

Review

Age-Inclusive Healthcare Sustainability: Romania's Regulatory and Initiatives Landscape in the European Union Context

Flaviana Rotaru ^{1,2}, Andreea Matei ², Sorana D. Bolboacă ^{3,4,*} , Ariana Anamaria Cordoș ^{4,5} ,
Adriana Elena Bulboacă ⁶ and Călin Muntean ^{4,7} 

- ¹ Faculty of Industrial Engineering and Robotics, Doctoral School, University Politehnica of Bucharest, 060042 Bucharest, Romania; flaviana.rotaru@gmail.com
 - ² ROHEALTH—Health and Bioeconomy Cluster, 010731 Bucharest, Romania; andreeapurice@yahoo.com
 - ³ Department of Medical Informatics, “Iuliu Hațieganu” University of Medicine and Pharmacy, 400349 Cluj-Napoca, Romania
 - ⁴ Romanian Society of Medical Informatics, 300222 Timișoara, Romania; ariana.cordos@gmail.com (A.A.C.); cmuntean@umft.ro (C.M.)
 - ⁵ Department of Practical Abilities, “Iuliu Hațieganu” University of Medicine and Pharmacy, 400337 Cluj-Napoca, Romania
 - ⁶ Department of Pathophysiology, “Iuliu Hațieganu” University of Medicine and Pharmacy, 400012 Cluj-Napoca, Romania; adriana.bulboaca@umfcluj.ro
 - ⁷ Department of Functional Sciences, Medical Informatics and Biostatistics, “Victor Babeș” University of Medicine and Pharmacy, 300172 Timișoara, Romania
- * Correspondence: sbolboaca@umfcluj.ro; Tel.: +40-374-834-506

Abstract: Sustainable healthcare is “healthcare that is economical and has a positive impact on society”. Considering the definition of sustainable healthcare and the increase in life expectancy, the healthcare system is expected to face an increase in presentations addressed to healthcare facilities of older persons with multiple chronic diseases. Age-friendly environments support active living of older persons and healthcare support in their home. Our goal was to assess how the regulatory landscape undertaken in Romania and the ongoing research project initiatives with Romanian partners reflect the concept of age-friendly environments. Romania had a poor overall active aging index (rank 26/28) and a decrease in life expectancy by 1.4 years in 2020, with a high gender gap of 8 years in favor of women. Key findings highlight the integration of EU principles into Romania’s policies, which emphasize inclusivity, non-discrimination, and active aging. Romania’s involvement in European collaborative initiatives is primarily through private associations, lacking representation from governmental structures. National focus in Romania has been on social services for the elderly. The partners in ongoing research projects range from enterprises to universities and research institutes. The majority of ongoing research focuses on assistive technology solutions. The findings underscore the importance of national, regional, and local attention to the environmental and societal aspects of age-friendly initiatives, alongside promoting technology acceptance and adoption.

Keywords: healthcare; older people; independent life; age-friendly environments; policies; initiatives



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1. Introduction

Sustainable healthcare implies structuring the healthcare services to meet the population’s needs while minimizing the impact on environmental, economic, and social resources [1]. The goal is to provide “healthcare that is economical and has a positive impact on society” [2]. The climate-neutral Europe by 2050 through Sustainable Europe Investment Plan (aiming toward mainly renewable power sources of energy for powering the European Union (EU)) [3] and “Towards Zero Carbon Hospitals with Renewable Energy Systems” (aiming to reduce CO₂ emissions from the 15,000 hospitals in Europe) [4] initiatives are just some examples toward sustainable healthcare in the EU. Different actions have been implemented to reduce the impact of healthcare systems on the environment.

The digitalization of healthcare seems to contribute to the decrease in carbon emissions (e.g., telehealth—tele-consultation, tele-diagnosis, tele-monitoring, tele-assistance, and tele-expertise, etc.) [5,6] and reduce waste (e.g., electronic health records, electronic medical records, e-prescription, e-referrals, e-sick leave, etc.) [7,8]. Resource optimization by maximizing their use (e.g., infrastructure, biological samples, etc.) is needed on the road toward environmental sustainability (e.g., sustainability of biobank [9–11]). Effective assessment of the impact of digitalization in healthcare on the staff and environment requires novel scientific methodologies [12–14].

Considering that “clinical activities are the major driver of resource utilization and waste in health care and provide a fundamental opportunity for engaging health professionals in pollution prevention efforts” [15] and the self-sufficiency in the context of active aging, we examined how the concept of age-friendly environments is reflected in the regulatory landscape undertaken in Romania and which are the ongoing research project initiatives with Romanian involvement.

2. Self-Sufficiency and Healthcare

The number of retired persons is increasing in the EU from 19.3% in 2016 to 20.6% in 2020. The percentage of retired persons in Ro also shows a similar trend, increasing from 17.4% in 2016 to 18.9% in 2020 [16]. At the same time, the number of working persons is decreasing [17], with an expected drop from four to two working people for every person aged over 65, the average legal retirement age in Sweden, Iceland, Switzerland, Latvia, Estonia, and Romania [18]. The cost burden for the health and social care systems and the particular needs of the aging population [19–21] led to the creation of age-friendly environments to ensure the independence of the elderly (people aged 65 and over [22]) in their homes and appropriate and available healthcare.

Organizations and individuals have made efforts toward healthy aging and self-sufficiency. The World Health Organization (WHO) discussed active aging in 2002 [23] and launched the “Age-friendly cities” (AFC) initiative in 2005. In 2007, the WHO published “Global age-friendly cities: a guide” that summarizes the view of participants from 33 cities toward the concept of age-friendly environments [24].

The European Innovation Partnership on Active and Healthy Ageing agency launched in 2011, and created a cooperation platform for people involved in innovation for aging well, proposing three cross-cutting and six specific action areas (Figure 1) [25]. The network provides policies on aging and care, community care, social services management and quality, inclusive activation, innovation, and digitalization [25].

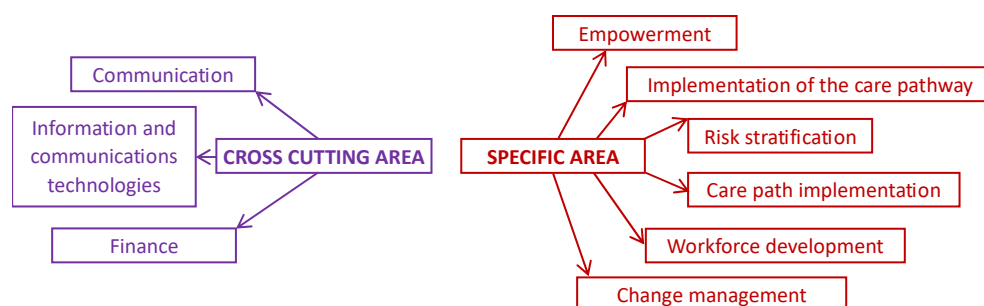


Figure 1. Actions for aging well (adapted from [25]).

Safe Healthy Age-Friendly Environments (SHAFEs) support self-sufficiency and healthcare at home for older citizens and created an alignment of policies and initiatives for health in aging persons [26]. SHAFE recommends cooperation in five domains (Figure 2), emphasizing integration (European vision), cooperation (cross-sectoral governance and coordination), implementation (promote people-centered policies and measures to fund their implementation), knowledge generation (research derived from societal needs and challenges with results used in prevention and prediction), and empowerment [27].

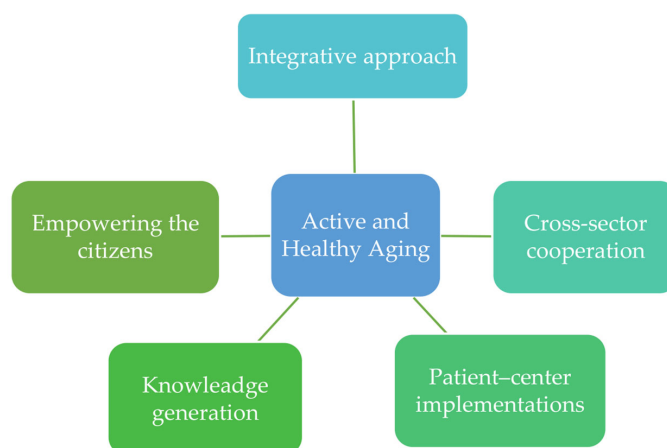


Figure 2. SHAFE areas of recommendations.

The World Health Organization came in 2017 with a frame of three domains and eight components for age-friendly actions (Figure 3) [28].



Figure 3. Domains and components for age-friendly actions.

The engagement of older people, equity, intersectoral collaboration, multilevel governance, and a life-course approach are the basis of the WHO principles [28]. Indicators to monitor and evaluate health and well-being of older people have been developed by different actors (e.g., European Health and Life Expectancy Information System—EHLEIS; EU-SILC; EU Labour Force Survey—EU-LFS, etc.) [29,30]. The active aging index (AAI) includes, for example, a series of input, output, and outcome indicators (Figure 4) [31]. The values of AAI are available for 28 European countries and cover six years (2010, 2012, 2014, 2016, 2018, and 2020) [32].

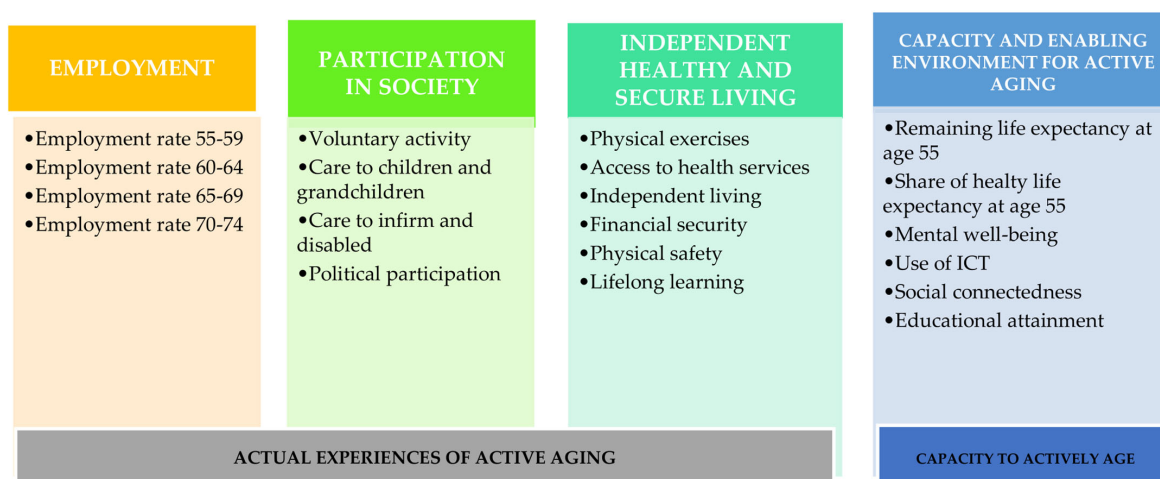


Figure 4. Component of active aging index (AAI). Adapted after Active Ageing Index project. <https://statswiki.unece.org/display/AAI/Active+Ageing+Index+Home> (accessed on 7 July 2023).

3. European Context toward Age-Friendly Environments

3.1. Age-Friendly Environments Reflected in Scientific Literature

One of the first age-friendly initiatives was in 2007 in the United States of America, New York City. The presence of age-friendly characteristics was evaluated and actions (e.g., opportunities for social interactions, pedestrian safety, etc.) toward the achievement of the environment were suggested [33]. Age-friendly initiatives world-wide showed the needs of service proximity, social inclusiveness, affordable public transport, and housing [34–37]. The needs (e.g., outdoor space and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, community and healthcare services) are specific to districts or communities (Hong Kong—China [38–42], Manitoba—Canada [43], United States of America [44], Malaysia [45], Brussels vs. Manchester [46], Russia [47], etc.). The identification of inadequacy of age-friendliness by region could lead “the policy makers in providing the right interventions towards older adults’ needs” [48].

The research conducted on age-friendly environments in the EU is limited to the investigation of needs and expectations. Molina-Martínez [49] used the WHO-5 [50] (July and September 2020) to evaluate the well-being of people older than 55 years living in Basque Country, Spain. Out of 2760 respondents, 27.1% acknowledge that they need help with basic activities, and identified a low sense of neighborhood (mean of 26.71) but a medium-to-high well-being (mean = 68.5) [49]. Monachesi [51] reported in 2023 the results of an interview and auto-administrated questionnaire (Wong et al. [38]) conducted in the city of Macerata, the Marche region, Italy, where the oldest citizen was 112 years of age. The following hierarchy reflecting 139 respondents with ages from 50 to 90 regarding the level of community age-friendliness was reported: Housing > Sense of community > Health services > Social participation > Transportation > Communication and information and Respect and social inclusion > Outdoor space and buildings > Civic participation and employment [51]. Del Barrio et al. [52] demonstrated differences in age-friendly domains reported by men compared to women in the Basque Country, Spain. Safety and a support network are the needs of men and a neighborhood is the primary need of women [52]. Differences between men and women could be explained by individual functional ability and the perception of loneliness, directly and differently related to healthy aging indicators (getting dressed, taking medication, managing money, cognitive function, and handgrip strength) [53]. Camarinha-Matos et al. [54] proposed an ambient assisted living ecosystem that combines independent living, health and care in life, occupation, and recreation in life in a Portuguese population toward a European road mapping initiative on ICT (Information and Communication Technology) and aging.

3.2. The Frame at the European Union Level

Several organizations exist at the EU level aiming to support active and self-sufficient aging:

- European Innovation Partnership on Active and Healthy Ageing—EIP-AHA: <http://www.scale-aha.eu> (accessed on 10 July 2023).
- Reference Site Collaborative Network—RSCN: <https://www.rscn.eu/> (accessed on 10 July 2023).
- European Centre Social Welfare Policy: <https://www.euro.centre.org/> (accessed on 10 July 2023).
- European Health Telematics Association—EHTEL: <https://www.ehtel.eu/> (accessed on 10 July 2023).
- AGE platform Europe: <https://www.age-platform.eu/> (accessed on 10 July 2023).
- European Innovation Partnership on Active and Healthy Ageing [55,56]: <https://www.rscn.eu/> (accessed on 10 July 2023).
- ECHAlliance: <https://echalliance.com/> (accessed on 10 July 2023).
- Global Network for Age-friendly Cities and Communities: <https://extranet.who.int/agefriendlyworld/who-network/> (accessed on 10 July 2023).

All of the above organizations put effort into developing inclusive societies to allow older people's independent life in their homes with the support for health and societal care. Besides regional organizations, local consortiums and networks have also been created (e.g., Ageing@Coimbra, Portugal [57]).

AFEdemy, the Academy on age-friendly environments in Europe (<https://www.afedemy.eu/>, accessed on 10 July 2023), a private company born in 2017 in the Netherlands, aims to build the capacity of national, regional, and local stakeholders in Smart Healthy Age-Friendly Environments (SHAFEs). The AFEdemy support includes coordination, research, training, curriculum, e-learning, networking, and policy targeting local, regional, or national levels in European countries [26,58,59].

4. Age-Friendly Environments in Romania

4.1. Romania Characteristics

Romania is a southeastern European country, is the twelfth-largest country in Europe, and has been a member of the EU since 2007. According to the Nomenclature of Territorial Units for Statistics, Romania has four macroregions (NUT-1: Macroregion 1—North-West and Center, Macroregion 2—North-East and South-East, Macroregion 3—South-Muntenia and Bucharest-Ilfov, and Macroregion 4—South-West Oltenia and West) and eight development regions (NUT-2: North-West, Center, North-East, South-East, South-Muntenia, Bucharest-Ilfov, South-West Oltenia, and West). Significant gaps between development regions regarding economics, infrastructure, and demographics exist [60,61]. Over time, restructuring of the development hierarchy of Romania's counties was observed (2000 vs. 2019) [62], but discrepancies between regions remain [63].

According to national statistical data, on 1 December 2021, Romania had a population of 19,053,815 persons [64], 29% in Macroregion 2 and 27% in Macroregion 3. A slightly higher percentage of women (51.5% vs. 48.5%) is observed and the difference increases to 20% for the population aged above 64 years and 29.1% for the population older than 74 years. The highest percentage of older citizens is in the Center development region, while the highest percentage of older women citizens is in Bucharest-Ilfov (Figure 5).

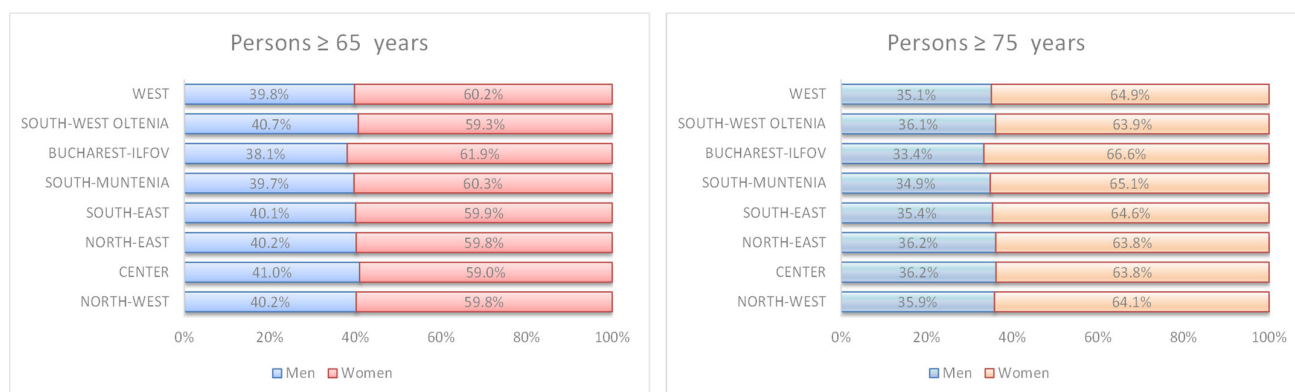


Figure 5. Distribution of Romanian citizens by sex and development region.

Romania had in 2020 an overall AAI of 31.2, being ranked 26/28 (employment: 31.2—15/28; participation: 13.6—22/28; independent living: 63.6—24/28; capacity: 45.9—28/28) [32], with a slightly higher value for men compared to women (Figure 6).

Life expectancy of Romanians decreased by 1.4 years in 2020 [65], with a high sex gap of 8 years in favor of women. Ischemic heart disease (19.1%, data from 2018) and stroke (16.3%, data from 2018) remain the most important causes of death. The cancer survival rates in Romania are below the EU average for prostate cancer (77% Ro vs. 87% EU), childhood leukemia (54% Ro vs. 85% EU), breast cancer (75% Ro vs. 82% EU), and lung cancer (11% Ro vs. 15% EU). Romania's prevention expenditure per capita is the second lowest in the EU.

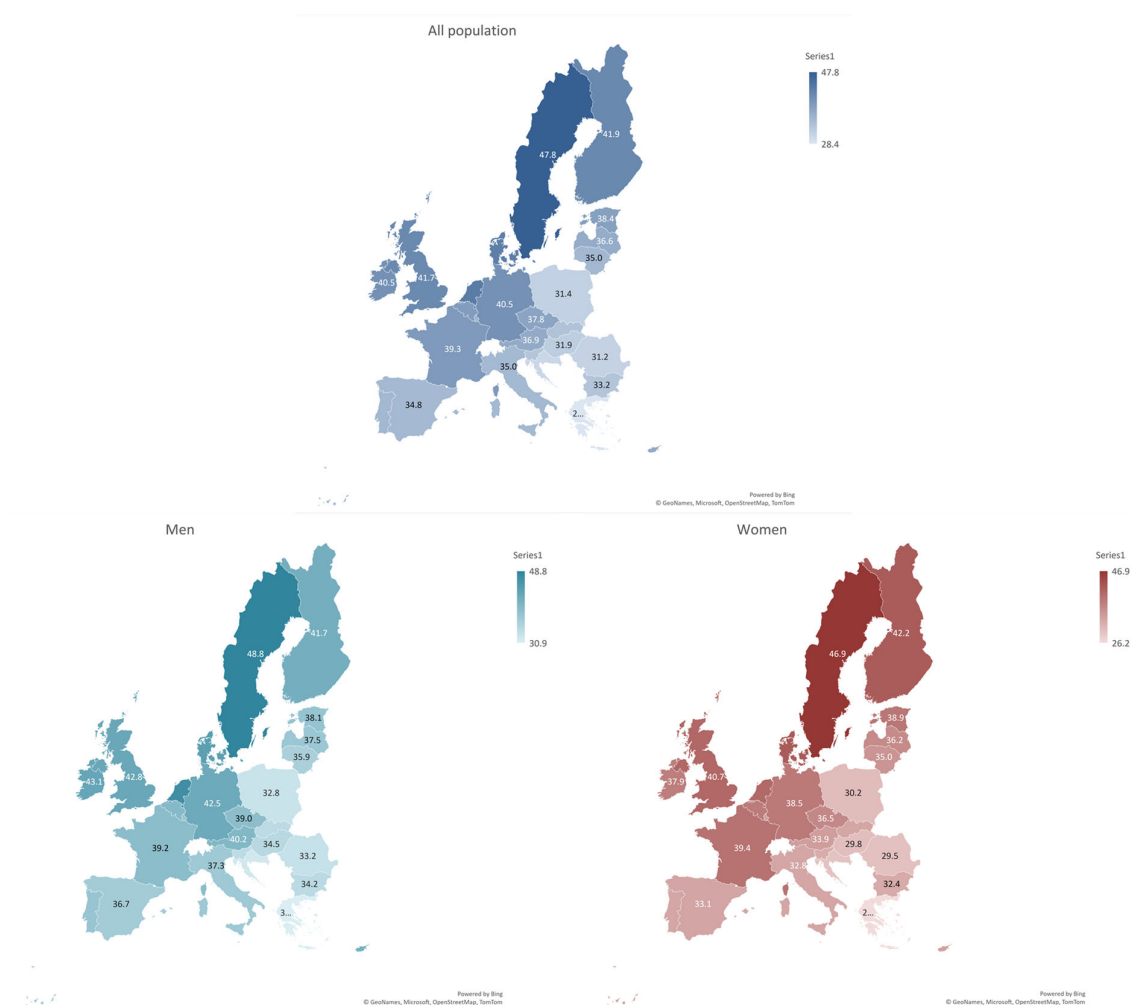


Figure 6. Romanian overall Active Ageing Index (AAI): overall and by sex (graph created based on [32]). Overall, AAI (active aging index) for men is ranked at position 25 out of 28, and for women, it is 26 out of 28.

The overall demographic aging index (the number of people aged 65 and over per 100 people under 15) was 121.2, slightly higher in urban settings (126.2 vs. 116.1) and women (149.7 vs. 94.3) and with the highest values in Macroregion 4 [66]. The demographic dependency ratio (the ratio between the number of people of “dependent” age (<15 years and ≥65 years) and the working-age (15–64 years) population) is 55.5% (men vs. women = 49.7% vs. 61.4%) with a slightly smaller value in urban compared to rural areas (54.8% vs. 56.3%) and with the highest value in the North–West development region [66]. The above-presented statistics support the needs of different policies in Romania according to development regions and sex.

The first geriatric institute in the world was opened by C. I. Parhon in 1952, known today as “Ana Aslan” National Institute of Gerontology and Geriatrics and headed by Acad. Prof. Dr. Ana Aslan from 1958 to her death. The main important merit of C. I. Parhon was his distinction between biological age and chronological age. Ana Aslan continued C. I. Parhon’s work and proved that elderly citizens could have a healthy and an active life [67]. In 1958, the Institute opened a section on social gerontology to study older adults, not only from a medical perspective but also from a social, economic, psychological, and demographic one. The World Health Organization has been commending the Geriatrics Institute in Romania ever since 1964, singling it out as an organizational example for all similar institutions in the world. The Romanian Society for Gerontology and Geriatrics was established in 1959 and Ana Aslan led it until her death. She was a member of the

Executive Bureau of the International Gerontology Association, and starting in 1974, she began talks with the United Nations to organize an ample event dedicated to the third age. This project came to life in 1982 in Vienna, with the opening of the World Assembly for the Third Age, with the slogan “let’s give life to years” [67].

The scientific literature on age-friendly environments in Romania is scarce. We identified only one paper that targets smart and age-friendly cities [68]. Ivan et al. investigated two research questions: “What are the main characteristics of smart city initiatives in Romania during the past eight years?” and “To what extent do the smart cities initiatives in Romania, for the past eight years, have an age-friendly component?” The results only refer to the smart city concept (e.g., smart transport and ecological mobility, free Wi-Fi and Internet safety, recycling, lower CO₂ emissions, e-government, etc.) and the authors highlighted that the age-friendly component “is mostly absent in the most prominent smart city programs” [68]. Zamfir et al. [69] investigated age-friendly concepts in architecture and proposed four master plans developed by “Ion Mincu” University of Architecture and Urbanism undergraduate students targeting the needs of the elderly in a specific place in Bucharest. The authors highlighted the value of appropriate theoretical knowledge of elderly needs, the prerequisite of training toward age-friendly architecture and the implication of professionals in the process when medical facilities are parts of the construction [69]. Duduciuc [70] examined advertising models and techniques appropriate for senior consumers (+55 years). The presence of natural surroundings in advertisements empowers all consumers regardless of age. The seniors who took part in the study prefer to be shown in the advertisement as active members of society (e.g., surrounded by grandchildren and children, in society, or mentoring young people) [70].

4.2. National Regulations and Recommendations

The national regulations and recommendations frame to support active aging in Romania was created. Legislation and national regulations issued by the Romanian government exist to support the concept (Table 1).

Table 1. Romanian active-aging regulations and recommendations.

When?	What?
	Law no. 17/2000 regulates the social assistance of elderly [71]
2020	Law no. 16/2000 regulates the establishment, organization, and functioning of the National Council of the Elderly [72]
	H.G. no. 886/2000 regulates the national grid for assessing the needs of the elderly [73]
2004	H.G. no. 499/2004 regulates the establishment, organization, and functioning of the civic dialogue advisory committees for the problems of the elderly, within the prefectures [74]
2005	H.G. no. 1317/2005 regulates the voluntary activities in the field of home care services for the elderly [75]
2009	H.G. no. 997/2009 regulates the establishment, organization, and operation of the National Commission for Population and Development [76]
2011	Law 292/2011 on social assistance—introduce the reforms for the social assistance of people with disabilities, and for the social assistance of older people [77]
	H.G. no. 566/2015 regarding the approval of the National Strategy for the promotion of active aging and the protection of the elderly for the period 2015–2020 and the Strategic Action Plan for the period 2015–2020, with subsequent amendments and additions (brought up to 18 January 2018)
2015	H.G. for the approval of the National Strategy on long-term care and active aging for the period 2015–2020 [78]
	Governmental Ordinance no. 196/2020, for amending and supplementing Law no. 95/2006 on healthcare reform—the normative act regulates the possibility of providing remote medical services, through telemedicine, by all health professionals [79]
2020	H.G. for the approval of the National Strategy on long-term care and active aging for the period 2023–2030 [80,81]
>2020	Government Decision no. 1.133/14 September 2022 Methodological norms for Telemedicine [82], Romania’s Sustainable Development Strategy 2030 [83]

The Ministry of Labor, Family, Social Protection and Elderly elaborated on the National Strategy on Social Inclusion and Poverty Reduction 2015–2020 [84], the National Strategy for the Protection of Older People and the Promotion of Active Ageing for the period

2015–2020 [85], and the Operational Plan for the period 2016–2020 (Government Decision no. 566/2015) [78]. Aspects of elderly healthcare were included by the Ministry of Health in the National Health Strategy 2023–2030 [86]. Furthermore, National Research and Innovation Strategy 2022–2027 [87] was developed by the Romanian Ministry of Research, Innovation and Digitalization without, however, paying specific attention to the age-friendly concept or research on the elderly.

4.3. Networks and Associations

The National Council of Organizations of Pensioners and Elderly Persons, founded in 2020 [72], advocates for the needs of Romanian older citizens [88]. The major effort was directed toward social services. The Association of Directors of Institutions for Elderly Care (ADIV), founded in 2008, represents Romania at the European Association for Directors and Providers of Long-Term Care Services for the Elderly (EDE) [89]. The main aim of ADIV is to “consolidate the constructive exchange of experience and best practices in the field of management of care and assistance services for the elderly, both at home and in residential settings, in the private and public sectors, in order to improve the quality of life of the beneficiaries” [90].

SenioriNET is a non-governmental organization (NGO) network of services dedicated to the elderly that started activities through a project financed by the Swiss-Romanian Cooperation Program (2013–2015). SeniorNET’s aim is toward “formalizing the SenioriNET network, in order to produce systemic changes related to the social policies concerning the elderly, especially when it comes to financing the services from public funds” [91].

Local associations were created mainly to support senior centers (e.g., Romanian Institute for Active Aging Association). Existing senior centers in Romania (e.g., Amalia and Chief Rabbi Dr. Moses Rosen Residential Center) put their effort into implementing the concept of active aging in their facilities. The Ministry of Labor and Social Solidarity provides a list of social services addressed to older adults that also offer specific care for “geriatric syndromes”, but the list is not updated (December 2022 [92]). Along with Social Care Directorates, several NGOs activate locally, providing the frame for social interaction, psychological support, and home care services (e.g., nutrition, hygiene, and medical services).

Seven Romanian entities are members of the European Innovation Partnership on Active and Healthy Ageing [93]. Among members, we identified one professional association (Professional Association of Social Assistance) and several Social Care Directorates (e.g., Arad City Council—Social Care Directorate, Arad County Council—General Direction of Social Assistance and Child Protection, Bucharest’s 6th District City Council—General Directorate of Social Assistance and Child Protection, Cluj-Napoca City Council—Directorate for Social and Health Services, Municipality of Constanta—Social Care Directorate).

Romania has three members, namely Asociatia Humana Egyesület [94], Habilitas [95], and National Federation Omenia [96], in the AGE Platform Europe, the voice of older persons at the EU level [97]. The AGE Platform Europe had no Romanian governmental members. The European Coalition for Active and Healthy Living—EURAHL [98] is a coalition uniting stakeholders in European Active and Healthy Living (AHL). The aims of EURAHL are to enhance connections, foster collaboration, and amplify the voices of European Networks in AHL. EURAHL main goals are influencing AHL policies, promoting understanding of AHL, encouraging collaborative initiatives, fostering synergies among networks, and providing access to resources. Eighteen regional and local health authorities and three associated members are active in EURAHL but none are from Romania.

4.4. Current Funded Age-Friendly Projects

We briefly present in this section funded projects linked with age-friendly environments that have at least one Romanian partner.

Aging Well in the Digital World (AAL Europe) [99] funds projects toward creating market-ready products and services for older people. Thirty-two collaborative projects aimed toward active aging were identified as funded from 2017 to 2021 and have at least

one Romanian partner. The Romanian partners act as SMEs, R&D organizations, users, or large enterprises. The developed and implemented solutions are in the domain of assistive technology (vINCI, Ella4Life, INCARE, IOANNA, ReMIND, SAVE, CoachMyLife, Fraagile, POSITIVE, DIANA, iCAN, H2H Care, T4ME2, ACESO, ReMember-Me, A4A, Alpha) (Table 2, Figures 7–9). Other domains are networking (social—SALSA, SI4SI; connection of seniors with companies or start-ups—WisdomOfAge, SMartSE), support for caregivers (recruitment—HEROES; support for persons with dementia—DemiCare), services for an active and healthy lifestyle (AGAPE and CAREUP). The topics also include a simulation platform for Alzheimer patients—POSTHCARD, therapy for dementia—SGH, training cognitive function—engAGE, measurement of lifting workloads of older workers—SI-FOOTWORK, a learning platform—FIND-a-PAL, a feasibility study associated with the CARIOT BRUSH oral-care product—ORASTAR, or personalized home rehabilitation—RecoveryFun.

City&Co (Older Adults Co-Creating a Sustainable Age-friendly City) is a project funded by ERA-NET Cofund Urban Transformation Capacities. It *“aims to co-create an innovative spatial tool for a community-based assessment of the age-friendliness of cities, that can be used in multiple countries”* [100]. City&Co had two Romanian partners, namely GEAC (Association Group for Education and Action for Citizens) [101] and National University of Political Studies and Public Administration [102]. The implementation of Romanian versions of the Age-Friendly Cities and Communities Questionnaire (AFCCQ), geoportal, and tools and age-friendly maps of the four cities (Bucharest for Romania) and the co-creation of policy agendas are the main deliverables of the City&Co project [100].

Table 2. Age-friendly projects funded by Aging Well in the Digital World with Romanian partners.

Starting Date	Initiative	Coordinator	Expected Results
1 April 2018	POSTHCARD	University Hospitals of Geneva, Switzerland	platform for caregivers of Alzheimer patients
1 June 2018	vINCI	National Institute for Research and Development in Informatics (ICI Bucharest), Romania	evidence-based IoT framework for non-intrusive monitoring of older adults
1 June 2018	Ella4Life	Virtual Assistant Virtask, The Netherlands	mobile solution that stimulates an active and healthy life
1 October 2018	INCARE	IT Center for Science and Technology, Romania	technology to support the independence of seniors and to optimize the required care amount
1 October 2018	ReMIND	Zora Robotics, Belgium	James nursing robot and a table to assist patients with dementia in stimulation of memory, meaningful and physical activity
1 April 2018	IOANNA	GeoImaging Ltd., Cyprus	online platform to assist seniors to be active citizens
February 2019	SALSA	LIFEtool, Austria	an app-based solution that optionally includes (body) sensors to support physiotherapy
September 2019	SAVE	Transilvania University of Brasov, Romania	solution dedicated to elderly to avoid psychosocial exclusion
1 July 2019	CoachMyLife	Pharmacie Principale, Switzerland	technology to assist daily living and to reduce/stabilize memory impairment
May 2019	POSITIVE	Reall, Poland	quality of life of seniors platform—meaningfulness, happiness, and wellbeing
July 2019	frAAgiLe	Ideable Solutions S.L., Spain	platform for detecting and preventing frailty and falls
February 2020	DIANA	Cogvis Software and Consulting GmbH, Austria	artificial intelligence digital assistant to optimize the nursing process
April 2020	iCan	GeoImaging Ltd., Cyprus	platform with services useful for the senior's everyday life
April 2020	H2HCare	Technical University of Cluj-Napoca, Romania	home care management with a social robot
1 March 2021	T4ME2	Vienna University of Technology, Austria	new supportive, autonomy-promoting, smart toilet solutions for aging people
1 May 2020	ACESO	IT Center for Science and Technology, Romania	health and oral-care platform
April 2020	ReMember-Me	Agecare (Cyprus) Ltd., Cyprus	a technical solution to detect and prevent cognitive decline early on

Table 2. Cont.

Starting Date	Initiative	Coordinator	Expected Results
1 May 2021	WisdomOfAge	Digital Twin SRL, Romania	open digital platform to support elderly people to remain active and contribute toward society
5 April 2021	HEROES	The Care Hub SRL, Romania	recruitment platform with engagement of older people in recruiting activities
1 April 2021	SI4SI	DS TECH, Italy	technical solution for seniors—caregiver and health practitioner interaction
April 2021	ORASTAR	MEDICA, Denmark	ambient assisted living technology to support toothbrushing adherence in elderly with cognitive impairments
1 April 2021	SmartSE	Life Science Innovation North Denmark, Denmark	European-wide digital matchmaking tool to encourage senior entrepreneurship
1 March 2021	FIND-a-PAL	Spółeczna Akademia Nauk, SAN, Poland	platform to prevent social and digital isolation of older people
1 March 2021	SI-FOOTWORK	Technical University of Denmark, Denmark	solution dedicated to older workers to assist them to prevent, mitigate, and correct risk behaviors when lifting
n.a.	SGH	e-Point, Belgium	immersive spaces as tool to reduce the progression of dementia
1 December 2021	engAGE	Technical University of Cluj-Napoca, Romania	technical solution to combat or slow down cognitive decline progression in patients with mild cognitive impairment
1 April 2022	Alpha	Wageningen University, The Netherlands	tool to detect deficiencies in nutrients and amino acids in older persons with plant-based diet
1 January 2022	Recovery Fun	IRCCS INRCA, Italy	VR-based tele-rehabilitation platform for seniors
1 January 2022	A4A	Anyware Solutions ApS, Denmark	digital solutions to monitor older adults living alone
n.a.	AGAPE	Medea S.R.L., Italy	technology platform enabling active and healthy lifestyle services
1 February 2022	DemiCare	AIT Austrian Institute of Technology, Austria	personalized and data-driven support for informal caregivers of persons with dementia
1 May 2022	CAREUP	ECLEXYS Sagl, Switzerland	integrated platform to empower older adults to take care of their own health

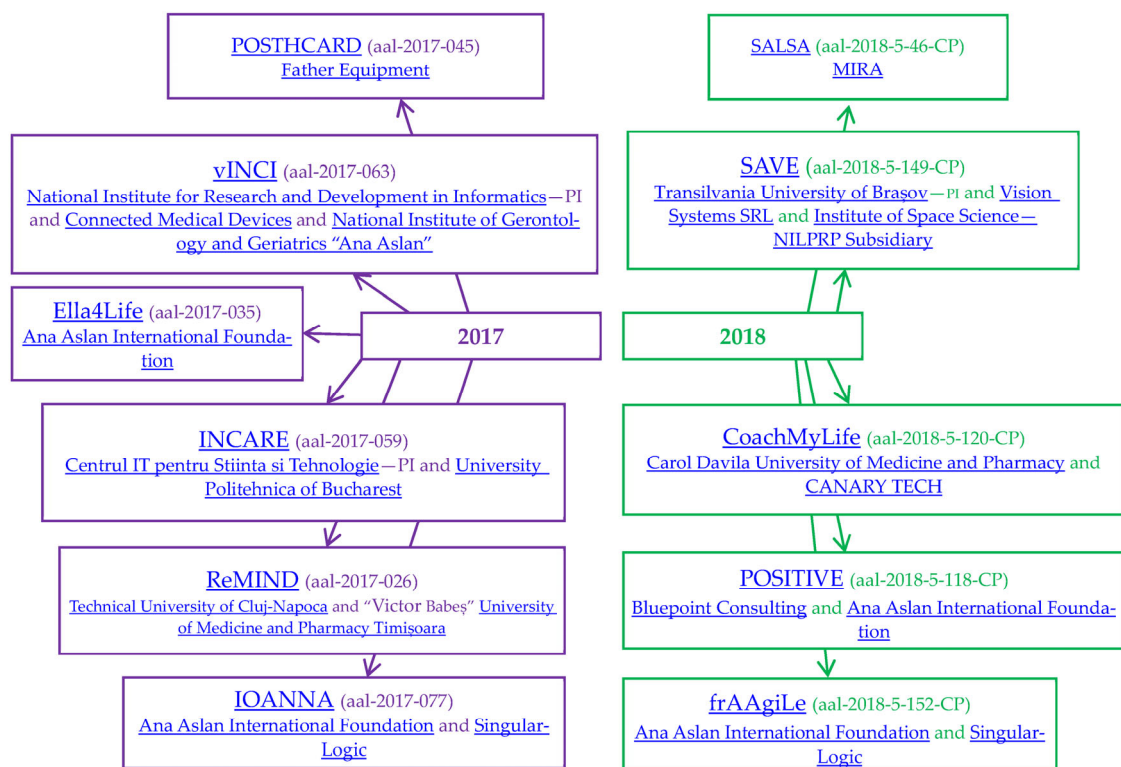


Figure 7. Active-aging-related projects and their characteristics funded in the calls in 2017 and 2018 (PI—principal investigator).

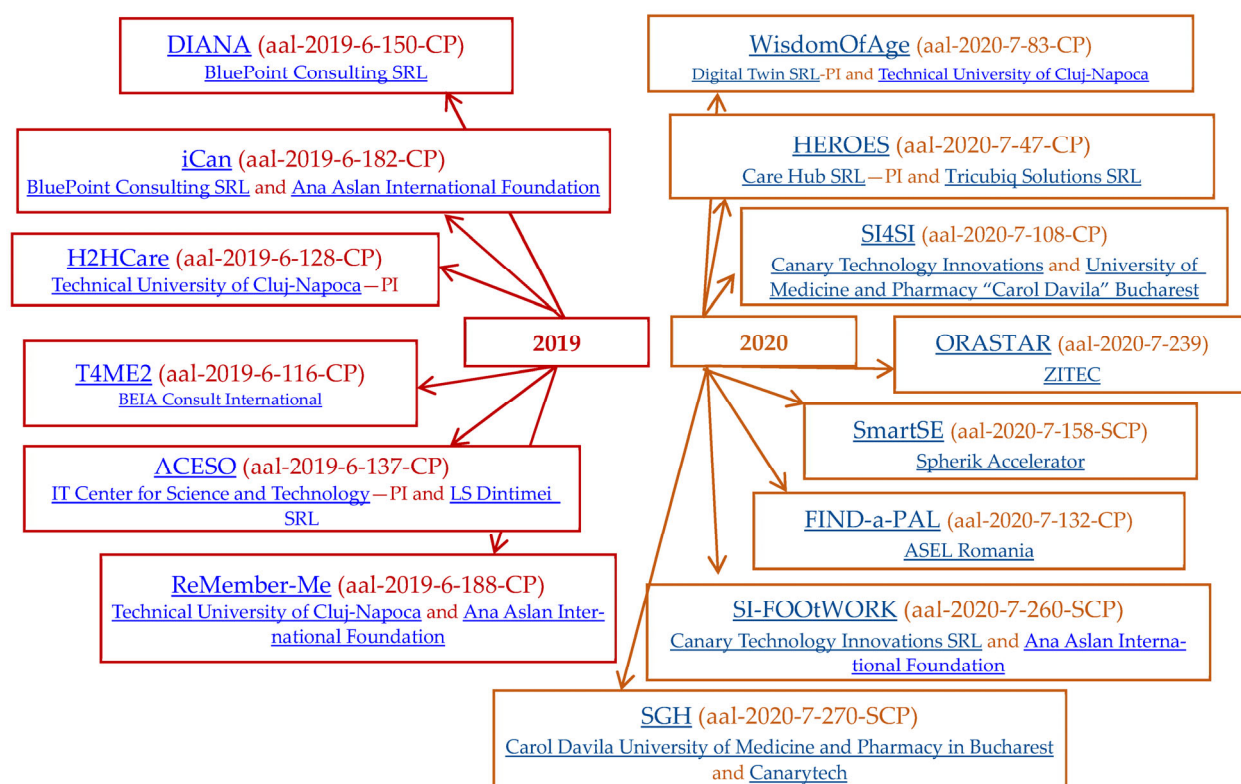


Figure 8. Active-aging-related projects and their characteristics funded in the calls in 2019 and 2020 (PI—principal investigator).

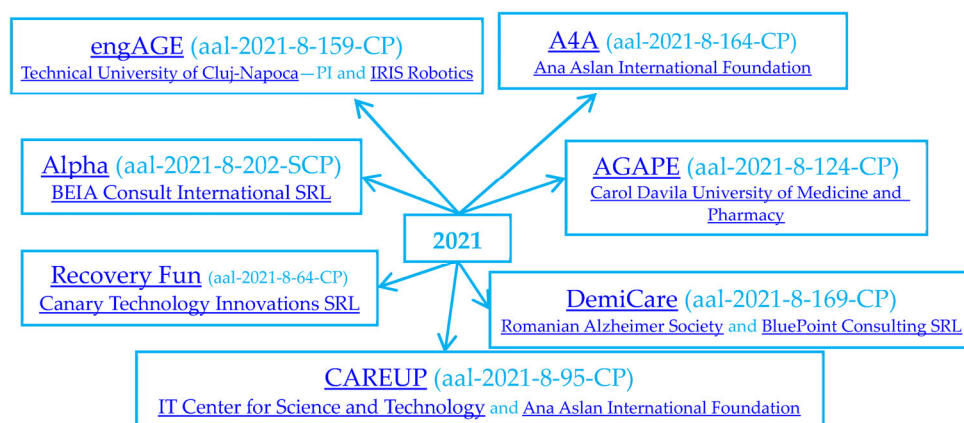


Figure 9. Active-aging-related projects and their characteristics funded in the call in 2021 (PI—principal investigator).

DigitalScouts (Enhancing the digital literacy and participation in Europe) is funded by Erasmus+ Type KA220-ADU—Cooperation partnerships in adult education and “*aims to train people who would like to support older adults in using digital tools*” [103]. The project had one Romanian partner, the Association Group for Education and Action for Citizens [101], and has three targeted self-learning tools (DigitalScouts Compendium, DigitalScouts Training tool, and Digital Toolkit).

NOTRE—Novel Methods Improving Production Innovation Potential is a project funded by the Interreg Europe 2021–2027 interregional cooperation program that aims “*to improve policies supporting innovation and digitalization in companies and health infrastructures that develop and provide medical products and services for the elderly*” [104]. One of the nine partners is from Romania, the North-West Regional Development Agency, Romania.

The PAL-PLAN project (Increasing the institutional capacity for the coordinated national development of palliative care and home care) is a national project that had as a beneficiary the Ministry of Health. PAL-PLAN had a component of palliative care at home or in ambulatory care. One of the targeted results is the elaboration of the National Program for Care at Home.

Two ongoing COST projects also relate to active aging toward the creation of networks to support active aging. NET4Age-Friendly aims “to promote social inclusion, independent living and active and healthy aging in society” [105] and has two Romanian partners in the Management Committee and several Romanian members in the working groups. NET4Age-Friendly offers financial support to training schools and grants (short-term scientific meetings, mobility grants, dissemination conference grant). GoodBrother [106] aims “to increase the awareness on the ethical, legal, and privacy issues associated to audio- and video-based monitoring and to propose privacy-aware working solutions for assisted living” [107]. The network had two Romanian representatives in the Management Committee and several active members in the working groups [106].

4.5. Future Regional and National Project Calls

Romania has already implemented some steps toward age-friendly environments. Regional and national research projects that support the implementation of an age-friendly environment are expected to open. Under North-West Regional Program 2021–2027, we have the topic of multifunctional centers, and the action of *Improving socio-cultural and recreational services* [108]. The National Recovery and Resilience Plan, Component C13. Social Reforms, has the component PNRR/2023/C13/MMSS/I4 (*Day care and recovery centers for the elderly*, Investment I4. *Creation of a network of day care and recovery centers for the elderly*) [109]. The overall objective of PNRR Component C13 is to support the most vulnerable people, including workers, children, disabled people, inactive people, and older people, by increasing access to social services. Reform 7 relates to the reorganization of long-term care services for the elderly. Furthermore, under structural funds, we have Inclusion and Social Dignity Program 2021–2027, Priority 6, *Support services for the elderly* [110]. Two specific objectives of Priority 6 relate to age-friendly environments, namely *promoting the socioeconomic inclusion of marginalized communities, low-income households and disadvantaged groups, including people with special needs, through integrated actions, including housing and social services* (specific objective RSO4.3.) and *expanding equal and timely access to quality, sustainable and affordable services, including services that promote access to housing and person-centred care. Modernizing social protection systems, including promoting access to social protection, paying attention especially for children and disadvantaged groups. Improving accessibility, including for people with disabilities, as well as the effectiveness and resilience of health systems and long-term care services* (specific objective ESO4.11.).

5. Limitations and Further Research

Our paper is a narrative review and has associated limitations, such as a biased, unreproducible, descriptive synthesis and national dimension. The subject of our paper is not appropriate for a systematic search since the literature is scarce and we wanted to capture what would happen when the paper was written in terms of research projects that involved at least one Romanian partner. The scientific literature that reports age-friendly environments is limited, so a systematic synthesis would not be the best solution and was outside of our scope. Our paper is not a classic narrative review, since we summarize mainly the ongoing research projects, not scientific articles. Since the concept is not new and funds were already directed toward active aging, we must appropriately evaluate the societal outputs of the ended projects. Such an evaluation was outside of our purpose but would be beneficial for (research) policy makers and societies. Furthermore, the long-term evaluation of the research projects’ outputs toward healthcare sustainability must be appropriately investigated.

Our paper presents a static picture related to age-friendly environments. Despite the fact that the World Health Organization defined active aging as “the process of optimizing opportunities for health, participation, and security in order to enhance the quality of life as people age” in the early 2020s [111], Romania has taken insufficient steps. Three dimensions had been identified as relevant for age-friendly environments: physical (house and neighborhood), social, and technological [112–114]. Our study showed that most of the ongoing research projects deal with assisting technologies so local, regional, and national resources must deal with both neighborhood and social environments while individuals must resolve the houses. Technological solutions are developed but it is unclear if older adults are willing to use assisting technologies because the existence does not assure users’ adherence and daily utilization. Furthermore, the use of technologies outside the frame of a project or its evaluation must be conducted. In this regard, we must establish and implement a frame of policies to ensure the appropriate use and retraining of users, and, whenever necessary, test the functionality of the devices. Additionally, periodic assessment should be conducted to monitor the adherence and daily utilization of technologies.

The concept of age-friendly environments implies a multifaceted nature, encompassing various sectors and collaborative stakeholders, and needs appropriate policies and initiatives to create more inclusive, supportive, and dignified environments for older adults beyond the development of assistive technologies that received particular attention in the context of digital inclusion and telehealth services. The effectiveness of the effort toward age-friendly environments must be appropriately evaluated through qualitative and quantitative indicators, encompassing accessibility, healthcare, social participation, and public infrastructure in terms of healthcare sustainability. Last but not least, the active implementations of end users in all steps of creating age-friendly environments (e.g., development, implementation, and evaluation) are to be tailored to the needs of the elderly population. Collaborative efforts involving governmental bodies, non-governmental organizations, academia, research institutes, and industry toward a holistic approach to age-friendly and sustainable environments must underpin the initiatives. Of upmost importance is that the initiatives need continuous evaluation and adaptive strategies to address the needs and to ensure sustained progress.

6. Conclusions

Our key findings highlight the integration of EU principles into Romania’s policies, emphasizing inclusivity, non-discrimination, and active aging. The active participation in European collaborative agencies and companies is limited to individual Romanian associations with low representativeness of governmental structures. In Romania, the main national effort was put into the social services addressed to the elderly population, addressing the current need. A limited number of ongoing research projects on age-friendly environments with Romanian partners have been identified. Romanian partners act in the research projects as small/medium-sized enterprises, research and development institutes, end users, or large enterprises. Seventeen of the identified projects develop and implement solutions related to assistive technology but the solutions need to be assessed also in terms of effects on the environment. National, regional, and local governmental bodies need to focus on the environmental and societal dimension of age-friendliness and to bring a sustainable healthcare solution to elderly homes.

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