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Industrial heritage, adaptive reuse and sustainable redevelopment scenarios: including local communities' multiple values in the decision-making process

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Abstract

Abandoned 19th and 20th century industrial buildings represent a particularly vulnerable form of cultural heritage and current evidence shows that their preservation is frequently at risk. Overall, the implementation of adaptive reuse interventions is generally recommended as a sustainable strategy to conserve these buildings, make them meaningful for the present society and eventually enable their transmission to future generations. However, the lack of awareness about the multiple values of industrial heritage (IH), the scarcity of economic resources and the presence of competing interests of different stakeholders – e.g. owners, local government, bodies for the protection of cultural heritage, potential investors, residents, etc.- make the decision-making process about the future of IH far from being straightforward.
Capitalizing on the case of a recently abandoned industrial area located on the Ligurian coast (Italy), this piece of research aims to highlight that investigating the points of view of relevant communities (e.g. about the intangible values attributed to IH, perceived socio-economic needs, etc.) at an early stage of the decision-making process can contribute to reduce social conflicts and favor the development of projects able to combine the fulfillment of socio-economic objectives with the preservation of the local identity and memory. Then, as a preliminary step towards the adoption of a holistic approach, the paper explores communities' willingness to pay for favorite redevelopment scenarios, to elicit the intangible values associated by different subjects to IH. Finally, it advances that evaluation frameworks to be adopted in the future should be able to consider the principles of civil economy and intergenerational equity.

Keywords: Industrial heritage • Evaluation • Willingness to pay • Values • Memory • Sustainability • Civil economy

1. Introduction

The approaches and methods progressively developed by the evaluation discipline allow to debate and estimate different dimensions of the value concept, being it applied to natural, built or cultural resources.

A particular field of investigation is represented for instance by cultural heritage and, in this specific realm, by industrial heritage (IH) buildings.

However, the valuation and decision-making process regarding the preservation, re-use and transmission of this heritage to future generations result to be particularly challenging, since the scarcity of economic resources, a certain lack of awareness about its multiple values and the presence of competing interests of different stakeholders – e.g. owners of the buildings, local government, bodies for the protection of cultural heritage, potential investors, residents, etc.- make these assets vulnerable and their existence contested.

More than other material remains inherited from the past, historical industrial buildings present multiple connections with natural structures, technological infrastructures and cultural superstructures, making their valuation complex. Firstly, industrial activity is frequently associated to the transformation of raw materials, thus entailing a connection with natural structures; additionally, IH buildings are in many cases part of local landscapes and problematizing the dialogue between natural and built resources is of particular importance. Secondly, IH in itself can be conceived as a technological infrastructure, since in many cases industrial buildings and machineries are the means through which economic activities have developed. Thirdly, IH is connected to cultural superstructures because the historical, social and symbolical significances that are associated to it are the product of a cultural process and they derive from the values that communities have progressively constructed, negotiated and transmitted.

In this framework, how is it possible to estimate the values attributed to IH and take decisions that are sustainable by an environmental, economic but also historical, social and cultural point of view? As reported by some authors, recent neoliberal redevelopment projects have frequently favored profitability to the detriment of social, historic and cultural values (Boland et al. 2017), but international guidelines recommend that adaptive interventions should take into account communities' points of view and that the memory component should be definitely maintained (ICOMOS 2011; TICCIH 2003), also in light of the principles of intergenerational equity (De la Torre 2013).

Given the multidimensional values of IH buildings and the importance of the intergenerational equity dimension when performing redevelopment projects concerning cultural heritage, the estimation of the perceptions of value by different stakeholders is particularly challenging; in this framework, the adoption of purely quantitative research methods may not be sufficient (Capriotti 2017), and the exploration of alternative approaches (e.g. combining qualitative and quantitative methods) can be beneficial. For instance, the holistic approach is recommended (Aterelli 2017; Europa Nostra 2015; Ferrigni 2013); then, other trajectories focusing on the cognitive dimension of choice and inspired by the so-called behavioural finance applied to cultural heritage constitute interesting areas of exploration too (Coscia and Vycpalek 2010).

Building on these perspectives (to be furtherly explored in the future), in this contribution we adopt an integrated approach that builds on traditional quantitative methods but that at the same time aims to investigate the values attributed to IH

buildings by different stakeholders and local communities, in line with what proposed by recent recommendations and holistic approaches. More particularly, we suggest that the integration of local communities' perspectives at an early stage of the decision-making process would allow to timely identify the social and cultural values attributed to recently abandoned industrial buildings, as well as to map the socio-economic needs that the community would like to satisfy through redevelopment projects concerning abandoned industrial areas. In our view, this could represent an important step to: a) prevent or at least reduce conflicts among stakeholders; b) speed up the decision-making process itself (e.g. avoiding the advancement of projects that do not take into account multiple perspectives and might thus be questioned); c) facilitate potential investors to pinpoint the factors that can make the investment both competitive and attractive; d) promptly undertake appropriate actions when needed; e) enable the implementation of an adaptive evaluation approach fostering progressive, mutual and collaborative learning (Cerreta et al. 2016).

The rest of this contribution is structured as follows: Section 2 contextualizes IH and its multiple values; Section 3 provides an empirical example of these concepts making reference to the case of a recently abandoned industrial complex located on the Ligurian Coast (Officine Piaggio of Finale Ligure, Italy); Section 4 investigates the values attributed to Officine Piaggio and redevelopment projects through the analysis of survey data and the application of the willingness to pay (WTP) approach; additionally, it analyzes respondents' perceived values and preferences by the means of non-parametric statistics and it suggests how these results could be integrated in the decision-making process; finally, Section 5 draws some conclusions and disciplinary considerations.

2. Industrial heritage: multidimensional values and the challenges of sustainable adaptive reuse

2.1 Industrial heritage: tangible values, intangible values and legacies

In the broad realm of cultural heritage resources, a particular category is represented by industrial heritage (IH). According to the definitions developed by the International Council of Monuments and Sites (ICOMOS) and the International Committee for the Conservation of Industrial Heritage (TICCIH), IH consists not only of the immovable material remains of past or ongoing industrial processes (e.g. sites, structures, complexes, areas and landscapes), but also of movable assets (e.g. machinery, documents, etc.) and related intangible values (ICOMOS 2011). These values may encompass the scientific, technological, aesthetic and historical dimensions, as well as the social one (TICCIH 2003). In fact, it has been acknowledged that industrial activity has frequently left a profound historical, socio-economic and cultural legacy: if in some cases this influence has affected either the development of entire regions or the evolution of history at the global level, in many others it has exerted its effects especially on local communities, contributing to shape the memory and identity of places and inhabitants (ICOMOS 2011; TICCIH 2003).

Even though the concept of IH can be basically applied to any age, the historical period of principal interest extends from the beginning of the Industrial Revolution (second half of 18th century) to the present days (TICCIH 2003), thus including contemporary and 19th - 20th century industrial buildings that may be either active or fallen into disuse only recently. With reference to the Italian context, an extraordinary example of 20th century IH is represented for instance by the city of Ivrea, where the Olivetti's factory, headquarters and residential buildings were located (Coscia et al. 2019; Barreca et al. 2017; Coscia and Curto 2017): the site was inscribed in the UNESCO World Heritage List in 2018 and its buildings are internationally renowned not only for their architectural value and for being related to a pioneering computer company, but also for being the material witnesses of a socio-economic turn and of an innovative and inclusive idea of society.

Despite the presence of encouraging examples as the one mentioned above, current evidence shows that IH is nonetheless frequently at risk. This is due to several reasons, including lack of awareness about its multiple values, environmental issues, changing economic trends, inadequate legal protection measures and also negative perceptions (ICOMOS 2011; TICCIH 2003).

2.2 Abandoned industrial buildings: the values and challenges of adaptive reuse

Even though in a context of limited economic resources it might be necessary to perform a selection of the buildings to be promptly restored, an adaptive reuse of abandoned industrial buildings that is able to respect their architectural elements (Romeo et al. 2015), interpret their original use and satisfy present needs of the local community should be recommended (Mısırlısoya and Günc 2016). In fact, redevelopment strategies of this kind would allow in most cases to:

1) extend the life cycle and embodied energy of existing structures (TICCIH 2003);
2) promote the protection and requalification of the local natural, urban and cultural landscapes, in light of both soft and hard values (Cerreta et al. 2014; Cerreta and Mele 2012);
3) generate positive externalities of various kinds, such as land consumption reduction, increase of local real estate values and development of new economic activities and jobs (Dell'Ovo et al. 2020; Mohamed et al. 2017);
4) preserve local identity, sense of place and place attachment (Nikolić et al. 2020), especially for generations that have directly experienced the personal, social and economic effects brought by the industrial activity under consideration;
5) transmit IH tangible and intangible assets to future generations, coherently with the principles of intergenerational value and intergenerational equity (De la Torre 2013),

overall contributing to the environmental, economic and social sustainability of the interventions.

Among the points listed above, it must be mentioned that the concept of intergenerational value is not new and that it is actually well-established in the estimative and valuation disciplines, as evidenced for instance by the Total Economic Value (TEV) framework (Coscia et al. 2018; Coscia and Curto 2017). Originally developed in the late 1980s-early 1990s in the realm of environmental economics (Sirchia 2000), the TEV of a heritage asset includes both use and non-use values (i.e. existence value, option value and bequest or intergenerational value), together with generated externalities (Rubino et al. 2020). However, with the dissemination of the principles of sustainable development and of the civil economy (Becchetti and Cermelli 2018), the intergenerational value concept has recently attracted renovated attention (Berni and Gabrielli 2018; Lombardi and Cooper 2018; Mondini 2018; Sdino et al. 2018; Trovato and Giuffrida 2018). More particularly, civil economy offers an alternative perspective to modern economic theory (Zamagni 2018) and it entails a departure from the profit maximization paradigm to satisfy the interests of a wide range of stakeholders and achieve common well-being, which is conceived as *"the stock of cultural, environmental, spiritual, and economic resources that a community can enjoy"* (Becchetti and Cermelli 2018, p. 1). Coherently with this perspective, fundamental principles such as reciprocity and redistribution are applied also in terms of intergenerational solidarity, and common good is conceived not as the sum of single utilities and levels of well-being but rather as the result of a multiplication in which none of the factors can be null.

2.3 Towards the integration of local communities' perspectives and memories in the decision-making process: enriching SWOT and stakeholder analysis with exploratory surveys

Overall, international bodies for the preservation of built heritage seem to suggest that redevelopment projects concerning IH buildings should aim to achieve not only environmental and economic sustainability but also the cultural and social ones; in this process, the inclusion of the historical and memory components is thus essential. The memory -and living memory- perspective particularly applies to 20th century and recently abandoned industrial buildings: in fact, people's memories can contribute to shape heritage meaning and they represent an irreplaceable resource of knowledge (TICCIH 2003); additionally, people's relationship with IH contributes to the social value attributed by the community to these material relics. More particularly, it can be actually advanced that the present generation carries the responsibility for the collection and transmission of the tangible and intangible values of IH to future ones.

As remarked by IH bodies, *"every effort should be made to ensure the consultation and participation of local communities in the protection and conservation of their local industrial heritage"* (TICCIH 2003, p. 5). As a consequence, it is suggested here to integrate local communities' perspectives at an early stage of the decision-making process, collecting local communities' opinions and perceptions

either through focus groups or through exploratory surveys. In both cases results may then enrich SWOT and stakeholder analysis, which are usually performed in preliminary phases of the decision-making process. Even though exploratory surveys might be more time-consuming, the collection of the opinions of a larger number of people allows for statistical analyses and in some cases even for an estimation of the use and non-use values attributed to IH complexes. Additionally, results may inform the identification of new uses that are compatible with multidimensional sustainability issues. Figure 1 shows the methodological framework followed in the study, which integrates the exploration of local communities' perceptions into more traditional research approaches. In the proposed framework, the analysis of the context and the mapping of the stakeholders is combined with the conduction of an exploratory survey. This survey is addressed to relevant stakeholders and it aims not only to identify the values attributed to selected IH buildings but also to estimate these values calculating the WTP for hypothesized redevelopment projects. Results are integrated into traditional SWOT analysis, functioning as a basis for the proposal of a redevelopment scenario coherent with local communities' values and characterized by a higher degree of social and cultural sustainability.

SWOT analysis was preferred to other techniques informing the decision-making process for the following reasons: 1) it can be easily replied to other contexts and scales (e.g. region, municipality, single site, etc.); 2) it takes into account themes previously identified by experts and researchers (e.g. "memory", "heritage", etc.); 3) strengths, weaknesses, opportunities and threats emerge from a critical process entailing the analysis of different data-sources and of data pertaining different scales; 4) it is able to report in a descriptive and synthetic form the results stemming from the analysis and related to different stakeholders and redevelopment scales.

Overall, the collection of local communities' perspectives is not seen here as an alternative to well-established methods such as panel of experts' opinions (Dell'Ovo et al. 2020; Fregonara and Coscia 2019; Oppio et al. 2015; Ferretti et al. 2014; Giove et al. 2010), but rather as a step that can contribute to the achievement of social and cultural sustainability.

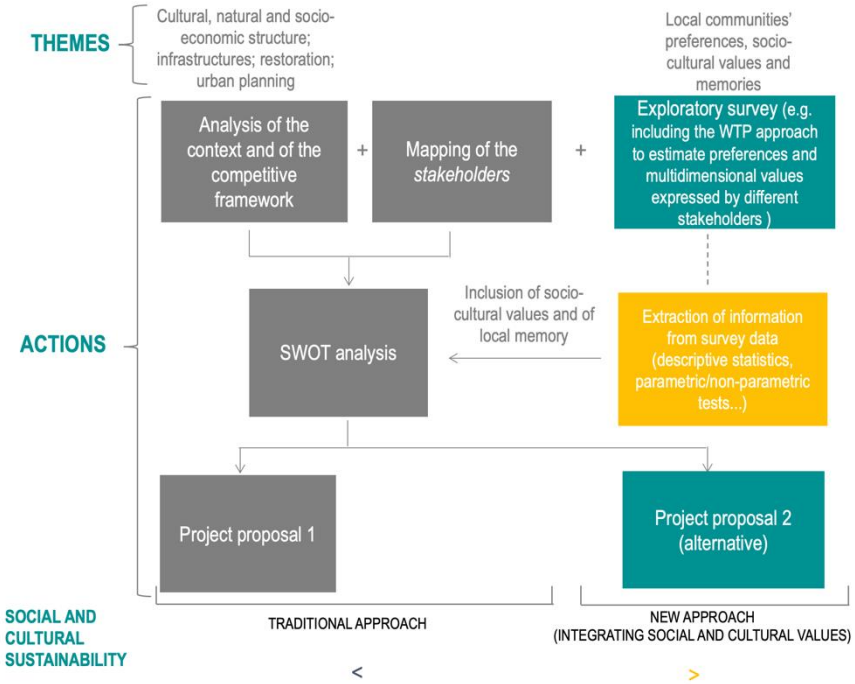


Fig. 1. Enriching SWOT analysis with exploratory surveys about local communities' perspectives *(source: authors' own elaboration)*

With reference to stakeholder analysis (Coscia and Russo 2018; Coscia and Zanetta 2018), it is important to recall here that many actors are usually involved in redevelopment projects of IH. If inhabitants' and other local communities' perspectives need to be definitely mapped and heard, traditional players are – for instance- public (e.g. Municipality, local bodies for the protection of cultural heritage, such as *Soprintendenze* in Italy, etc.) but also private actors (e.g. potential investors and economic subjects). When mapping stakeholders and integrating perspectives, it is also important to clarify which are the actors that have decisional power, economic resources and formal influence. For instance, the application of the salience model -which takes into account power, legitimacy and urgency (Mitchell et al. 1997) - can help clarify reciprocal relationships and areas of influence, as to make the decision-making process more rational, effective and transparent. Regardless of the specific subjects that in different contexts may have decisional power, the integration of local communities' opinions by the means of structured analyses may not only inform the decision-making process in practical and operational terms, but also arise in decision-makers a higher degree of awareness about the conservation and redevelopment problem to solve. Then, investigation of the WTP for regeneration projects could also provide useful data to cost-benefit analysis.

The following Sections will empirically illustrate how the integration of local communities' perspectives in the decision-making process about adaptive reuses of IH can facilitate the agreement of multidimensional, sustainable and informed interventions.

3. Industrial heritage in Finale Ligure (Italy): preserving, transmitting and generating multidimensional values

Officine Piaggio are an ex-industrial complex located along the coast and close to the main communication arteries of Finale Ligure, i.e. an 11,000-inhabitants town that belongs to the Savona province in Italy. The local economy relies on industrial and craft activities, but especially on summer seaside tourism. The Piaggio complex - which extended over an area of 52,400 m^2- is today in a state of severe degradation, but during the 20th century it strongly influenced the economic growth of the community and village of Finale Ligure.

In 1900 Rinaldo Piaggio (1864–1938) decided to open a new branch of his business in Finale Ligure for the wood processing industry and in 1907 the first warehouses, designed by the architect Riccardo Haupt, were built close to the railway line. Due to the expansion of the industrial plant to host the production of airplanes and seaplanes, the young Piedmontese architect Giuseppe Momo (1875–1940) was called to build the large experimental hangar in reinforced concrete between 1917 and 1920, as confirmed by the drawings kept in the Turin State Archives. The innovative hangar structure is unusual for an industrial building: it is made up of a single central nave (22 m height, 26 m width, 100 m length), flanked by five sheds on the sides.

Between 1917 and 1920 Momo also designed the Officine Motori sheds and in 1937 the Palazzina Uffici, using a rationalist style with stereometric volumes and ribbon windows. Up to 2000 the Piaggio factory district has grown in specialization and has played a key role in the aeronautics industry. The factory has been abandoned since 2013, when it was decided to move the production to Villanova d'Albenga, and Piaggio decided to sell the property of Officine to the Finalmare S.p.a. Company. In 2007 an Urban Operational Plan (U.O.P.) proposing the demolition of the complex—with the exception of 200 square meters of the hangar—in favor of the creation of a new residential and touristic district was advanced. In 2013 a U.O.P. variant allocating some space to public functions but still prioritizing touristic and real-estate purposes was then proposed.

In 2016 the local *Soprintendenza*, i.e. the local branch of the Italian Ministry of Cultural Activities and Heritage, expresses a prohibition of demolition, justified by the following statement: "*With demolition the inseparable relationship between the natural landscape and the built-up area of the city of Finale would be lost immediately"* (declaration of cultural interest, 2016). Additionally, local associations are asking for the conservation of these architectures. In particular, Salvaguardia del Finalese association and the national foundation Fondo Ambiente Italiano (FAI) have organized events and conferences to promote a revision of the proposals advanced in the U.O.P., which seem to be unsustainable from the environmental and the socio-cultural points of view.

Given this context, in 2017-2018 we decided to conduct a research including a survey aiming at: a) investigating the relationship between the industrial complex and the Finale Ligure community, e.g. exploring the motivations in favor of the conservation or demolition of the Officine Piaggio structures; b) identifying preferences and WTP for redevelopment scenarios (Coscia et al. 2018). In light of the results emerged from the research, redevelopment scenarios alternative to the official ones and taking into account the memory values manifested by survey participants were proposed (Coscia et al. 2018).

Since that research, there have been important changes in the official design choices hypothesized for the area. Following numerous meetings between the parties – i.e. the Municipality of Finale and Finalmare S.p.a.- in January 2019, the Strategic Environmental Assessment (S.E.A.) examination was started and a variant to the U.O.P. (2013) was proposed. The new project includes:

a) the construction of a river park of 650 linear meters along the local Pora river, connected to the newly designed public spaces by paths and squares;
b) the creation of a 1.2 hectare of green area characterized by Mediterranean scrub, on the western edge of the area (Caprazoppa promontory). The Mediterranean scrub, that is currently a "residual element" in the areas of the beach free from bathing facilities, therefore becomes a fundamental element also on the seafront, distributed within large flower beds;
c) the creation of five new public spaces, linked to a path of memory: the (covered) square of the Market, the Piazza degli Idrovolanti, the Aurelia Rediscovery, the Hangar square and the Marina square;

d) the creation of a residential settlement with a maximum of 2,000 inhabitants including residents, tourists and employees of commercial and service activities;
e) the pedestrianization of a portion (about 250 m) of the Aurelia road, nearly to the project area and the new river park.

In November 2019 the first reclaim and demolition interventions were carried out on a portion of the Officine Motori warehouses, close to the Aurelia road. Currently the new project is awaiting a positive evaluation by the Liguria Region and by the company Finalmare S.p.a.

In light of this new proposal, it is interesting to compare the scenario outlined in a previous work -and developed incorporating survey results into SWOT analyses (Coscia et al. 2018)- with the aforementioned points of the new project for the Piaggio area (Figure. 2).

Scenario elaborated by the authors integrating sustainability issues and survey results (2017-2018)	**Scenario under evaluation (2019 variant)**
Conservation of the Officine Piaggio buildings characterized by historical and social value.	**Restoration** of a higher number of historical buildings (with respect to previous official proposals).
Allocation of space for sport activities, library and **archive**, associative activities, laboratories and **school** activities, conference and show area, equipped park, Piaggio aeronautical **museum**, start-up offices.	Design of **public spaces**, linked to a path of **memory**: the (covered) square of the Market, the Piazza degli Idrovolanti, the Aurelia Rediscovery, the Hangar square and the Marina square; creation of a **more limited residential settlement** (with a maximum of 2,000 inhabitants).
Creation of a new **pedestrian and cycle path** that allows to connect the restored buildings to each other and to the park located in the northern area; creation of safe areas for pedestrians (along Aurelia street, near points of interest).	Construction of a **river park** along the Pora river, connected to the newly designed public spaces by paths and squares; **green buffer zone** of 1.2 hectares (Mediterranean scrub); relocation of the Aurelia and transformation of the current headquarters into a **pedestrian and commercial street**.

Fig. 2. Industrial heritage redevelopment scenarios proposed by the authors in 2017-2018 and 2019 official proposals: a comparison *(source: authors' own elaboration)*

As can be seen from Figure 2, the latest updates regarding the future of the former industrial area are now in line with the scenarios hypothesized by the authors after including survey results into SWOT and stakeholder analysis: less demolitions, greater presence of green areas and public spaces and the creation of a path linked to the memory of the historic spaces of the former Piaggio workshops. This example thus shows that, in the context of the decision-making process that concerns large redevelopment projects, the integration of results stemming from the dialogue with all the project stakeholders -including citizens- since early phases could help make the process more effective, more rapid, less confrontational and more sustainable

by a socio-cultural point of view. In particular, it is interesting to note that in this last proposed scenario the memory component strongly emerged: as underlined by previous research (Coscia et al. 2018), this factor is fundamental in understanding the links between the inhabitants and the area of interest and therefore in choosing a requalification strategy that keeps it into account. The following paragraph will underline that enriching descriptive statistics of survey data with the performance of parametric/non-parametric tests could provide further insights to the understanding of the phenomena and to the overall decision-making process.

4. Expressing preferences and socio-cultural values in monetary terms: an estimation of the willingness to pay for the regeneration of the Officine Piaggio in Finale Ligure (Italy)

The elicitation of the WTP for hypothesized scenarios represents a well-established method to evaluate use and non-use values of cultural heritage resources. Even though the WTP approach (and contingent evaluation method) present some limits – e.g. free-rider problem, hypothetical nature of the proposed scenarios, clear identification of the beneficiaries of projects, etc. (Coscia et al 2018)- results can be used to identify and estimate the values attributed to different dimensions (including the socio-economic one) by different stakeholders, expressed in monetary terms. In previous research the WTP for redevelopment interventions concerning Officine Piaggio was investigated and results pointed out that higher WTP values were more frequently associated to residents rather than non-residents, and that people who actively participated to initiatives against the demolition of the Officine Piaggio complex were more likely to express the highest WTP values; this suggested that active involvement and intangible values associated to IH complexes may influence WTP values and also preferences for the new functions to be selected (e.g. museum) (Coscia et al. 2018). In order to better quantify and understand WTP patterns, further analyses have been performed. In line with previous results, it was decided to investigate in statistical terms whether residents and non-residents' WTP were different. More particularly, it was decided to examine whether WTP values were statistically different for Finale's citizens, other inhabitants of the Ligurian region and tourists: in fact, different WTP values may be an indication of different use and non-use values attributed to heritage and its adaptive reuse. Given that WTP was elicited in terms of intervals (i.e. 5-10 euros, 10-20 euros, etc.) and that available data were not normally distributed, the calculation of WTP means for each group and the performance of parametric tests (i.e. one-way ANOVA) were not considered as appropriate and robust. As a consequence, it was decided to explore the issue analyzing available data with non-parametric statistical techniques. Non-parametric tests measure central tendency using ranked data. Even though non-parametric techniques may be less powerful than parametric tests and be subject to type II errors, the main advantages of non-parametric tests are the following: a) they are not susceptible to outliers; b) they do not assume normal distribution; c) they can be used in case of non-normal, interval or ratio data that are highly skewed; d) they can treat different types of variables; e) they can be employed even for small samples.

For the purpose of this study, only the answers of participants who agreed to express a WTP value were considered and the WTP values of Finale's inhabitants (n = 60), Ligurian citizens (n = 50) and tourists (n = 54) were analyzed by the means of the Kruskal-Wallis test:

$$H = \left[\frac{12}{n_T(n_T + 1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} \right] - 3\,(n_T + 1)$$

Where:
k = number of populations
n_i = number of observations in sample i
n_T = total number of observations in all samples
R_i = sum of the ranks for sample i.

Results pointed out that there is a statistically significant difference between the WTP values of the three groups ($H = 11.84$; $p < 0.01$). Further analyses highlighted that residents attribute higher values to redevelopment projects, followed by tourists and then Ligurians. The performance of the Kruskal-Wallis test on the WTP values of the people who defined Officine Piaggio as abandoned buildings/historical buildings/symbolical buildings did not highlight statistically significant differences instead ($H = 0.58$; $p > 0.5$). Even though additional analyses can be envisioned, these and previous results seem to suggest that WTP -which reflects both use and non-use values- may be statistically different for different actors, and that an even deeper examination of these patterns may provide further indications on intangible values attributed to IH complexes and on their redevelopment. Finally, it can be added that it would be fruitful to contemporarily elicit WTP for different scenarios, as to better highlight favored uses in relation to different characteristics of respondents.

5. Conclusions and recommendations

Decision-making about IH is a complex process that needs to take into account the environmental, economic, cultural and social contexts of the buildings, the type and influence of the stakeholders involved, the memory values attributed to them by communities and the feasibility of the objectives that investors and public actors would like to achieve through adaptive reuse interventions. Through the comparison of the scenarios outlined in 2017-2018 and then in 2019 for the Officine Piaggio complex in Finale Ligure (Italy), this contribution has highlighted that incorporating local communities' perspectives since the early phases of the decision-making process could allow to timely identify which are the values attributed to abandoned IH by the population, outline which are their needs and inform redevelopment scenarios, overall enriching the number and types of factors that need to be taken into account while conducting decision-making procedures. Then, the performance of

non-parametric tests on survey data has highlighted that quantitative and statistical analyses may contribute to problematize survey results, interpret them and further focus on specific issues. As outlined in previous paragraphs, quantitative approaches and the estimation of the WTP present some limits, and the exploration of the intangible values attributed to IH buildings should be performed adopting a holistic approach able to combine qualitative and quantitative methods. In this perspective, further steps of research could be represented by the conduction of focus groups and/or in-depth interviews to selected stakeholders, as to better explore the multidimensional values attributed to IH buildings and redevelopment projects, also in light of intergenerational equity.

In the context of a civil economy framework in which intergenerational equity and a fair redistribution of resources play an important role, the inclusion of different values and perspectives into decisional processes seems essential, and it can be advanced that the estimation discipline – with its methodological tools and approaches- can offer a constructive contribution both to theoretical and operational applications regarding the valuation and evaluation of complex issues such as the conservation and adaptive reuse of abandoned IH buildings.

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