SMARTAGING in Venice. Toward a Definition of Age-Friendly Neighbourhood

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Abstract. The growing population over 65 years old and the process of urbanization are two of the major challenges that the contemporary city has to address urgently. These issues require a rethinking of public spaces to ensure health and well-being and stimulate active ageing.

The theme of age-friendly cities emerges in this context; it's about inclusive cities harmonised with the Agenda 2030 goals and the Universal Design principles since they support people's lives regardless of age, gender, and abilities.

In particular, the neighbourhood scale represents the optimal one able to implement experimentations for the sustainable development of the city. Furthermore, the neighbourhood is generally the place of the elderly's everyday life where they are encouraged to go out and maintain their daily habits thanks to the existence of a safe and good public realm.

Starting from the case study of the Santa Marta neighbourhood in Venice, the author has conducted a multi-phase analysis to investigate the quality of outdoor public spaces and which activities are played in these spaces to understand how the urban experience and the quality of life of the elderlies can be improved.

At the same time, both the good practices listed by the WHO for the achievement of age-friendly environments and some of the major neighbourhood sustainability assessment tools were studied, paying attention to the social dimension of sustainability, seen as an "accelerator" of urban well-being and inclusiveness.

This paper aims to present the first results of an ongoing research, whose purpose is to draft a new tool able to measure the age-friendliness – called SMARTAGING protocol – of a selected neighbourhood. Specifically, the methodological framework will be better described.

In this regard, the new protocol shall support administrations in the understanding of the phenomena related to ageing by directing active policies and design choices with an increasing focus on citizens and local and social issues acting complying with the principles of Universal Design.

Keywords. age-friendly cities and communities, healthy and active ageing; neighbourhood; Venice.

1. Introduction

According to the United Nations world is currently undergoing four demographic megatrends: population growth, international migration, urbanization, and population ageing [1]. These trends are differently diffused worldwide but they all affect the sustainable development of the nations.

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Looking at the population ageing as a phenomenon that affects the "physical" qualities of the built environment, it should be noted that the number of people over 65 is increasing exponentially and that about 49% of the population will have reached this age by 2050 [2]. At the same time, it is estimated that about 68% of the world's population will live in urbanized contexts by the same date [1].

Both urbanization and population ageing can impact the Sustainable Development Goals (SDGs) of the *2030 Agenda for Sustainable Development* [3]. Specifically, together they affect the SDG n. 11 *Make cities and human settlements inclusive, safe, resilient and sustainable*, since this goal recognizes the centrality of people in urban transformation processes by providing equal opportunities for all, regardless of age, gender, or abilities.

In this scenario, it is possible to affirm that the concept of "age-friendly cities", introduced officially by the World Health Organization (WHO) in 2007 to focus on elderlies' necessities within cities [4], is in line with the SDG n. 11 and the principles of Universal Design.

The most appropriate urban scale for making considerations in this regard is the neighbourhood one because «as people become older, the neighbourhoods and communities in which they live become more important» [5]. This is the place of the elderly's everyday life and where the idea of ageing in place is consolidated, so it is the better urban scale to implement this concept [6]. Additionally, older people generally identify the neighbourhood with a community and there they are encouraged to go out and maintain their daily habits thanks to the existence of a safe and good public realm.

Studying the relationship between the elderly and the neighbourhood is an issue of growing interest in different areas (sociology, psychology, urban planning) since it is possible to look at the neighbourhood as a "piece" within the wider urban dimension from which to start and then proceed to a larger scale [7].

Starting from research carried out on the Santa Marta neighbourhood in Venice and a literature review about age-friendly movement and neighbourhood sustainability assessment tools, this paper underlines the importance to have a new age-friendliness assessment tool able to contextualize the ageing phenomenon within cities and objectively evaluate physical and social urban spaces at the neighbourhood scale to direct active policies and design choices with an increasing focus on all citizens.

2. About age-friendly cities and communities

The theme of age-friendly cities emerges as a response to the growing phenomenon of "greying of the cities" to encourage active ageing and promote well-being and good quality of life. Among the main factors affecting the birth of the age-friendly idea, there is the increase in the number of people over 65, the desire to create supportive environments to encourage ageing in place as long as possible, as well as awareness of the impacts that urban changes have on the lives of older people [8].

In particular, the impact of ageing populations on cities and vice versa has specific consequences on urban planning, representing one of the greatest challenges of the 21st century [6]. For this reason, age-friendly cities and communities (AFCCs) can address solutions that provide enabling living spaces for older people and beyond.

2.1. Toward a definition of AFCCs

The first and most important document about age-friendly cities is *Global age-friendly cities: a guide*, edited by the WHO in 2007 [4]. It identifies 8 topics that characterize an AFFCs which are (Figure 1): outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; community support and health services.

The first three topics relate more closely to the physical environment and have a strong influence on mobility, accessibility, perception of safety and security. Thereafter, the second three topics concern the social and cultural environment that directly impacts physiological well-being. Finally, the last two topics concern specifically the health and social services offered to the elderly.

AFCCs address these issues, each of them may constitute a "barrier" for the elderly, to create opportunities for active and healthy ageing [9].

Figure 1. The 8 topics of age-friendly cities presented by the WHO in 2007.

This is the first programme which proposes a comprehensive and multidisciplinary framework concerning a specific demographic cohort which, however, needs global action at the urban level [6]. It was created with elderlies in mind, but it can improve well-being and provide continuous support even to other citizens, regardless of age and abilities [10].

Currently, there is not a unique definition of AFFCs. According to Alley et al. [8], it is «a place where older people are actively involved, valued, and supported with infrastructure and services that effectively accommodate their needs». In addition, for Carpentieri et al. it deals with [11] «a city that manages to compensate for the fragility and physical, cognitive and social changes associated with age, to ensure active ageing, understood as the process of optimising health opportunities, participation and safety to improve the quality of life of ageing people».

In 2018 the WHO [12] states it's about environments that are «free from physical and social barriers, and are supported by policies, systems, services, products, and technologies that: promote health and build and maintain physical and mental capacity across the life-course; and enable people, even when experiencing capacity loss, to continue to do the things they value».

Having a definition of AFFCs can be useful for carrying out an evaluation and a comparison of the interventions in order aim to increase the number (and the quality) of age-friendly environments.

2.2. How to assess the age-friendliness of a city

The 8 topics denote the complexity and multidimensionality of age-friendliness, understood as the ability of communities to encourage and support active ageing through the creation of enabling environments. It is a complex concept, it depends on the context and, for this reason, it is not easy to standardize [13].

Since 2007, the WHO has developed some tools intending to measure the age-friendliness of a city (the checklist in 2007 [14], the core indicators in 2015 [13] and finally the European handbook in 2017 [5]) which, however, present critical, including the lack of a quantitative approach. In fact today, it can be said that an optimal tool for evaluating age-friendly cities and communities has not yet been identified [15].

For example, the *Checklist of essential features of age-friendly cities* [14] is the first attempt aimed to indicate in 84 items the characteristics of an age-friendly city for each of the 8 topics. It is only a qualitative tool because of the lack of regulatory references or benchmarks for the assessment of each item.

Meanwhile, the 23 core indicators are more comprehensive with more accurate definitions. However, it is not a rigorous tool because of its flexibility and adaptability by local administrations. Also in this case there are no benchmarks, which are important for establishing the effectiveness of an action. The WHO declares that the core indicators can be too reductive simplifying complex realities [13].

At last, there is the *Age-friendly environments in Europe* (AFEE) handbook [5] which aims to: get better knowledge and awareness about the topic; sum the phases and the main initiatives to create age-friendly environments; give a rough indication of the indicators to be used for monitoring the projects. There are here 37 action areas and 100 goals. Although it is not a real assessment tool, this handbook represents an important reference for the development of strategies aimed at measuring age-friendliness on the urban scale.

3. Neighbourhood sustainability assessment tools

Together with this study, some of the most used neighbourhood sustainability assessment tools have been analysed to understand how to edit an age-friendliness assessment tool. The neighbourhood scale represents the optimal one able to implement experimentations for the sustainable development of the city [16]. Specifically, attention has been paid to the social dimension of sustainability seen as an "accelerator" for the improvement of urban well-being and inclusiveness, since it is strongly interrelated with accessibility, equity, empowerment, participation, and cultural identity [17].

This analysis was useful to comprehend how they are structured and how social indicators can be applied in the new tool too.

3.1. Social sustainability

Even though not exhaustive, here it is briefly described the meaning of social sustainability (SS). This is one of the three dimensions of sustainability (environmental, economic, social) but it has always been considered less than the other two ones when applied in policies and practices.

There is not a unique definition, however, it is possible to determine the main aspects of SS: social equity, social cohesion and participation, social exclusion, environmental

justice, security, urban livability, and quality of life [18]. As Colantonio says, they could be distinguished in "soft" components (those intangible aspects like social cohesion) from "hard" ones (those tangible ones like the presence of facilities) [18]. These latter components are influenced by urban physical characteristics. This is the reason why SS and urban form are strictly dependent on each other.

Otherwise, the "intangible" nature of the social dimension and the lack of a clear definition make its assessment difficult to achieve [18].

3.2. Social indicators in neighbourhood sustainability assessment tools

Sustainability assessment tools are voluntary systems whose purpose is to certify defined performances of a specific object. They were born at the building scale in the 90s but they were designed even for the neighbourhood scale about a decade later.

Neighbourhood sustainability assessment (NSA) tools are used to evaluate both new constructions and urban renewals. Although globally several tools have been created, they all have a similar structure consisting of general categories, indicators, and benchmarks. They aim to give an objective assessment of the planned interventions through a final score which identifies the overall performance in terms of sustainability [19].

In the research carried out by the author six open-source NSA tools were identified and analysed, above all looking into the social dimension to understand what the new tool can learn from these. The most important results are summarized in Table 1.

Table 1. NSA analysed tools and their main characteristics concerning the theme of social sustainability.

NSA tool	Main country, last version	Weighting of the indicators related to SS	Explicit social category
BREEAM Communities	UK, 2012	17,1%	Yes
EcoDistricts	USA, 2018	n.d.*	Yes
DGNB Districts	Germany, 2020	20%	Yes
Living Community Challenge	USA, 2017	40%**	Yes
GBC Quartieri	Italy, 2015	11%	No
ITACA Scala Urbana	Italy, 2016	21%**	No

* For EcoDistricts it was possible only a partial analysis.
** It is not the weighting based on SS indicators reachable points, but the number of indicators related directly or indirectly to social dimension on the total ones. In particular, LCC has no benchmarks.

From the analysis, it emerges that environmental aspects are generally more considered than economic and social ones.

In particular, many indicators contribute indirectly to SS achievement. Most of them are related to the "hard" components of the social dimension, like urban form or accessibility to public spaces. Therefore, it is possible to affirm that "spatial" criteria – as part of social ones – are more numerous than those concerning "soft" components (such as equity, participation, and so on).

Trying to evaluate SS in its whole complex could help municipalities and citizens to achieve the SDG n.11, and so inclusivity for all in urban areas. To do this, the research was based on a case study.

4. The case of the Santa Marta neighbourhood

For about fifty years, Venice is experiencing two significant processes: depopulation and consequent shrinkage, and ageing population. Today there are just over 50,000 inhabitants (source: venessia.com) in the historic centre and about 30% of them are people over 65. The first phenomenon was also influenced by the so-called "touristification" that has negative consequences on the residential and transportation policies as well as on the presence of services and activities.

Few districts remain "authentic" in Venice, among them, there is that of Santa Marta, located in the Sestiere of Dorsoduro, south-west of the city, between the disued area of the former gasometer (north) and the port area (south) (Figure 2).

Figure 2. Identification of Santa Marta neighbourhood in southwest Venice. Elaboration from Google maps.

This neighbourhood has an old history, but what we see today is dated to the early XX century with the work by Istituto Autonomo Case Popolari (IACP).

The choice fell on Santa Marta because this neighbourhood has some specificities compared to the lagoon city: it is the only one directly connected to the mainland and still outside the tourist routes. Moreover, despite the theme of urban accessibility in Venice [20], the neighbourhood is accessible within the three bridges that "enclose" it and it is connected to the rest of the city by public transport (vaporetto).

Here older people have their habits, even if some aspects can be improved. For this reason, the author has conducted a multi-phase analysis to investigate the quality of outdoor spaces and the available activities to understand how it would be possible to improve the elderly's well-being in this urban context. The analyses are preparatory to the development of the tool together with the previous study of existing instruments (both NSA tools and age-friendliness assessment ones).

4.1. The multi-phase analysis

The analysis is made up of two non-simultaneous phases: a GIS mapping of neighbourhood outdoor spaces and a questionnaire submitted to Santa Marta residents over 65. This represents the preliminary steps preparatory to the drafting of the tool.

Thanks to the GIS mapping, it was possible to identify physical obstacles, presence and quantity of green spaces, seating, services and shops in the urban area ("hard" components of SS). At the same time, the questionnaire was used as a participatory tool to involve the elderlies in this research, even if the outcomes were not a success due to

the pandemic limitations (2020-2021 were the years of the questionnaire dissemination). It was useful to understand even the "level" of social equity, cohesion, participation and so on ("soft" components of SS) in the neighbourhood.

Both the mapping and the questionnaire come out the lack of an adequate number of services. This factor adversely affects the elderly's daily life since they need to move to other parts of the city to buy necessities (e.g.: here there is no pharmacy). Meanwhile, outdoor spaces are perceived as clean and safe, which is the reason why it is pleasant to live in these spaces for them.

4.2. Towards a new tool

On the base of what was said about age-friendliness assessment and NSA tools and the findings that emerged from the multi-phase analysis, the author has delineated some characteristics that the new tool has to respect.

Specifically, it should have a simple but rigorous structure, in which each indicator has the same weight to avoid a subjectification of the evaluation. It will be called SMARTAGING, which is a portmanteau of the sentence "Santa Marta is aging".

Thanks to the different analyses, three key areas that contribute to healthy and active ageing have been first identified. They concern the quality of public space, mobility and transport, services and community (Figure 3).

The first two areas tend to measure spatiality and physical aspects of the environment (excluding the 'housing' topic which is not a subject of the present study), instead, the last one aims to investigate the perceived sense of belonging and the existence of a support network for the elderly.

Each of them can be assessed based on specific criteria, which in turn consist of indicators, with a total number of 13 criteria and 40 indicators.

1. PUBLIC SPACE QUALITY   2. MOBILITY AND TRANSPORT   3. SERVICES AND COMMUNITY

Figure 3. The three key areas proposed with their respective symbols (edited by the author).

The SMARTAGING protocol is actually under validation, and it will be tested by the author in Santa Marta and in other selected neighbourhoods to understand how it works and act for its eventual improvement.

5. Conclusion

Since urban space enables ageing in place and allows an active social life [21] analysis and actions at this scale are considered fundamental. In this regard, the use of an assessment tool can support administrations in understanding the ageing phenomenon in urban areas and direct them towards age-friendly actions. This paper provides only an overview of the methodological framework to build the new tool.

The SMARTAGING protocol should contribute in this sense by focusing on citizens and heading for good design choices that act in compliance with the principles of Universal Design. It aims to measure quantitatively the age-friendliness of a neighbourhood, understand the existing issues and then identify possible actions to be promoted in the three defined areas so that the neighbourhood can be overall more welcoming and safer for the elderly. To do this further work has to be done, testing the tool and involving administrations and citizens to underline its critical and potential.

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