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Surfacing Values Created by Incentive Policies in Support of Sustainable Urban Development: A Theoretical Evaluation Framework

Umberto Mecca and Beatrice Mecca *

Interuniversity Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino, Viale Mattioli 39, 10125 Turin, Italy; umberto.mecca@polito.it
* Correspondence: beatrice.mecca@polito.it

Abstract: The development of sustainable cities involves improving the performance of the built environment and its effects on its context as one of the multiple intervention points. Indeed, outlining and implementing building artefacts does not constitute a simple act of generating a physical place, but represents a process that cannot ignore the positive and/or negative impacts that these transformations can have on the environment and societies in which it is embedded. Since in a profit-driven logic, a private investor's interest in environmental and social values may be limited in favour of economic value, a positive push towards urban sustainability can be found in government-promoted fiscal building incentives. Indeed, these tools offer direct actions for more favourable urban conditions, supporting private entities in meeting the intervention costs. This paper aims to define a theoretical evaluation framework through which the "sustainable" value creation potential of building incentives can be assessed. Through this framework, the research analysed the main Italian building incentives, observing how they support the creation of economic, environmental, and social values for the benefit of society, the environment, and urban areas. This paper discusses the usefulness of the framework in supporting public actors in the potential revision, definition, and communication of such incentive policies.

Keywords: value creation; building incentives; sustainable cities; evaluation framework

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1. Introduction

> *"Today we see with increasing clarity that economic growth, environmental protection, and social equity are one and the same agenda: the sustainable development agenda. We cannot make lasting progress in one without progress on all".* [1]

The built environment constitutes one of the key points on which we can operationally intervene for sustainable development: architectural spaces represent the crucial nodes for improving and achieving sustainability.

Outlining and realizing them is not a simple act of generating a physical place [2] but represents a process that cannot ignore the impact that these transformations may have on the environment and on the people who occupy or will occupy these spaces. So, the real estate process cannot leave out creating value for society and the environment.

Real estate development processes in the private sphere are traditionally linked to a concept of economic value creation [3], which, within the economic context, is divided into use value, which is the amount of satisfaction or pleasure that is obtainable from the possession of an asset, and exchange value, which instead represents the power of an asset in terms of exchange with other assets [4]. In this perspective, use value indicates the "goodness" of a good relative to its use, while exchange value represents the "goodness" of a good in being exchanged for something else [5]. In private real estate development processes, the goal is to create direct goods capable of generating use value for the satisfaction of the needs of the private investor or third parties, future users of the realized spaces,

and capital goods, i.e., capital, generated by maximizing the profit of the tangible asset. In this context, the entire process tends to be primarily driven by a focus on economic and profit issues.

However, within the current context of climate change, green transition, and zero CO_2 emissions, even private investments cannot be limited to these interests, and in light of the sustainable demands emphasized and reported in the 2030 Agenda [6], the Green Deal [7], these should be also expanded by embracing the interests of society and the environment to achieve urban sustainability goals. In this sense, there is a situation in which the private investor should be invested with a greater responsibility toward the creation of use value linked not only to the satisfaction of their own needs but also those of society and the environment in which the latter is embedded. This increase in responsibility could be repaid by positive economic implications for the investor, for example, by increasing the market value of the artefact [3,8]; however, this may not be sufficient to persuade the investor to pursue sustainable transformations. As [9] reports, instruments such as grants, subsidies, and tax breaks can be used to stimulate private sector involvement in the implementation of urban development projects, as they can reduce investment risks and accelerate the return on investment [9]. However, in addition to these instruments, there are also others directed at individual property owners and/or tenants that, by facilitating certain types of interventions (e.g., energy upgrading), contribute to the achievement of sustainable development goals.

Over the past decades, many countries in the European Union have adopted and implemented incentive policies to promote interventions aimed at improving the energy efficiency of buildings [10]. In the Italian context, since 2006, the government has introduced different building tax incentives [11,12], the structure of which has seen a continuous evolution [13,14]. The incentive measures were created in response to principles and courses of action set by the government, such as today's commitment to the energy efficiency of ageing residential heritage [14,15]. So, at first observation, it appears that the driver to stimulate interventions in the building sector is purely an environmental one [16]. Indeed, such incentives seem to convey and communicate an intentional intervention and support towards only one of the dimensions of sustainability: the environmental one. However, these interventions, albeit from an environmental standpoint, could potentially lead to different indirect benefits, as well as social, cultural and economic benefits for the community. With this in mind, it seems interesting to observe the role of government incentives in creating value, understood not only in terms of environmental value but of a broader value, a "sustainable value" that also includes economic and social values.

So, the research question that this paper attempts to answer is on which value categories do the current fiscal construction incentives support in sustainable urban development?

Accordingly, the paper aims to define a theoretical evaluation framework through which to assess the "sustainable value" creation potential of building incentives. The research applied the evaluation framework to a case study, the current building incentives promoted by the Italian government in the private context, looking at the eligible interventions provided by each to highlight what kind of value creation they plan to support and on what terms they support the development of a sustainable urban environment. In this sense, the contribution could be useful in identifying missing points on which to reflect and possibly intervene by modifying and/or implementing incentivized actions or carefully constructing new incentives in favour of the development of all values to promote sustainable cities.

The paper is organized as follows. Section 2 presents the three-stage structured research design and Section 3 defines the theoretical background related to value creation in the urban and architectural contexts. Section 4 describes the different incentives at the Italian level and Section 5 presents the results of the analysis, outlining whether and what incentives convey the creation of the different values. Finally, Section 6 discusses the results and Section 7 summarizes the conclusions.

2. Research Design

The research design consists of three phases (Figure 1): (i) designing the theoretical evaluation framework; (ii) analysing the existing building incentives in the Italian context, as a reference case study; and (iii) applying the theoretical evaluation framework to the case study to detect the potential value created by private building interventions through public concessions, for private citizens, society, and the environment.

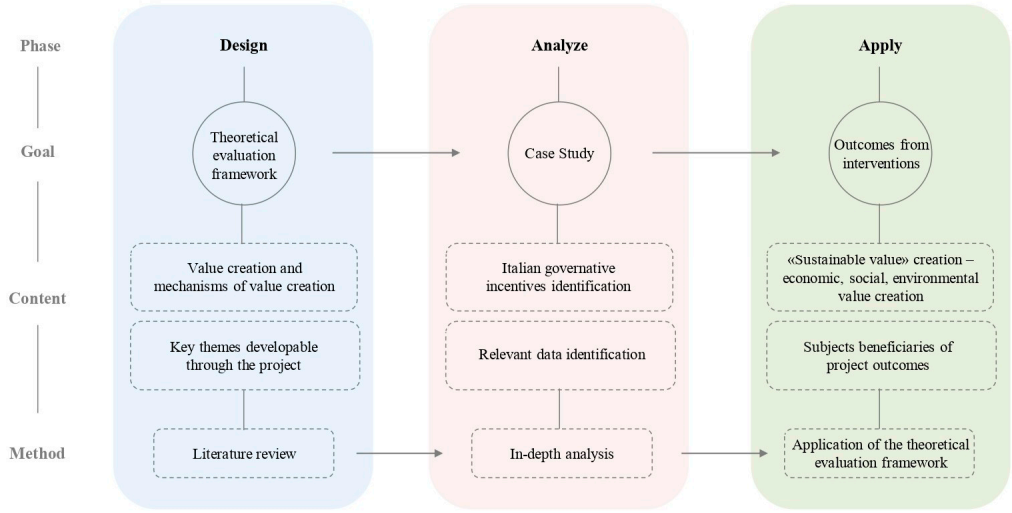

Figure 1. Research design.

2.1. Phase I: Design

In this first phase, the research involved the definition of the theoretical evaluation framework for the analysis. To this end, an exploratory investigation of the concepts and references underlying the study was conducted. First, the concept of value creation and the mechanisms of value creation were outlined on the basis of the scientific literature related to the urban and architectural context. Secondly, the observed specific focus of value creation in this research was defined as the promotion of sustainable development and, more specifically, the creation of "sustainable value" through building incentives. Third, through a review of the literature in the architectural context, key themes in favour of the development of the latter were outlined.

2.2. Phase II: Analyse

The second phase of the research considered the Italian building incentives as a case study for the application of the theoretical evaluation framework to highlight the opportunities granted by building incentives. In this sense, it involved the collection and analysis of documents related to building incentives in the Italian context and the in-depth analysis of the contents for each incentive in terms of economic benefit for the private citizen who takes advantage of it; facilitated interventions, thus the "outputs" of the spatial, architectural, and/or technical project that are expected as a result of the intervention; type of benefited property, i.e., based on the properties that can be used to take advantage of the incentive; and beneficiary subjects, who can apply for and take advantage of the bonus.

2.3. Phase III: Apply

The third phase of the research involved the application of the theoretical evaluation framework to detect the potential "sustainable value" added by each incentive, i.e., in terms of economic, social, and environmental outcomes as a result of the implementation of the given interventions. In this sense, each bonus concerning the facilitated interventions (project outputs) was investigated to observe what outcomes, i.e., "added" value outcomes, could be generated. More specifically, for each bonus, whether and what values—economic, social, and environmental—it could potentially create, and which subjects can benefit them

was determined. With respect to the latter, we observed whether private interventions can generate values/benefits that are not only limited to the interest of the private entity or if these include collective benefits to society and the environment.

3. Theoretical Evaluation Framework

The concept of value creation was used to describe how plans, programs, or projects create more value than they consume [17]. Indeed, the value creation mechanism considers that developing a change in A results in a disproportionate change in B [17]. This means that the change generates the creation of more value than is expended. This mechanism can be observed in the context of the production process, where the value of an object, artefact, or service is given by the value of the resources required for its creation and the value added [18].

As Ref. [19] reported, the value creation process can be conceptualized in three ways: (i) the first source of value creation can be represented by an individual who develops a product, service, or task, which is perceived to be of value to another individual. The latter is shown to be willing to exchange a higher monetary amount than an alternative source producing the same good. (ii) The second source of value creation is an organization that develops new methods, structures, or technologies to develop products, raw materials, or services. (iii) The third source of value creation is society creating programs or incentives for innovation for the benefit of society. It is important to consider that value creation is presented as a useful mechanism if it creates added value and if the latter constitutes a positive and valuable change for some subject [17]. Each subject has different goals and preferences, so their vision can greatly influence how a value is perceived and evaluated [20].

In the urban and architectural context, the field of value creation appears to be new and the available literature is not as extensive [21,22]; however, the process of value creation is increasingly presented as an important element in design [18,22]. In the construction sector, value creation involves collaboration among multiple stakeholders, such as manufacturers and customers, to develop profound positive changes [18]. The value created can have different forms of value, i.e., economic, social, cultural, spiritual, environmental, and so on [17], and thus in this sense, even private real estate action can generate different types of added value in addition to purely economic value. Ref. [17] notes that, within a program, there can be different mechanisms of value creation, and the trigger for these mechanisms are financial levers. By these, we mean the investment of a certain amount of borrowed money to create a profit greater than the interest on the loan itself [17]. These levers represent a useful concept for making a program or project implement several actions to multiply the initial investment value. Indeed, value is created when the benefits succeed in outweighing the costs [23]. In today's context, the added value should be conceived as "sustainable value" [23] and thus value that simultaneously considers economic, environmental, and social aspects. In this sense, the outcome of the value creation mechanism can be expressed according to all three dimensions of sustainability [24]—economic, environmental, and social. In the private construction context, it was observed that sustainable added value can indeed be given by the effectiveness and efficiency of actions taken concerning environmental and social impacts [23].

In this context, public building incentives could provide leverage to encourage private actors to invest in improving their properties to achieve potential collective added value for society and the environment in general. Building incentives are part of the policies adopted in recent decades by many European Union (EU) countries, including Italy, which have the specific goal of improving the existing housing stock [10,11]. In the context of the Green Deal [7], in which Europe sets important goals related to lowering greenhouse gas emissions and achieving climate neutrality, the European Commission introduced the "Renovation Wave" [10] initiative aimed at investing and financing public and private building renovations. The overall goal is to improve the quality of life of people using the housing stock, to reduce energy consumption by increasing the performance of building envelopes and heating systems, and to encourage more jobs in the construction sector. As

a result of this initiative, the EU Member States sent their integrated energy and climate plans to the European Commission, which indicate the measures to achieve the European targets [25]. According to the study developed by the JRC [26] regarding the main public instruments supporting the energy refurbishment of residential buildings, it was observed that grants and subsidies are an instrument used in all Member States. Loans and soft loans, on the other hand, are available for more than half of the EU countries, i.e., Austria, Belgium, Bulgaria, Czech Republic, Estonia, France, Germany, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Portugal, Romania, Slovakia, Slovenia, Spain, and the United Kingdom. Finally, tax incentives, which are the subject of analysis in this paper, often offered in the form of income tax incentives or VAT reductions, are active in Belgium, Denmark, Finland, France, Italy, Malta, Sweden, the Netherlands, and the United Kingdom. In line with these initiatives, we observed that the Italian government is introducing different tax-building incentives to response to the government's courses of action toward the efficient upgrading of Italy's ageing residential real estate stock [8]. In this sense, this makes a series of incentive tools available to private individuals to carry out renovation (and other) interventions on their residential properties. The purpose of the government in taking an interest in heritage not owned by itself is based on three aspects [11]: to incentivize the building sector, which is the driving force of the economy; to limit the tax evasion that characterizes this sector; and to raise public awareness of energy and environmental issues.

Moving back to the general European context, we observed that the Renovation Wave initiative can also contribute to the European "Just Transition" mechanism, with a focus on adapting social housing and improving air quality, water management and disaster and pollutant protection [27]. Moreover, the "New European Bauhaus" initiative, launched as part of the Renovation Wave [27], aims to reinvent the places where we live in a beautiful, sustainable, and inclusive way [28]. These interconnections between policies and initiatives show an initial broadening of the vision of incentives, not only in environmental and economic terms, although these remain fundamental and preponderant, but also in social ones. Currently, the assessment of the value created by building incentives in these terms appears to be little explored, while more attention has been given to the observation of the benefits of building incentives in specific environmental terms (energy efficiency and consequent emission reduction) and in terms of economic and financial benefits for investors [29–32]. In this context, the definition of a theoretical evaluation framework that supports the measurement of the value creation potential of incentives on all dimensions of sustainability appears to be potentially useful. This is a necessary precondition that allows for more operational steps in the quantitative detection of the latter. However, assessing the impact of a policy is not a simple problem [31], so a literature review was conducted to identify the key themes that characterize a green and sustainable building. From these, we found that the related benefits hinged within the three dimensions of sustainable development. In addition to the economic, social, and environmental dimensions, one could potentially consider the cultural one, given the relevance of culture in the architectural and urban context; however, in this specific document we decided not to consider it as such since culture is a variable element from context to context and from society to society and is often integrated into aspects of the social dimension [33]. Moreover, as the United Nations (UN) reports, the three pillars on which the concept of sustainability and sustainable development is based are the three that were previously mentioned [6,24]. To support the literature search, the Scopus database was used and 76 articles, published in the last ten (2013–2023) years, were collected. The keywords used to search the titles, abstracts, and keywords were sustainable building, green building, and principle. To ensure the scientific quality of the contributions obtained through this research, it was decided to consider only "papers," while conference papers, editorials, and reissues were excluded from the sample. Moreover, only documents from the subject areas of engineering, energy, environmental science, social sciences, economics, econometrics and finance, and arts and humanities were considered.

An initial screening of the papers based on reading the abstracts resulted in the selection of 43 articles. These were then screened and only those that reported specific information on the principles, aspects, criteria, or key issues that characterize sustainable and green buildings were considered. Based on this selection, the list of papers was reduced to 10 articles.

In the literature, the term "green building" identifies buildings with a reduced environmental impact; however, it is often used synonymously with "sustainable building," which connotes a building that is capable of being sustained as it permanently limits resource depletion or damage [34]. Moreover, it is reported that sustainable or green buildings are capable of generating various benefits on all three dimensions of sustainability—environmental, economic, and social [35–39]. Indeed, the intent of sustainable and/or high-performance building is to [34,35,37,39] mitigate impacts on the environment by decreasing consumption, improving efficiency, and promoting biodiversity and the use of renewable resources; protect and improve the health, safety, and welfare conditions of building users; and optimize direct and indirect economic costs and returns. More specifically, starting from the revised references, Table 1 shows the theoretical evaluation framework composed of the main 9 key themes and the related 31 benefits triggered by sustainable/green buildings with respect to the three dimensions of sustainability—environmental, social and economic. It is worth noting two methodological issues: first, each selected document reports several key themes but not always using the same designation even though they refer to the same benefits/principles. So, for a coherent and clear narrative, these were summarized based on the described benefits/principles, to aggregate these with respect to certain key themes (Table 1). Second, because the work focuses on building incentives, and is thus building-specific, the Table does not report the benefits related to urban interventions, such as accessibility to public transportation and pedestrian and bicycle routes, and those of a public nature, such as the creation of gathering spaces, common places, or public services.

Table 1. Theoretical evaluation framework.

Dimension	Key Theme	Benefit	Reference(s)
Environmental	Environment Protection	Reduce carbon emissions	[35,36,39,40]
		Improve carbon sequestration	[39,40]
		Reduce the heat island effect	[40]
		Minimize pollution emissions	[40,41]
		Enhancing biodiversity	[40,41]
		Reduce greenhouse emissions	[35,36,39]
		Extend building life (durability and adaptability)	[39]
	Energy Efficiency	Reduce energy consumption	[35,37,39,41,42]
		Improve building insulation (floors, walls, ceilings, and windows)	[37]
		Improve bioclimatic properties (shading through curtains, plants, porches; natural lighting; natural ventilation)	[34,37,42]
		Improve lighting controllability	[39,42]
	Land Use	Limit the use of undeveloped land	[40,43]
		Rational use of old buildings	[39]
		Increase of green area	[39]
	Resource Protection	Improve the use of renewable energy (solar panels, photovoltaics, small-scale wind turbines, geothermal heat pumps, etc.)	[35,37,40]
		Improve the use of renewable materials	[35,39,40]
		Minimize and manage waste	[35–37,40,41]
		Minimize and manage the use of water	[35,37,39–41]
		Improve site water retention	[40]

Table 1. *Cont.*

Dimension	Key Theme	Benefit	Reference(s)
Economic	Profit	Market value (increased exchange/use/image) or social/environmental/cultural value	[34,35,39,41,43]
	Cost	Reduce initial costs	[34,36,41]
		Reduce operational costs (lower annual energy and water cost, lower maintenance costs, etc.)	[35–37,39]
Social	Safety	Building security (fire protection, seismic performance, structural safety level, etc.)	[35,40,41,43]
		Human security (surveillance, controlled access, systems for evacuation, etc.)	[34,36,40,43]
	Well-Being	Physical comfort (thermal comfort, visual comfort, acoustic comfort, etc.)	[35,36,38,39,42,43]
		Aesthetic quality	[34,39,40]
		Higher user productivity	[34,37]
		Visual privacy	[35]
		Liveable space (open space, green space, rational disposition of architecture and landscape)	[39]
	Equity and Inclusion	Barrier-free access	[34,40]
		Equal opportunities	[41,43]

4. Case Study

This section is related to the application of the theoretical evaluation framework to the related case study, and therefore it reports the details of the different incentives present in the Italian context to support private building interventions.

Specifically, the following bonuses were analysed for the research work presented here: Green Bonus, Architectural Barrier Bonus, Furniture Bonus, Sismabonus, Ecobonus, and Superbonus. The information on the six building incentives [44] are reported below according to the following scheme: economic benefit and validity over the years, facilitated interventions, facilitated buildings, and beneficiaries.

It is useful to note that the Furniture Bonus, the Sismabonus, and the Architectural Barrier Bonus both descend from Article 16 of Decree Law No. 63 of 2013, while the Ecobonus is governed by Article 14 of the same decree. As for the Superbonus, the relief is governed by Article 119 of Decree Law No. 34/2020 (Relaunch Decree). Finally, the Green Bonus was introduced by the Budget Law of 2018 (Article 1, paragraph 12 of Law No. 205 of 2017).

4.1. Green Bonus

Economic benefit and validity over the years. The incentive, active until 31 December 2024, consists of a 36% IRPEF (Personal Income Tax, in Italian "Imposta sul Reddito delle PErsone Fisiche") deduction for the implementation and landscaping of green areas. The allowance must be calculated on a maximum amount of EUR 5.000 per housing unit (i.e., EUR 1.800 per housing unit) and must be divided into ten equal annual instalments (i.e., a maximum of EUR 180/year). If the works are carried out on the common parts of a condominium, the allowance is to be attributed to the individual condominium, according to the number of building units making up the condominium (e.g., if the condominium has 10 building units, the maximum amount on which to calculate the allowance will be EUR 50.000, for a total of EUR 18.000).

Facilitated interventions. With the green bonus, the following interventions can be facilitated: (1) the landscaping of private outdoor areas, the creation of irrigation systems, and the construction of wells; and (2) the creation of roof gardens and green roofs.

Beneficiaries. The bonus is eligible for owners or holders of the buildings on which the above-mentioned interventions are carried out.

4.2. Architectural Barrier Bonus

Economic benefit and validity over the years. The incentive, active until 31 December 2025, concerns building heritage restoration work, and consists of an IRPEF deduction obtained by applying a rate of 75% on the expenses incurred up to a ceiling that can vary from EUR 30 to 50 thousand depending on the building on which the work is carried out. In particular, the ceiling is EUR 50.000 for single-family buildings or for units in multi-family buildings that are functionally independent and have independent accesses; EUR 40.000 per real estate unit (multiplied by the number of real estate units that make up the building) for condominium buildings consisting of two to eight real estate units; and EUR 30.000 per real estate unit (multiplied by the number of real estate units that make up the building) for condominiums with more than eight real estate units. The allowance will then be divided into five equal annual instalments.

Facilitated interventions. The interventions eligible for this bonus concern all those aimed at eliminating existing architectural barriers and also include interventions to automate the systems that allow them to be eliminated (this also includes the costs of disposal and reclamation of the replaced system).

The facilitated buildings are existing buildings.

Beneficiaries. The incentive is available to IRPEF subjects who sustain the renovation expenses and are (1) owners of the property; (2) holders of real/personal rights of enjoyment over the property; (3) tenants; or (4) the cohabiting family member (and/or the family member more uxorio, i.e., de facto couple) with the owner/holder of the property subject to the intervention.

4.3. Furniture Bonus

Economic benefit and validity over the years. The incentive consists of a 50% IRPEF detraction for the purchase of new furniture and major household appliances by 31 December 2024.

Facilitated interventions. The purchase of new furniture (1) or new major household appliances (2). The latter, depending on the type, have to meet a pre-established minimum energy class (e.g., ovens must be no lower than class A, washing machines must be no lower than class E, etc.). In addition to the expenses for the purchase of (1) and (2), the expenses for the transport and assembly of the goods purchased are also eligible.

Facilitated buildings. The furniture bonus is only triggered if building renovation work has been carried out on the building.

Beneficiaries. The bonus is available to those who have carried out building renovation work since 1 January of the year preceding in which the goods were purchased. It is necessary to prove the starting date of the works by means of the administrative authorisations (concession, authorisation) or communications (communication of the start of works, prior communication to the Local Health Authority) required by the regulations; or, if the works do not require authorisations or communications to be carried out, a declaration instead of an affidavit is required.

4.4. Sismabonus

Economic benefit and validity over the years. The incentive, active until 31 December 2024, concerns anti-seismic interventions for the static safety of buildings, and consists of an IRPEF deduction obtained by applying a rate ranging from 50% to 85% of the expenses incurred up to a maximum of EUR 96.000 for each real estate unit (EUR 136.000 for simultaneous execution of anti-seismic interventions and energy requalification on common parts of condominium buildings). The allowance will then be divided into 5 equal annual instalments (10 annual instalments for the simultaneous execution of anti-seismic interventions and energy requalification on common parts of condominium buildings).

Facilitated interventions. The eligible works are those for the static safety mass of buildings (anti-seismic works), but the expenses incurred for the seismic classification and verification of buildings also fall within the eligible expenses. In addition to anti-seismic works, the deduction may also be applied to the expenses for works inevitably connected to the former, such as painting, plastering, resurfacing, etc. For the calculation of the allowance, the rate applicable to the expenses incurred may vary between 50% and 85% depending on (1) the type of building on which the work is carried out (individual building units or condominiums); (2) the ability of the work to improve the risk class of the building on which it is carried out (1 or 2 classes reduction compared with the building's risk class before the work); or (3) whether energy upgrading work is carried out at the same time as the earthquake-proofing work.

Facilitated buildings. Existing buildings that are used both for residential purposes and for productive activities (agricultural, professional, production of goods and services, commercial or non-commercial activities), as long as they are located in high- and medium-hazard seismic zones (zones 1, 2, 3) as defined by Prime Ministerial Order no. 3274 of 20 March 2003.

Beneficiaries. The incentive is available to persons liable to IRPEF or IRES, as long as the real estate is owned by them (or held on the basis of a suitable title) and the expenses for carrying out the interventions are borne by the applicant.

4.5. Ecobonus

Economic benefit and validity over the years. The incentive, active until 31 December 2024, concerns interventions aimed at increasing the energy efficiency level of buildings and consists of an IRPEF or IRES (Corporate Income Tax) deduction calculated at different rates ranging from 50% to 85% depending on the type of intervention. The deduction will then be divided into 10 equal annual instalments.

Facilitated interventions. The interventions eligible for this bonus are those aimed at improving the energy efficiency of a building and/or a real estate unit; therefore, they may concern both works carried out on the opaque envelope (walls, roofs, floors) and on the transparent envelope (windows and fixtures), but also on the elements (e.g., solar screens) and technological systems that affect the energy consumption for heating and the supply of domestic hot water for buildings and real estate units (e.g., winter air conditioning systems, heat generators, multimedia devices for the remote control of heating systems, etc.).

The rates applicable to calculate the relief vary according to the nature of the intervention and the type of building on which they are carried out (condominium buildings/individual units). Finally, each intervention is subject to an expenditure ceiling beyond which the expenses will not be facilitated (e.g., if for a given intervention the maximum ceiling is EUR 50.000 and the applicable rate is 50% but EUR 60.000 has been spent, the facilitation will be calculated only on the EUR 50.000 and the excess EUR 10.000 will not be facilitated in any way).

Facilitated buildings. A necessary condition to benefit from the relief is that the interventions are carried out on real estate units and/or existing buildings of any cadastral category, that are registered or for which registration has been requested.

Beneficiaries. All taxpayers, residents and/or non-residents, are eligible for the bonus, provided they own the property subject to the intervention or hold a right in rem over it (e.g., condominium owners, tenants, borrowers). In addition to these, holders of business income who use the property subject to intervention for instrumental purposes may also benefit from the bonus.

4.6. Superbonus

Economic benefit and validity over the years. The incentive, active until 31 December 2025, concerns interventions aimed at energy efficiency, static consolidation, and/or reduction of the seismic risk of buildings. The IRPEF deduction applicable to the expenses incurred varies according to the year in which the expenses are incurred (110% for expenses incurred

in 2023; 70% for those incurred in 2024; and 65% for those incurred in 2025) and is divided into four equal annual instalments.

Facilitated interventions. The interventions eligible for this bonus concern (1) static safety interventions (earthquake-proof interventions) and (2) interventions for the energy efficiency of buildings concerning their envelope and their winter air-conditioning systems.

The facilitated buildings are existing buildings.

Beneficiaries. The incentive is available to condominiums and individuals for work on buildings consisting of two to four building units, owned by a single owner or co-owned by several individuals as long as they are separately stacked. In addition to these entities, the relief is also available to individuals owning individual real estate units within the same condominium or building; autonomous social housing institutes or other entities that meet the requirements of European legislation on "house providing"; indivisible housing cooperatives on real estate owned by them and assigned to members; non-profit, voluntary, and social promotion associations; and amateur sports clubs and/or associations with regard to real estate (or part thereof) used as changing rooms.

5. Results

In this section, each Italian building incentive is analysed through the theoretical evaluation framework, reporting the potential "sustainable values" created that can be generated by the subsidized interventions for each of them.

5.1. Green Bonus

Economic value created. The implementation of a green roof or hanging gardens results in an increase in property value, as the inclusion of these can lead to [34] an increase in the use value of the property, given by the satisfaction and motivation related to the use of such spaces; an increase in image value, as green roofs and roof gardens can make a building more aesthetically pleasing; and an increase in environmental value, as increased energy performance and improved air quality are aspects that affect the quality of the property by returning a higher market value than traditional buildings due to an increase in their exchange value. In addition, the reduction of heat loss to and from the outside [45,46] allows the energy costs for heating and air conditioning to be contained and consequently decreases the operating costs of the building, thus resulting in reductions in utility bills. Similarly, the subsidized intervention related to the construction of wells makes it possible to offset domestic water needs, limiting the costs of water use for irrigation and watering activities. Finally, a green roof grants functional advantages related to the protection of the attic, sheathing, and insulation [45], resulting in an extension of durability and thus a reduction in maintenance costs due to replacements.

Environmental value created. Green roofs help to increase rainwater retention and thus enhance the absorption capacity, limiting the load on the stormwater drainage network. In this sense, they allow water use to be decreased and managed efficiently [45–47]. Green roofs also limit the increase in temperature caused by the extension of mineralized surfaces, therefore helping to limit the urban heat island effect [46,47]. In addition to these benefits, there is the contribution to biodiversity conservation and that of pollutant absorption capacity by promoting better air quality [46,48].

In addition to the benefits listed for green roofs or hanging gardens, the encouragement toward the creation of gardens makes it possible to decrease soil sealing. The latter is one of the Targets of the Sustainable Development Goal 11 (SDG11) framework of the 2030 Agenda, namely Target 11.3 aimed at reducing land consumption for inclusive and sustainable urbanization [6,49–51]. In addition, the construction of wells results in less water wastage as it makes the citizen owners partly autonomous from state water resources, thus limiting their consumption. This action is in line with what is reported in the 2030 Agenda with respect to SDG6, which is related to sustainable water management, where Target 6.4 aims to "substantially increase the efficiency of water use in all sectors and ensure

sustainable withdrawals and supplies of freshwater to address water scarcity" [51]. Wells can indeed limit water stress and increase water use efficiency.

Social value created. From a social perspective, the creation of open and green spaces where people can spend moments of relaxation contributes to the psychological and physical well-being of the users [52]. This aspect becomes more relevant and valuable for sustainable settlements in light of the recent pandemic crisis from COVID-19, where isolation has made clear the importance of liveable and healthy human settlements [53]. In addition, facilitating the inclusion of trees or green barriers along outbuildings or fences encourages the creation of shaded areas both inward, thus in favour of space owners, and towards sidewalks in favour of passersby. In parallel, such green elements help maintain interior privacy and screen views and traffic noise if the building is located near road lines [54]. Such urban vegetation can enhance city and district characteristics, and thus promoting a green landscape [55].

5.2. Architectural Barrier Bonus

Social value created. Interventions to include elements, such as freight elevators, external lifts, and ramps, to promote the internal and external mobility of people with disabilities promote two key themes in the operationalization of social sustainability, namely inclusion and social equity [56,57]. Indeed, such actions grant fair and equal accessibility to all spaces for all.

Economic value created. The removal of existing architectural barriers on a given property increases the number of potential buyers as it also makes it attractive to all those with mobility difficulties. It is therefore plausible that this also leads to an increase in its market value.

5.3. Furniture Bonus

Economic value created. Today's global events have led to an increase in the cost of energy and a limited availability of energy resources, so facilitation with respect to the purchase and subsequent use of more efficient appliances allows for a reduction in individual and national energy expenditures. Indeed, lower energy consumption leads to benefits on the bills of individual private citizens who use such technologies, and in parallel, this leads to a reduction in the national energy bill [58].

Environmental value created. Taking into consideration the goals of the Green Deal, it is noted that the European Commission sets the goal of climate neutrality to be achieved by 2050 [7]. In this context, incentivizing the use of more energy-efficient appliances can decrease consumption and consequently limit greenhouse gas emissions that contribute to global warming [58].

Social value created. Facilitating the purchase of new furniture and more efficient appliances can contribute to a greater sense of social equity, understood as equity of opportunity to benefit from more efficient goods and to greater well-being. Indeed, social equity constitutes one of the fundamental issues of social sustainability, which is necessary for the physical and psychological survival of individuals [56,57]. In addition, the provision of new furniture can potentially also promote better interior aesthetic quality of spaces, thus increasing user well-being.

5.4. Sismabonus

Economic value created. Structural interventions that allow for a decrease in the seismic vulnerability of the building and therefore an improvement of the building with respect to the seismic risk class leads to an increase in the use and exchange value of the property and a consequent higher market value.

Social value created. Improving the seismic vulnerability of the building promotes the users' sense of safety, which is one of the key issues of social sustainability. Since earthquake-proofing should be a guaranteed right for all, and as physical safety conditions

should be equal, promoting such interventions for vulnerable buildings creates another important value for social sustainability, namely social equity [56,57,59].

5.5. Ecobonus

Economic value created. As with the Furniture Bonus, the replacement of winter air conditioning systems with high-efficiency boilers encourages a reduction in consumption, leading to reductions in the property's operating costs and thus a reduction in energy bills. In addition, facilitation of the purchase and insertion of solar shading and more efficient windows and doors can reduce summer solar radiation and limit dispersion in winter periods, resulting in reduced consumption of energy for cooling and heating [37]. Moreover, comprehensive upgrading of the building and equipping it with energy-efficient technologies and installations and automation systems lead to an increase in the market value of the property, as they result in an increase in use, exchange, and environmental value. In addition, the use of Class A systems and solar collectors promotes the reduction in operating costs for heating and hot water [35,37].

Environmental value created. From an environmental point of view, the redevelopment of existing buildings represents an action in line with the principles of the Circular Economy in favour of reducing waste production, gas emissions, and urban resource management [60]. Indeed, the redevelopment and reuse of existing buildings presents itself as a viable and sustainable alternative to the demolition and construction of new buildings by promoting lower consumption of energy and raw materials; a reduction in soil sealing; and the preservation of parts of the urban landscape [61,62]. In parallel, the provision of thermal insulation and high-efficiency boilers promote the reduction in greenhouse gas emissions, which contribute to global warming [58]. In addition, solar collectors enable the production of clean, renewable energy without CO_2 emissions [35,37]. This action is in line with Targets 7.1 and 7.2 of SDG7 of the 2030 Agenda, in which we aim to ensure universal access to affordable, reliable, and modern energy services by 2030 (7.1) and to substantially increase the share of renewable energy in the global energy mix (7.2) [49]. Moreover, incentivizing the use of energy-efficient boilers can decrease greenhouse gas emissions that contribute to global warming [58].

Social value created. From a social point of view, equipping the building with high-performance shading and fixtures can increase the well-being and indoor comfort of users in two ways: first, they can promote better visual comfort, which can be achieved through balanced lighting without glare or direct radiation and with an ability to control the amount of light as needed [35,42,54,55] and second, fixtures with better soundproofing performance can increase acoustic comfort, thus limiting the levels of noise disturbance and pollution [35,39,59]. Thermal insulation interventions and the replacement of systems with more efficient ones can improve the quality of the indoor environment, reflecting greater indoor thermal comfort for the benefit of users [37,54,55,59]. In addition, the provision of building automation systems contributes to the users' well-being in terms of comfort and safety. Indeed, such systems make it possible to regulate the temperature of rooms before the arrival of occupants, generating perfect climates in winter and summer; encourage the maximization of the use of natural light and the management of artificial lighting; and increase users' sense of security through home automation alarm systems in case of theft, gas leaks, or water losses.

5.6. SuperBonus

Regarding SuperBonus, it is possible to observe that the "leading" and "driving" interventions are similar to those provided and facilitated by the Ecobonus and the Architectural Barriers Bonus, respectively. For this reason, the values created by this incentive are the same as those stated above for the Ecobonus and the Architectural Barriers Bonus.

Table 2 summarizes the potential value created in the three dimensions of sustainability for each incentive analysed. Specifically, Table 2 shows the benefits generated by each

incentive on the basis of those identified in the theoretical evaluation framework (Table 1), and indicates the beneficiaries.

Table 2. Sustainable value created by Italian building incentives.

Green Bonus	Economic value created	Market value increase	■
		Operational cost reduction	■
	Environmental value created	Improve carbon sequestration	□
		Reduce heat island effect	□
		Minimize pollution emissions	□
		Enhance biodiversity	□
		Extend building life (durability and adaptability)	□
		Reduce energy consumption	□
		Increase green area	□
		Minimize and manage the use of water	□
		Improve site water retention	□
	Social value created	Visual privacy	■
		Liveable space	■
Architectural Barrier Bonus	Economic value created	Market value increase	■
	Social value created	Barrier-free access	□
		Equal opportunities	□
Furniture Bonus	Economic value created	Operational cost reduction	■
	Environmental value created	Reduce energy consumption	□
		Reduce greenhouse emissions	□
	Social value created	Aesthetic quality	■
		Equal opportunities	□
Sismabonus	Economic value created	Market value increase	■
	Social value created	Building security	■
		Equal opportunities	□
Ecobonus	Economic value created	Market value increase	■
		Operational cost reduction	■
	Environmental value created	Reduce energy consumption	□
		Reduce greenhouse emissions	□
		Reduce carbon emissions	□
		Improve building insulation	□
		Improve the use of renewable energy	□
		Minimize and manage waste	□
	Social value created	Physical comfort	■
		Human security	■
		Equal opportunities	□

Table 2. *Cont.*

Superbonus	Economic value created	Market value increase	■
		Operational cost reduction	■
	Environmental value created	Reduce carbon emissions	□
		Reduce energy consumption	□
		Reduce greenhouse emissions	□
		Improve building insulation	□
		Improve the use of renewable energy	□
		Minimize and manage waste	□
	Social value created	Physical comfort	■
		Human security	■
		Building security	■
		Equal opportunities	□
		Barrier-free access	□

Legend: ■ single benefit for the investor(s); □ collective benefit for society and/or the environment.

6. Discussion

In this section, the results of the research are discussed, highlighting the usefulness of the theoretical evaluation framework.

The application of this framework allowed the potential of fiscal building incentive instruments to emerge, not only in economic and energy efficiency terms for the private investor but also in terms of creating a broader "sustainable value." Indeed, it is noted that all Italian government building incentives more or less demonstrate the potential to create added value in the three dimensions of sustainability. Only two of them, the Architectural Barrier Bonus and the Sismabonus, seem to be more focused only on the creation of economic and social added value. Furthermore, it can be seen that different incentives have the ability to create the same type of value, but they do so with different design strategies or technologies: there is no unequivocal way to create a certain type of value, but each action can contribute to certain outcomes (e.g., increasing market value or reducing energy consumption) with different project outputs (e.g., green roofs, solar collectors, class A home devices, etc.). In parallel to this, the framework allows us to reflect on the type of beneficiary of each incentivized action, not limiting the observation of the benefits to private investors. This reasoning is potentially useful from the perspective of encouraging a culture of change in society in support of sustainable urban development. Indeed, in the urban and architectural context, the intervention of private actors is relevant and fundamental for the green transition and the development of a sustainable urban environment. Therefore, the precise information of the collective benefits that individual actions can generate can potentially encourage the responsibilization of citizens towards a vision that goes beyond mere personal profit, which certainly remains the triggering and unavoidable element, to meet the benefits of society and the environment which are understood as "macro" subjects that need attention and care. In this sense, the application of the evaluation framework makes it possible to highlight that many of the interventions that can be realized through building incentives guarantee the development of various benefits—economic, social, and environmental—and, more specifically, allow for the development of benefits not only for the advantage of the investor(s), but also of "macro" subjects. One example is that many of the bonuses—the Architectural Barrier Bonus, Forniture Bonus, Sismabonus, and Superbonus—can potentially support the development of a social benefit in terms of equity of opportunity and/or a sense of security, which are significant aspects to be explored and fortified to work towards social sustainability. Similarly, the evaluative framework allows us to observe that incentives not only produce a benefit on energy efficiency and

consumption reduction, which are the main objectives of these incentive policies, but also allow for other unexpected environmental benefits at the definition stage, such as a reduction in the greenhouse effect, an enhancement of biodiversity, and a reduction in waste production. In this sense, the evaluation framework can support the reflections of public administrations, either in terms of extending the time frame for granting certain incentives, or in terms of modifying and improving them. By this, we mean increasing the interventions facilitating specific incentives or constructing new incentives on the basis of key themes that can be developed through specific project interventions or technological elements. The reading of the results of the application to the Italian case indeed highlights a partial focus on social and environmental values, which could be further enhanced by explicitly encouraging actions in favour of a sense of security, well-being, inclusion, and protection of resources and the environment.

7. Conclusions

On which value categories do current fiscal construction incentives support sustainable urban development?

The paper responds to this research question by defining a theoretical evaluation framework that can be used for analysing the incentive policies in detail, which can be considered as financial incentives aimed at triggering a value creation mechanism, understood as a "sustainable" value. This framework is composed of nine key themes, collected based on the literature, four for the environmental dimension, two for the economic dimension, and three for the social dimension, which can be further detailed with specific benefits that can be realized through design intervention in the architectural and urban contexts. Moreover, the research provides an application of this theoretical evaluation framework to the Italian case, analysing the building incentives promoted by the Italian government in the private sector context. The research therefore determined the opportunities offered by the various building incentives currently in effect according to the timetable of work execution—the Green Bonus, Architectural Barriers, Furniture Bonus, Sismabonus, Ecobonus, Superbonus—in terms of economic benefit gained by the public, interventions and subsidized buildings, and beneficiaries.

Through the theoretical evaluation framework, the research observed that almost all building incentives in Italy are capable of creating added value in all three dimensions of sustainability. Each of them demonstrates this capacity through different project outputs and with different consequent outcomes inherent to the different key issues. Furthermore, the research highlighted the importance of the action of private actors for sustainable development, emphasizing and highlighting the fact that private transformations can create added value, and thus benefits for both the investor(s) and the macro subjects (environment and society).

The case study demonstrated the applicability of the framework and its threefold usefulness: firstly, it helps in detecting the value-creation potential of incentive policies in order to assess the possible extension of the incentive timeframe to achieve greater benefits. Secondly, it highlighted possible shortcomings of incentives by encouraging the modification of existing incentive interventions or the construction of new incentives in a reasoned manner with respect to the key issues reported in the literature. Indeed, the cross-reading between different incentives through the evaluation framework, but especially the cross-reading between incentives promoted by different countries, can inspire the construction and proposal of incentives able to generate benefits on several sides. Thirdly, its application states the contributions of the different incentives simply and punctually, thus showing itself as a useful tool for the construction of clear and shareable information with the community to encourage a culture of change in support of sustainable urban development. However, we recognize one potential limitation of this work, namely the restricted nature of the sample on which the key themes and consequent reflections are delineated. Indeed, the latter is defined on the basis of specific predefined filtering criteria. In this sense, the key themes could be expandable, along with discussions with experts in

the field, and consequently, the research cannot be intended as strictly exhaustive; however, it constitutes a structured and justified starting point for cross-reading.

Finally, it is worth stressing that the contribution of this framework is conceived on a theoretical level and not on an empirical one to observe the potential of building incentives in terms of creating "sustainable value." Therefore, a potential direction for future research could lie in applying the framework to real cases of incentive implementation in order to compare the potential of each incentive with real data and observe possible deviations.

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