable development of UNESCO-designated sites.

Second, the study advocates for the methodological merit of the action-research approach in exploring community engagement in the management of a UNESCO World Heritage Site. Carried out through co-creation workshops, action research engenders a dynamic and participatory investigative approach. The engagement of local actors facilitates a nuanced comprehension of their perspectives and aspirations, thereby leading to the formulation of inclusive and forward-thinking strategies for the UNESCO World Heritage Site.

Lastly, this study advocates for well-informed policy-making, recognising the inherent connection between tradition and innovation. The study underscores the importance of aligning public and private interests for innovative developmental initiatives in the context of heritage preservation. Significant aspects include the potential discrepancy between UNESCO Site designations, actual site usage, and the transient nature of

cultural clusters in industrial heritage. The inquiry into whether cultural clusters could become permanent features raises thought-provoking questions, including the role of a UNESCO designation as political legitimization for permanent cultural uses. While the study does not directly tackle the topic, it suggests directions for further investigation. Indeed, cultural uses are pivotal for future site utilisation, and while participatory workshops have touched upon this, deeper exploration is needed.

In conclusion, this investigation contributes to broadening theoretical paradigms, methodologies, and policy considerations essential for the sustainable development of UNESCO World Heritage Sites. The study may offer a blueprint or roadmap for reconciling tradition and innovation in managing and preserving cultural heritage. On the local level, raising awareness and facilitating active participation among local stakeholders lays the groundwork for fostering a deeper appreciation and understanding of Ivrea's industrial heritage, ensuring its continued relevance and significance for future generations.

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Conflict of Interests

Erica Meneghin from Fondazione Santagata reports that she worked on the commissioned project which received funding from the Municipality of Ivrea. The other co-authors declare they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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About the Authors



Matilde Ferrero is currently a PhD candidate at Magna Græcia University of Catanzaro (Italy). In 2023 she was a visiting PhD researcher at Erasmus University Rotterdam (The Netherlands). Her PhD research project explores how contemporary artists realise values between the art market and communities in urban contexts. Matilde holds a bachelor's degree in cultural heritage (University of Turin) and a master's degree in innovation and organisation of culture and arts (Alma Mater Studiorum – University of Bologna).



Martha Friel (PhD) is assistant professor of economics and business management in the Faculty of Arts, Fashion and Tourism at IULM University, Milan (Italy). Her research and teaching activities cover the economics and management of culture, creative industries, and tourism. She has published extensively and taught at major universities in Italy and abroad. She is senior fellow of the Fondazione Santagata for the Economy of Culture (Italy).



Erica Meneghin (PhD) is an architect and has a PhD in architectural and landscape heritage from the Politecnico di Torino and an MA in natural heritage management. She is currently serving as director of the Heritage Area at the Fondazione Santagata for the Economics of Culture, and is also acting as technical consultant for European projects and local development. She has experience as a researcher in the field of cultural heritage, having contributed to the development of management and strategic plans for cultural institutions and UNESCO sites.



Mariangela Lavanga (PhD) is associate professor of cultural economics and entrepreneurship at Erasmus University Rotterdam. Mariangela is the academic lead on fashion sustainability transition at the Design Impact Transition (DIT) platform, academic coordinator of the MA in cultural economics and entrepreneurship as well as co-founder and coordinator of the Minor Fashion Industry. She researches and teaches on cultural and creative industries and sustainable urban development. In particular, she focuses on the sustainability transition in the fashion and textile industry.