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Redefining Spatial Justice**

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# *Tracks*

**TRACK 1: PLACES**

**TRACK 2: CULTURE**

**TRACK 3: LAW**

**TRACK 4: HOUSING**

**TRACK 5: GOVERNANCE**

**TRACK 6: METHODS**

**TRACK 7: MOBILITIES**

**TRACK 8: URBAN DESIGN**

**TRACK 9: SPATIALITIES**

**TRACK 10: EDUCATION**

**TRACK 11: RESOURCES**

**TRACK 12: ECOLOGIES**

**TRACK 13: POLITICS**

**TRACK 14: THEORY**

**TRACK 15: ACTIVISM**

# Table of contents

PAGE  
NO.

ABSTRACT INFO

**09** AN ECOSYSTEM SERVICES BASED MODEL FOR THE RECLASSIFICATION OF URBAN USES IN PLANS. A DECISION SUPPORT FOR THE MINIMISATION OF SOIL CONSUMPTION

Valentina Adinolfi, Francesca Coppola, Michele Grimaldi, Isidoro Fasolino

**20** TRANSLATING THE SOCIAL EXCLUSION OF VULNERABLE GROUPS INTO SPACE: AN ALTERNATIVE REVIEW THROUGH PRINT AND SOCIAL MEDIA

Basak Akarsu, Cansu Ozmen, Imge Akcakaya Waite

**34** HOW DO WE PAVE A RIGHT? – THINKING RIGHT TO MOBILITY FROM WOMEN’S DISPLACEMENTS IN RIO DE JANEIRO

Mariana Albuquerque

**44** HEAP DEVELOPMENT IN THE RUHR METROPOLIS. THE ‘MOUNTAINS OF THE RUHR’ AS PLACES OF IDENTITY

Anne Budinger, Hanna C. Schmitt, Maria Ze, Olivia Karulska, Tino Wenning

**51** THE MARINE PROTECTED AREA CONTRACT AS A COLLABORATIVE GOVERNANCE TOOL: THE LAZIO REGION CASE STUDY

Romina D’Ascanio, Serena Muccitelli, Carolina Pozzi, Anna Laura Palazzo

**58** E-PARTICIPATION IN SLUM UPGRADING FACILITATING THE ESTABLISHMENT OF A LOCALLY ROOTED LIVEABLE LIFE INDEX TO GUIDE SLUM UPGRADINGB.

Berrit Neele Eicker

**65** PLANNING URBAN SOCIAL SPACES AND THEIR INTERRELATIONS: THE CASE OF JERUSALEM

Efrat Eizenberg and Yosef Jabareen

**76** STUDY ON THE CAPACITY OF NINE CITIES IN THE GREATER BAY AREA TO COPE WITH CLIMATE CHANGE BASED ON THE RISK CITY THEORY

Xuan Ge, Shifu Zhang, Azhao Zhang

**91** PUBLIC SPACE: A NEVER-ENDING PROJECT ACTOR-NETWORK OF PUBLIC SPACE PRODUCTION AN APPROACH TO A DEMOCRATIC, PARTICIPATORY URBAN TOOL

Rana Habibi, Lieve De Cock

**98** PLANNING TO MEET CHALLENGES IN SHRINKING RURAL REGIONS. TOWARDS INNOVATIVE APPROACHES TO LOCAL PLANNING

Aksel Hagen, Ulla Higdem, Kjell Overvåg

**120** VISUALIZATION ANALYSIS OF FUTURE CITY RESEARCH BASED ON CITESPACE

Jing Han

**130** DWELLING DECAY: HOUSING CRISIS, URBAN INSTITUTIONALISM, AND ITS UNDERSTANDING OF THE QUALITATIVE SHORTAGE PAST, PRESENT, AND FUTURE OF CHILE'S URBAN HOUSING POLICY FOR THE IMPROVEMENT OF QUALITY AND SOCIAL INTEGRATION (2006 - 2021)

Karen Saavedra Hernández

**142** READING NEW URBAN PRACTICE IN SYRIAN NEIGHBOURHOODS IN ANKARA THROUGH FORCED MIGRATION

Damla Isiklilar

**155** GREEN SPACE AVAILABILITY AND ONSET RISK OF COVID-19 IN HONG KONG: A SPATIAL JUSTICE PERSPECTIVE

Izzy Yi JIAN, Kin Wai Michael Siu, Terry Yepeng YAO

**163** IMPORTANCE OF RECLAMATION OF POSTINDUSTRIAL AREAS NEAR CITIES, CHALLENGES TO OVERCOME AND HOW IT CHANGES CITY INTO SMART CITIES

Jobin Josh

**169** A COMPARATIVE ANALYSIS ANALYSIS OF URBAN TEMPERATURE(AIR/SURFACE) AND HEAT ISLAND INTENSITY USING S-DOT AND LANDSAT8 IN SEOUL OF SOUTH KOREA

Lee, Jae-Jun, Kim, Dae-Hye, Bae Woong-Kyoo

**181** TOWARDS A TOPOLOGY OF PLANNING THEORIES – RE-ORGANISING PLANNING KNOWLEDGE IN THE 21ST CENTURY

Meike Levin-Keitel, Lukas Behrend

**191** ROOM FOR UNCERTAINTY IN INFRASTRUCTURE PLANNING HOW CONTINUOUS CERTAINIFICATION BY DECISION MAKERS RESULTS IN MORE UNCERTAINTY

Klaas Veenma, Wim Leendertse, en Jos Arts

**199** REDEVELOPMENT OF TRANSPORT INFRASTRUCTURE AS DRIVER FOR ACCELERATING SOCIETAL TRANSITIONS. A REGENERATIVE PERSPECTIVE ON INFRASTRUCTURE PLANNING

Wim Leendertse, Jos Arts, Tim Busscher

**209** RESEARCH ON THE SUITABILITY OF URBAN BLUE LINE DELINEATION UNDER THE TERRITORIAL SPACE PLANNING SYSTEM

LIAN Dong-xin, WANG Shi-fu, DENG Zhao-hua, MENG Meng, Lin zhi-shan

**217** ROLE OF PUBLIC SPACES BETWEEN BUILT HERITAGE AND LIVING CITY: THE CASE OF CHANGLE GATE IN ZHENGDING, CHINA

Qian Liu, Laura Pezzett

**226** ADAPTIVE GOVERNANCE FOR HEALTH AND SOCIAL EQUITY: A CASE STUDY OF HANGZHOU'S XIAOYING ALLEY

Yinglu Luo, Zhang, Yalan

**236** ANALYSIS OF URBAN SPACE VITALITY BASED ON WEIBO CHECK-IN DATA A CASE STUDY OF SUZHOU

Geng Ma, Paola Pellegrini

**249** BEYOND GLOBAL GAINS AND LOCAL PAINS - SPATIAL INEQUALITY OF HINTERLAND LOGISTICS

Merten Nefs

**258** CHARACTERISTICS OF URBAN SETTLEMENTS IMPACTING MIGRATORY BIRD SPECIES IN INDIA

Ahefaz Panjwani

**26** HOW CAN NEIGHBOURHOOD SUSTAINABILITY ASSESSMENT TOOLS IMPROVE URBAN WELLBEING?

Rosaria Revellini

**273** AFFORDABLE OVERNIGHT LODGING IN HIGH-COST, HIGH-NEED COASTAL ENVIRONMENTS

William Riggs

**311** THE IDENTIFICATION OF URBAN VITALITY CENTER AND ITS SPATIAL RELATIONSHIP BASED ON MULTI-SOURCE BIG DATA IN JINAN CITY, CHINA

Liying Rong

**324** NECESSITY OF ECO-HOUSING IN DEVELOPING COUNTRIES FOR PROMOTING SUSTAINABLE DEVELOPMENT

Dr. Debashis Sanyal

**332** INCORPORATING SMART TECHNOLOGIES FOR ENERGY SUFFICIENCY IN BUILT ENVIRONMENT OF DEVELOPING COUNTRIES: AN ARCHITECT'S PERSPECTIVE

Dr. Debashis Sanyal

**336** CULTURE, PRODUCTIVE HERITAGE AND SPATIAL DEVELOPMENT

Federica Scaffidi

**341** PLACES, PANDEMIC AND MULTIPLE RISKS: NEW EMERGING URBAN CHALLENGES

Marichela Sepe

**348** MAPPING THE WALK : A SCALABLE COMPUTER VISION APPROACH FOR GENERATING SIDEWALK NETWORK DATASETS FROM AERIAL IMAGERY

Andres Sevtsuk

**375** INFORMAL MIGRANT SETTLEMENTS BETWEEN IRREGULAR CONDITION AND RIGHT TO THE CITY. NEW CHALLENGES FOR PLANNING IN CROSS-BORDER EURO-MEDITERRANEAN CONTEXTS

F. Lo Piccolo, V. Todaro, and S. Siringo

**384** PLACE IDENTITIES OF JAPANESE SOCIAL HOUSING (DANCHI): THE ROLE OF URBAN DESIGN IN CREATING A "PLACE"

Hanae Soma

**400** AIR TEMPERATURE CFD SIMULATION OF OUTDOOR SPACE ACCORDING TO HEIGHT CHANGE OF MAIN BUILDING OF APARTMENT COMPLEX

Hyungi Song

**414** CINEMATIC OPEN SPACES OF FLANDERS : SPATIAL PLANNING AND THE IMAGINATION OF FLEMISH OPEN SPACE IN THE FICTION FILMS BULLHEAD AND KID

Annelies Staessen

**428** REGIONAL PLANNING GAMIFICATION – A GAME-BASED APPROACH FOR ACTIVATING REGIONAL PLANNING STRATEGIES

Marvin Stiewing, M.Sc., Tobias Weber, M.Sc., Lena Fastner, Maximilian Henzel, Dominik Rettkowski, Martin Berchtold

**440** THE INFLUENCE OF MORAL KNOWLEDGE ON URBAN VILLAGES IN SHENZHEN, CHINA

Diwen Tan, Roberto Rocco

**451** AN ANALYSIS ON THE DEVELOPMENT GAP BETWEEN THE NORTH AND THE SOUTH IN CHINA UNDER THE NEW PATTERN: CHARACTERISTICS, CAUSES AND COUNTERMEASURES

Xuchen ZHANG

**458** CHARACTERISTICS OF TOD GUIDANCE SYSTEM AND ENHANCEMENT STRATEGIES IN CHINA

Dan Ye

**465** AGE STRUCTURE, RESIDENTIAL DENSITY, AND HOUSING QUALITY: USING CITIZEN HOTLINE DATA TO UNDERSTAND COMMUNITY CONFLICTS IN SHANGHAI

Li HOU, Wei ZHU, ZHANG, Yiyi, CHEN, Xin

## HOW CAN NEIGHBOURHOOD SUSTAINABILITY ASSESSMENT TOOLS IMPROVE URBAN WELLBEING?

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### Introduction

In the contemporary world we are facing four megatrends: population growth, population ageing, international migration and urbanization. All these trends interest both developed countries and developing ones, even if there are some differences and disparities among them. Moreover, they directly affect the sustainable development of nations and consequently have influence on people health and wellbeing.

Paying attention on developed countries, and in particular on European (and Italian) cities, urbanization and population ageing are the two main issues to be considered. In fact, here the number of over 65 years old people is growing exponentially and in 2018 it has overpassed the number of under 5 children. In addition, elderly cohort will exceed the 15-24 one by 2050 (UN, 2019a).

The number of people living in urban contexts will increase, reaching about 68% of the world population (UN, 2019b). This estimation means that cities and their public spaces have to be the core of the sustainable development to guarantee equity, health and wellbeing to the citizens. In fact, rapid urbanization exacerbates environmental problems, inadequate basic services, urban sprawl, differences in opportunities for people.

For this reason, it is necessary to recognize the centrality of people in urban transforming processes by providing equal opportunities for all looking at *2030 Agenda for Sustainable Development* and specifically to the 11th goal *Making cities and human settlements inclusive, safe, resilient and sustainable* (UN, 2015). The purpose of this goal is to ensure access to housing and good public spaces and improve a more inclusive urban planning through adequate public transport and social cohesion.

According to Fusco Girard (2006, p. 48) «the city that promotes sustainable human development is a city in which the human person, in the relational-community dimension is at the centre with its inalienable rights (health, quality environment, work, culture). It promotes integration from its neighbourhoods which reproduce a network of many micro-communities». Neighbourhood is the “ideal urban dimension” where innovation and public investments are possible.

Therefore, this paper focuses on neighbourhood scale to look at health and wellbeing for people in urban contexts. Specifically, it aims to analyse some of the main Neighbourhood Sustainability Assessment (NSA) tools to underline whether and how the use of them can improve urban wellbeing recognising in social sustainability the key to do that.

### Urban health and wellbeing



In 1948, in its Constitution, World Health Organization (WHO) defines health «a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity». According to this definition, human health in urban contexts means to be in a good physical and physiological state sharing spaces and activities with other people.

In particular, in *Encyclopedia of quality of life and well-being research* (Michalos, 2014) the term “urban health” is associated with the outcomes of the physical and social environment that have an impact on the community quality of life within an urban setting. In this sense health may be affected by directly “physical issues”, as pollution, infrastructure, services, open spaces and so on, but also indirectly by “social determinants”, as housing, food, inclusion or exclusion processes.

In exceptional cases, even other factors affect health like in the case of the COVID-19 pandemic. In fact, it has been more than health crisis. The pandemic has stressed economic and social systems, exacerbated inequalities, denied the sense of the city and accentuated its problems. However, climate change is another “exceptional” case that affects urban health.

Because of the increasing trend of urbanization, which means a greater number of people who will live in urban contexts, cities play a key role to respond to the human and urban health challenges. This phenomenon contributes to spatial misery improving the growth of poor areas and then of people living in poor conditions.

In fact, in the *New Urban Agenda* health is considered one of the sustainability challenges that cities and human settlements are facing (UN-Habitat, 2017). According to the author, to do this is necessary to define a limited area of the city where to address the different issues about health.

### **The neighbourhood-scale**

The neighbourhood-scale is the ideal scale to propose regeneration interventions which seek to encourage quality of life and wellbeing. It is the “optimal scale” to receive and implement experimentation for the sustainable development of the cities (Sharifi et al., 2021).

It is not easy to find an unambiguous definition of neighbourhood. After an in-depth literature review, Galster (2001, p. 2112) states that it «is the bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses».

The neighbourhood is “a territorial portion of the city” having its own specificities in which it is possible to strengthen sense of place and sense of community. According to Lynch, in his masterpiece *The image of the city* (1960), neighbourhood is an element of the city with defined boundaries where people can recognise its identifying features.

It is a physical place but it has also an high social value: here people can support each other, that is particularly important for the elderlies, for example, in order to improve their possibility to *age in place* avoiding institutionalisation. Neighbourhood term itself means both «the area of a town that surrounds someone’s home» and «the people who live in this area»<sup>1</sup>.

Therefore, neighbourhood-scale becomes the place where it is possible to evaluate how physical and social environments affect people health and wellbeing. This study pays particular attention on social issues, seen as an accelerator for these issues<sup>2</sup>.

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<sup>1</sup> Definition from Cambridge online dictionary: <https://dictionary.cambridge.org/it/dizionario/inglese/neighbourhood> (last accessed: 24/05/2022).

<sup>2</sup> Even economic and environmental dimension of sustainability could have an impact on urban health and wellbeing and even, but they will not be not an objective of this study.

## **Social sustainability as an accelerator for urban wellbeing**

The morphological characteristics of the urban environment have a direct impact on the interactions between people and between people and the space itself. In fact, the quality of public spaces is essential to ensure inclusion and wellbeing having influence on people behaviour and perception. «It is clear that if a city offers spaces which provide freedom, permitting dialogue, allowing coming and going, affecting the sense of belonging to a community, then that city can be defined as healthy and sustainable» (Arengi, 2020, p. 129).

The relationship between sustainability and neighbourhoods – more in general public spaces – is quite complex and includes environmental, economic, social, cultural, political issues. However, talking about sustainability implies the promotion of economic growth while minimising environmental impacts and ensuring social inclusion. As a matter of fact, this statement explains the “3 P” – people, planet and profit – introduced by Elkington in 1994.

Sustainability is achieved when there is a balance between these three dimensions – economical, environmental, social –, since they are mutually dependent (Colantonio, 2009). Only in this way people, planet and profit could have the same value in rethinking urban spaces. Nevertheless, the social dimension seems often less relevant than the other two, due to its “immaterial” nature.

For Polese and Stern (2000, p. 15-16) social sustainability is the «development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to compatible cohabitation of culturally and socially diverse groups, while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population». This is one of the most interesting definitions of social sustainability, since it is not possible to have a unique one.

Social sustainability is characterized by different components, which could be distinguished in “hard” or tangible and “soft” or intangible ones (Colantonio, 2009). In particular, the main aspects to be considered are: social equity, social cohesion and participation, social exclusion, environmental justice, security, urban liveability and quality of life (Colantonio, 2009; Shirazi et Keivani, 2019).

As stated, social sustainability and physical characteristics of the urban public spaces influence each other. In detail, urban social sustainability represents the continuous ability of a city to function as a vital environment for cultural development, human interaction and communication (Bramley et al., 2006). Social sustainability in urban areas, precisely urban social sustainability, is therefore based on the design of consciously built and “good quality” places so as to be able to feed sociality, while remaining connected to the issues of social cohesion and social capital (Goosen and Cilliers, 2020).

In this direction, the *New Urban Agenda* (UN-Habitat, 2017) includes even actions aimed at inclusive cities and human settlements which promote social and civic involvement by addressing the issues of urban social sustainability.

Because of this strong connection between the social dimension of sustainability, the quality of the built space and urban health, this study aims to analyse some of the main neighbourhood sustainability assessment tools in order to understand how public spaces at neighbourhood-scale can help to increase the level of urban wellbeing and thus social sustainability.

## **Social sustainability in the Neighbourhood Sustainability Assessment tools**

Neighbourhood sustainability assessment tools, also known as NSA tools, are voluntary systems edited by no-profit organizations to certify specific performances about economic, environmental and social sustainability at neighbourhood-scale. The first examples were born in the 90s at building-scale with the aim of controlling and limiting buildings energy

consumptions. About a decade later the focus was moved also on urban public spaces, taking into account neighbourhoods as places that can play a key role in sustainable development processes.

In fact neighbourhoods represents the “ideal” scale of the city to implement sustainable actions thanks to its confined dimension, its own characteristics and because it is the privileged place of collective activities, social exchange, people interaction and everyday life (Sharifi et al., 2021).

NSA tools are used both in the case of new construction and in regeneration process. They are based on a set of indicators, categories and benchmarks to assess specific performances. These tools aim to objectify the planned intervention assigning a final score which identifies the overall performance of the district in term of sustainability (Boyle et al., 2018). To do this, it is necessary the payment of a fee and the work of third parties which can operationally do the assessment. The fact that the use of NSA tools – and in general all sustainability assessment tools – has a cost constitute a limit in their dissemination, with a greater diffusion in developed countries rather than in developing ones.

Among the most used NSA tools (such as BREEAM Communities, LEED Neighbourhood Development and its Italian version GBC Italia Quartieri, ITACA Scala Urbana, DGNB Districts, Living Community Challenge, CASBEE for Urban Development, Green Star Communities, EcoDistricts, HQE2R) it possible to identify two typologies. According to Sharifi and Murayama (2012) most NSA tools directly derive from their respecting building-scale systems (which are called “spin-off” tools). Instead, a minor part of them (it is the case of EcoDistricts and HQE2R) has been specifically created for neighbourhood-scale interventions and so works differently from previous ones.

Another characteristic of these tools is that each of them is generally used in the country where it has been developed because it is based on the national regulations and it is not always easy to adapt them to other contexts.

NSA tools are generally composed by environmental, economic and social criteria in order to assess the “degree” of sustainability of the selected district. Nevertheless, environmental and economic criteria predominate over the social ones confirming «the fundamental misunderstanding according to which sustainability is mainly intended in environmental terms, despite its strongly anthropocentric nature» (Acierno and Attaianesi, 2018, p. 267).

In this study five NSA tools have been selected on the basis of most diffused in European and Italian contexts and the free availability of their respective manuals. These are: BREEAM Communities (UK), DGNB Districts (Germany), Living Community Challenge (USA), GBC Italia Quartieri (Italy), and EcoDistricts (USA)<sup>3</sup>. In the table 1 the most relevant characteristics of each of them are shown.

Table 1. Summary table of the selected NSA tools

NSA tool	Main country	1 <sup>st</sup> publication / current version	Main characteristics of the current version			
			Structure	Total number of criteria	Minimum score	Is there a specific social category?
BREEAM Community	UK	2008 / 2012	3 steps 6 categories	40 individual issues	30%	Yes, it has <i>Social wellbeing</i> subcategory
EcoDistricts	USA	first decade 2000s / 2018	3 key elements 6 priorities	n.d.	n.d.	It could be <i>Place and Health and wellbeing</i> priorities

<sup>3</sup> For EcoDistricts it was not possible to have the full manual, so the presented indicators will have no corresponding weighting.

			3 implementation phases			
DGNB Districts	Germany	2012 / 2020	5 thematic areas	31 criteria	50%	Yes, it has <i>Sociocultural and functional quality</i>
Living Community Challenge	USA	2014 / 2019	7 categories	20 imperatives	n.d.	It could be found in the categories <i>Health and happiness, Equity and Beauty</i>
GBC Italia Quartieri	Italy	2015 / 2015	3 main categories 2 optional categories	12 prerequisites 42 credits	40/110 points	It could be related to some credits about the “spatial quality”

For each of them the “social criteria” have been selected and compared to understand how they are used and to what end in relation to the whole tool. As it is possible to see in table 1, not all the NSA tools have a specific social category. This is only the case of BREEAM Community and DGNB Districts in which the social theme is expressly stated. Instead, in the other tools social category is linked with criteria or indicators that could have impacts on social issues. These criteria are related to both “hard” components of social sustainability and “soft” ones.

In the table 2 there is a comparison between the identified social categories of each NSA tool, with their respective aims and weighting.

Table 2. Summary table of social categories for each NSA tool

NSA tool	Main category	Criterion	Aim in brief	Weighting
BREEAM Community	Social wellbeing (which is a subcategory of Social and economic wellbeing)	SE02 - Demographic needs and priorities	To ensure that design is based upon the local demographic trends and priorities.	2.7%
		SE 05 - Housing provision	To ensure appropriate housing provision for all within the development.	2.7%
		SE06 - Delivery of services, facilities and amenities	To ensure essential facilities are provided and that they are located within a reasonable and safe walking distance.	2.7%
		SE07 - Public realm	To encourage social interaction by creating comfortable and vibrant spaces in the public realm.	2.7%
		SE09 - Utilities	To provide easy access to site service and communications infrastructure.	0.9%
		SE11 - Green infrastructure	To ensure access to high quality space in the natural environment or urban green infrastructure for all.	1.8%
		SE15 - Inclusive design	To create an inclusive community by enhancing accessibility for as many current and future residents as possible.	1.8%
EcoDistricts	Place	Engagement and inclusion	Civic engagement is strong and processes are inclusive and representative. Sharing programs are robust.	n.d.
		Culture and identity	Historic and culturally significant places are preserved and celebrated. Participation in cultural events is high.	n.d.

	Health and wellbeing	Public spaces	Public spaces are accessible to all. They are high quality, engaging, and active.	n.d.
		Active living	Access to recreation facilities and services is improved. Walkability is enhanced.	n.d.
		Health	Health outcomes and life expectancy are more equitable. Affordable, high-quality health care is accessible. Toxic environments are remediated and regenerated.	n.d.
		Safety	Public safety is enhanced. The built environment is designed for public safety.	n.d.
		Food systems	Healthy and affordable fresh food is accessible. Food production in the district is encouraged.	n.d.
DGNB Districts	Sociocultural and functional quality	SOC 1.6 - Open space	To satisfy the need for recreation and interaction by providing high-quality open spaces within walking distance.	3.5%
		SOC 2.1 - Barrier free design	To make the entire environment accessible to everyone and without restrictions on its use.	2.6%
		SOC 3.1 - Urban design	The objective is to contribute cultural identity by establishing and maintaining consistent urban structure as part of the city as a whole.	2.6%
		SOC 3.2 - Social and functional mix	To make the district adaptable to social change and ensure a socio-functional mix.	3.5%
		SOC 3.3 - Social and commercial infrastructure	To ensure close, easily accessible and commercial infrastructure, creating social acceptance of the district.	2.6%
	Process quality	PRO 1.7 - Participation	To involve all those affected by the planning at an early stage.	3.3%
Living Community Challenge	Health and happiness	08 - Healthy neighbourhood design	To promote and optimize the health and well-being of its residents.	1/20
	Equity	14 - Human scale and human places	To create human-scaled rather than automobile-scaled places.	1/20
		15 - Universal access to nature and place	All primary transportation, roads and non-building infrastructure must be equally accessible to all people.	1/20
		16 - Universal access to community services	To have basic community services and amenities that support the health, dignity and rights of all people.	1/20
	Beauty	19 - Beauty and spirit	To have public art and design features in urban spaces intended solely for human delight.	1/20
		20 - Inspiration and education	To ensure participation through education of the community.	1/20
GBC Italia Quartieri	Organization and Planning of the Neighbourhood	OPQ3 - Mixed use neighbourhoods	To group and make accessible different uses in central areas of the neighbourhood.	4/110
		OPQ6 - Connected and open communities	To promote projects that have high levels of internal connection and are well connected to the city.	2/110
		OPQ9 - Access to public spaces	To improve citizens social life by offering them a variety of open spaces.	1/110

		OPQ10 - Access to recreational activities	To improve citizens social life by offering them a variety of recreational activities.	1/110
		OPQ11 - Universal accessibility	To allow all citizens to participate more easily in community life.	1/110
		OPQ12 - Involvement and openness to the community	To promote awareness of community needs by activating participation.	2/110

## Discussion and conclusion

The carried-out analysis has highlighted the presence of a greater number of environmental and economic criteria regarding social ones, as it is possible to see from their weighting. In particular, as shown in table 2, the social criteria are mainly related to the “hard” components of social sustainability, thus to the physical characteristics of the neighbourhood (i.e., accessibility, mixité, urban design, and so on). While the ones concerning social activities and sense of community are less in number (i.e., participation, involvement, equity) and generally difficult to evaluate quantitatively.

In addition it is difficult compare the criteria of each tool, since they have a different weight and meaning compared to the whole system. For example, in the case of “public space” criterion (BREEAM - S07 Public realm; EcoDistricts - Public spaces; DGNB Districts – SOC 1.6 Open space; LCC – 10 Human scale and human places; GBC Italia Quartieri – OPQ9 Access to public spaces) the aims are similar but the weighting differs from a tool to the other. Moreover, some tools have specific criteria that others do not mention, as in the case of EcoDistricts where there is a criterion named “health” that does not exist in the other tools.

Starting from these considerations it is clear that each tool contributes differently to the improvement of urban health and wellbeing. In EcoDistricts and Living Community Challenge there is a focus on the issues concerning social sustainability compared to the other tools. Nevertheless, they do not provide for an objective measurement through benchmarks and this is a limitation in their application.

It seems necessary improving social categories importance in all the NSA tools and focusing on social sustainability as an accelerator to improve urban health and wellbeing. Therefore, trying to answer to the title question, NSA tools are contributing to people health respect to environmental issues and less to economical and social ones. However, a greater deepening of these dimensions of sustainability would ensure a more adequate vision of urban health and wellbeing, through interventions aimed at both economic and social inclusion and equality.

Further studies on these tools are also needed to think about the possibility of making them usable in countries where they can really promote actions for inclusive cities and human rights.

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