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Building Smart Healthy Inclusive Environments for All Ages with Citizens

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Abstract. The paper provides an introduction to the public discourse around the notion of smart healthy inclusive environments. First, the basic ideas are explained and related to citizen participation in the context of implementation of a "society for all ages" concept disseminated by the United Nations. Next, the text discusses selected initiatives of the European Commission in the field of intergenerational programming and policies as well as features of the COST Action NET4Age-Friendly: Smart Healthy Age-Friendly Environments (SHAFE). The following sections are focused on studying and discussing examples of projects and methodologies that have been aimed at: empowering facilitators of smart healthy inclusive environments, empowering citizens to deal with health emergencies, and supporting older people's voices. The conclusion covers selected recommendations for entities of public policy on ageing (ageing policy) as well as potential directions for further research.

Keywords: Age-friendly cities and communities, Citizen participation, Inclusive environments, Intergenerational Programmes and Policies, Smart Healthy Age-Friendly Environments (SHAFE), Society for all ages

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Introduction

Smart, healthy, and inclusive environments can help improve and support independent living throughout the course of life, regardless of age, gender, health status, disabilities, cultural differences, and personal choices. In order to develop and design these environments, it is of the utmost importance to include the people who are to live in these designed surroundings and should ideally accept the use of the proposed solutions. In this contribution, we explore several approaches to citizen participation in order to create smart healthy inclusive solutions and environments, including solutions, programs, schemes, products, and services for all ages. The methodologies of involvement and engagement are acknowledged, and—if appropriate—success factors and lessons learned are identified. At first, a short overview of the smart healthy age-friendly environments (SHAFE) notion is given. This is followed by a paragraph on citizens' participation in the context of implementation of a "society for all ages" concept promoted by the United Nations. Thereafter, several projects are presented, methodologies of participation highlighted, results described, and conclusions drawn.

Defining the Smart Healthy Inclusive Environments

The challenges of various sectors, such as the information and communications technologies (ICTs) sector, the building and urban planning industry, health and social care, as well as those of citizens and their communities, are interlinked. Responding to these challenges will foster awareness and support the creation and implementation of smart, healthy, and inclusive environments for present and future generations that enable them to learn, grow, work, participate in society and enjoy a healthy life, benefiting from the use of digital innovations, accessibility solutions and adaptable support models in the European context.

The local community is the physical, social, and cultural ecosystem closest to people, which is built on relationships of trust, sharing, solidarity and intimacy, where people find social, cultural and identity references, socialise and live their daily lives. The objective conditions of the environment (maintenance, accessibility, mobility, safety, and comfort) affect the quality of life and well-being of citizens, particularly in the context of environmental challenges such as climate change and thus affect the whole community.

Thus, smart healthy inclusive environments, also described as smart healthy age-friendly environments (SHAFE), require a comprehensive approach that optimises the design of social

and physical environments, which is supported by digital tools and services, which allows providing better health and social care as well as promotes not only independent living but also equity and active participation in society. This approach follows the United Nations' line-up, with the Sustainable Development Goals (SDGs) intended to be achieved by the year 2030 [1], stating that sustainable environments for all ages represent the basis for ensuring a better future for the entire world population and addressing most of the growing issues of the ageing population. They are in particular related to Goal 3 ("Ensure healthy lives and promote well-being for all at all ages") and Goal 11 ("Make cities inclusive, safe, resilient and sustainable") and can be understood as an approach broader than other ideas used in the literature such as ambient assisted living (AAL), smart and age-friendly cities and communities (SAFCC), and "ageing in place 2.0" (AIP2.0) [2].

Citizen Participation in the Context of Implementation a "Society for All Ages" Concept

In order to develop the above mentioned inclusive, smart, and healthy environments, citizen involvement and cooperation is particularly important. Having people's voices heard during the conceptualisation and design phases of the development of the living environment fit the objectives of the intergenerational policies related to the United Nations concept of "society for all ages" and its implementation by the World Health Organization's (WHO) Global Network on Age-Friendly Cities and Communities (GNAFCC). Citizen participation clearly pertains to the distinguished domains of age-friendliness described as buildings and housing, social participation, and social inclusion [3, 4].

Van Hoof et al. [4] took the widely used concept of the "ladder of citizen participation" by Arnstein [5] as a starting point in shaping various roles that citizens can play. Arnstein described eight roles for citizens, varying from nonparticipation (in forms such as manipulation and therapy) through tokenism to citizen power. Tokenism is divided into informing (about citizen' rights, but often the one-way flow of information), consultation (e.g., ask for opinions in surveys, neighbourhood meetings or hearings), and placation (citizens are granted a limited degree of influence in boards or commissions). Higher levels of participation grouped under the notion of citizen power are divided into partnership (shared planning and decision-making responsibilities through structures such as policy boards), delegated power (some degree of

control is transferred to citizens), and citizen control (participants or residents can govern a programme or an institution and be in full charge of policy and managerial aspects).

Additional research on citizen participation by Van Hoof et al. [4] showed that involvement is not automatically a guarantee for success. For example, due to a limited number of active participants, lack of required skills to participate or not representing the target group, success can be rather limited. Van Hoof et al. further identified the factors that impact the participation of citizens in a positive manner, such as the provision of regular feedback, the full commitment of the involved organisations, and the usage of understandable and inclusive language. Having these observations in mind, the following sections are providing discussions and examples of various approaches to citizen participation related to SHAFE.

Selected Initiatives of the European Commission in the Field of Intergenerational Programming and Policies

In 2012, the European Commission announced the European Year for Active Ageing and Solidarity between Generations and took the initiative to launch a bottom-up approach to involve citizens and organisations' actions and opinions in the field of public policy on ageing (ageing policy) [6]. It led to the creation of the European Innovation Partnership on Active and Healthy Ageing (EIPonAHA) [7]. At first, it was well-received, and many parties joined the network. Over the years, the broad interest slowly faded but the main challenges recognised remained unsolved, for example, the need for scaling up and transferring across the countries, regions, and communities the best practices and solutions such as social innovations and technological innovations in ageing [8, 9]. Nevertheless, several networks that had their origin in the EIPonAHA, such as the Stakeholders Network on Smart Healthy Age-Friendly Environments (SHAFE) [10] and the Reference Sites Collaborative Network [11], still continue to operate.

To bring the European Union (EU) citizens' involvement alive again, the European Commission, at the beginning of the year 2021, launched a new cooperation network titled the Active and Healthy Living in the Digital World. This network is a part of the Futurium platform that started already in the year 2011 as a foresight project aimed at participatory policymaking, crowdsourcing of ideas, and discussing EU policies [12]. One of the dedicated areas within this emerging network is dedicated to age-friendly environments.

On a different note, the President of the European Commission, Ms Ursula von der Leyen, also at the beginning of the year 2021, took the initiative to launch a bottom-up approach initiative: co-designing the New European Bauhaus [13]. The New European Bauhaus proposes to focus the conversations on the places that EU citizens inhabit and on the relationship with natural environments beyond the built space. It is a practical approach to discover beautiful, sustainable, and inclusive ways of living and to use them to inspire our way forward. EU citizens are invited to join the conversation and are asked to share their thoughts on future environments and places to be like. Moreover, if it was their neighbourhood, how should that look like, feel like, and work like.

COST Action NET4Age-Friendly: Smart Healthy Age-Friendly Environments

The concept behind SHAFE has inspired several projects and initiatives, including one of the most recent initiatives supported by the European Cooperation in Science and Technology: NET4Age-Friendly (2020-2024; COST Action 19136), which is an international interdisciplinary network on health and well-being in an age-friendly digital world focused on the promotion of social inclusion, independent living, and active and healthy ageing in society.

Participating scholars, practitioners, and stakeholders from the business and third sector work in four thematic groups on user-centred inclusive design, integrated health and well-being pathways, digital solutions, and large-scale sustainable implementation, and on impact and sustainability (including policy development, funding forecast, and cost-benefit evaluations). In order to synthesise and critically examine the results of these four themes and existing practices of SHAFE, a fifth working group will develop a reference framework with guidelines, standards, and practices (success factors and lessons learned) [14].

The main purpose of described COST Action is to build and nurture local, regional, or national ecosystems in each participating country. Ecosystems consist of citizens, public authorities, businesses, non-governmental organisations (NGOs), and research and development entities. These ecosystems aim to foster the implementation of SHAFE with the support of the above-mentioned working groups.

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Empowering Facilitators of Smart Healthy Inclusive Environments

Erasmus+ is the EU's programme to support education, training, youth, and sport in Europe in multinational consortia [15]. These areas are key to support citizens' personal and professional development. High quality, inclusive education and training, as well as informal and non-formal learning, ultimately equip participants of all ages with the qualifications and skills needed for their meaningful participation in a democratic society, intercultural understanding, and successful transition in the labour market. Within the frame of Erasmus+, training and education is developed to empower facilitators to implement smart healthy inclusive environments in their community.

Projects such as "Hands-on SHAFE" [16], "Educational game BIG" [17], "Bridge the Gap!" [18], and "DESIgn for all methods to cREate age-friendly housing" (DESIRE) [19] supported by the Erasmus+ programme include adult learners in the field of inclusive environments. "Hands-on SHAFE" aims to deliver online training packages for informal learning experiences and hands-on tools to improve the skills of people of all ages and especially seeks to enable persons with lower skills or qualifications to choose and implement SHAFE in their own homes or neighbourhoods. In this way, the project fosters and promotes social inclusion for people of all ages and genders, including people with cognitive or physical impairments or disabilities. It also aims to enable citizens to become innovators and trailblazers in their own neighbourhoods or to become entrepreneurs in the field of SHAFE services and products.

The educational game "Building Inclusive environments for all Generations" (BIG) elaborates further on the training about SHAFE by developing an online game. The player can meet and solve the challenges of characters during the play, such as inaccessible housing for a wheelchair, loading goods in a car while taking care of a child, or visiting a restaurant with impaired sight. The project will also develop a workshop methodology to use the game in joint training settings.

The "Bridge the Gap!" project focuses on the training of older people to create and improve their own living environments to support independent living and participation in society. On the one hand, the training offers traditional means to advocate their interests. On the other hand, it will mainly focus on the capacity building of older adults to use digital skills. Such digital actions include accessing social media, building online advocacy accounts, or sharing photos

to express to stakeholders and decision-makers specific local needs to improve the local living environment.

The DESIRE project is developed by an international partnership involving four countries working on a design for all (D4ALL) concept applied to age-friendly housing. DESIRE aims to provide professionals in the building industry as well as furniture and home furnishings sector with the tools and skills to apply D4ALL methods as an integral part of the design process, with the aim to create or adapt age-friendly housing as a solution for the well-being, comfort and autonomy of older adults or people in situation of dependency at home. The project will develop an innovative training course on D4ALL to meet the emotional, cognitive, and social needs of older adults while driving new opportunities in the habitat sector, fostering interactions and knowledge exchange in the design process between cross-cutting fields such as science, social sciences, and arts.

Empowering Citizens to Deal with Health Emergencies

Erasmus+ project "STEP_UP" [20] intends to develop a training tool for social care and community stakeholders, where they are introduced to the impact of behaviours in the spread of a pandemic or emergency situation and trained, through gaming strategies, to prevent and cope, being empowered to protect and promote well-being in their communities.

The core of this project will be an educational game, which can also be used as a recreational game for the common public. In "STEP_UP," the players will play with the aim to stop a pandemic from spreading. A list of measures will be displayed, and the player needs to learn about them in order to be able to choose those that would help to impede the virus spread without damaging the economy or causing societal anger. This game will also help people better understand and follow governmental measures and set aside evidence-based information and facts from myths, fake news, and other forms of misinformation or disinformation.

Case Study of Supporting Older People's Voice: Senior-Friendly the Hague

Since 2015, the municipality of The Hague is a member of the WHO's Global Network on Age-Friendly Cities and Communities [21]. Member cities of GNAFCC follow a 5-year cycle of planning, implementation, and evaluation in order to make their respective city or community age-friendly. The Hague recently finalised their first cycle by performing a broad survey among

older people (65+) to express their opinions on the age-friendliness of the city. Overall, the older citizens of The Hague value the age-friendliness of their city as well as perceives it as sufficient. They give high scores to their own homes. On the contrary, outdoor spaces and buildings were scored significantly lower. People in the situation of having a lower income, health and mobility issues are less satisfied.

In order to better involve older adults in local policymaking, the municipality facilitates three ways of citizens' involvement. At first, it subsidizes the overarching Older People's Council of The Hague (in Dutch: Stedelijke Ouderencommissie; SOC) [22-24]. Secondly, it facilitates and supports the building and maintenance of a local ecosystem titled the Knowledge Platform Age-Friendly The Hague. In this platform, older citizens, scholars, public health administration, municipal policymakers, and social enterprises (social small and medium-sized enterprises; SMEs) meet on a regular basis to exchange ongoing research and to look for cooperation opportunities in the field of the municipal Action Plan Age-Friendly The Hague (2020-2022). The final support to hear the voice of older people in The Hague is the fostering of the active involvement of an older people's panel: a broad panel of at least 1,500 older adults (out of 77,000 people aged 65 and over) who can be consulted on a large variety of municipal topics.

Conclusion: Citizens' Participation in Smart Healthy Inclusive Environments Explored

From this broad overview of fieldwork, it has been possible to explore various perspectives of inclusive environments, their challenges, and the needs to be addressed. Some of the lessons learned in the various projects include that citizen participation is fully recognized as essential (Table 1). However, a long way is still necessary to make it structured, constant, and comprehensive.

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Table 1. The Comparison of Selected Initiatives of Citizen Participation Related to the Implementation of a "Society for All Ages" Concept

Initiatives	Strengths	Weaknesses	Challenges
European Commission's Initiatives	- Combining bottom-up and top-down approaches to ageing policy - Focus on combining population ageing with digitalisation processes and the development of diverse environments	- Unclear monitoring and evaluation of results - Dependent on funding programmes with priorities on specific sectoral policies (e.g., ICT and AI-focused economic entities)	- Scaling up of the best practices and policy transfer across the countries, regions, and communities
COST Action NET4Age-Friendly	- Bottom-up international and interdisciplinary network - Providing support in the form of guidelines, standards, and practices	- Establishing sustainability for the network after the project period	- Building multilevel ecosystems with a quadruple helix of citizens, public authorities, companies, and researchers
Projects: "Hands-on SHAFE," "BIG," "Bridge the Gap!," and "DESIRE"	- Delivering training packages and tools related to age-friendly homes or neighbourhoods - Entrepreneurship promotion	- Limited scale of innovative solutions	- Further dissemination and development of schemes
Project "STEP_UP"	- Empowering citizens to deal with health emergencies	- Monitoring and evaluation of results after the COVID-19 pandemic	- Extending focus on the fight with misinformation or disinformation
Senior-Friendly The Hague	- Broad set of initiatives to involve older people in implementation and governance of age-friendly city's idea	- Establishing sustainability of the older people's council, the knowledge platform, and an older people's panel	- Citizens' involvement is dependent on their socioeconomic status

Source: own elaboration.

The call for active citizenship and ownership of the transformation of society is, on the one hand, a gift to the citizens. Nevertheless, at the same time, this call is also a burden in terms of commitment and involvement, which currently, not all are prepared to deliver. To overcome these barriers, learning experiences focusing on older adults in Erasmus+ training activities and

games as well as knowledge platforms and ecosystems do support the awareness of older adults to uptake and realise their own lives in their environments. The initiatives that foster more active citizenship and those who call for the participation of several age and societal groups are at the core of this citizen empowerment need, essential to create a better and fairer society for all. This development just started.

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