



AFE^{cc}o

EMPOWERING OLDER ADULTS TO APPLY AFFORDABLE
ECO- AND AGE-FRIENDLY SOLUTIONS TO AGE IN PLACE

AFECO - National Report of Germany

A1 literature review /A2 comparative analysis of barriers and facilitators
/A3 good practices



WROCLAW UNIVERSITY
OF ENVIRONMENTAL
AND LIFE SCIENCES



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About this publication

This report summarises the results of the research activities carried out in Germany within the Erasmus+ project AFECO – Empowering older adults to apply affordable eco- and age-friendly solutions to age in place (cooperation partnership in adult education, project number: 2022-1-NL01-KA220-ADU-000086242). More information is available at <https://afeco.eu/>.

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TABLE OF CONTENTS

About this publication	2
Authors	2
Contributors	2
List of definitions	4
Definition of age-friendly principles	4
Definition of eco-friendly principles	4
Introduction.....	5
Results for Germany	5
Introduction.....	5
Age-friendly principles in Germany	6
Eco-friendly principles in Germany	8
Analysis.....	11
Age-friendly principles.....	11
Eco-friendly principles	12
Gaps and challenges	12
Needs and requirements of older adults	13
Examples.....	14
Education.....	15
References.....	17

List of definitions

Definition of age-friendly principles

Any practical solutions linked to one or more of the eight domains of the age-friendly cities framework that older adults themselves or with the support of others can implement in their own home or community. Any practical solutions linked to one or more of the eight domains of the age-friendly cities framework that in AFECO older adults can implement themselves or with the support of others in their own home or community. The World Health Organization (WHO, 2007, 2016, 2023) developed the age-friendly cities framework to encourage and support active and healthy living by enhancing opportunities for health, participation and security to improve the quality of life of the ageing population. The eight domains of the framework are as follows: outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services.

According to (Menec et al, 2017), Age-friendly principles “(...) support and enable people to age actively (...) with the notion of “active aging” broadly defined in terms of health, participation, and security.”

Definition of eco-friendly principles

Any practical solution that older adults themselves or with the support of others can implement in their own home or community to act more sustainable or environmentally friendly. Environmentally friendly means that the practical solutions should aim to reduce, minimise the impact on, or do no harm to ecosystems or the environment (Webster).

According to Ragheb et. al (2016), a building to be considered “green” or “eco-friendly” needs to have:

- Ventilation systems designed for efficient heating and cooling
- Energy-efficient lightning and appliances
- Adaptive reuse of older buildings
- Water-saving plumbing fixtures
- Landscapes planned to maximize passive solar energy
- Minimal harm to the natural habitat
- Alternate power sources such as solar power or wind power
- Non-synthetic, non-toxic materials
- Locally obtained woods and stone
- Responsibly-harvested woods
- Use of recycled architectural salvage
- Efficient use of space

Introduction

The aim of this report is to give an overview of current state of the art in the occurrence and policies regarding affordable age-friendly and eco-friendly solutions in the partner countries. The report consists of the findings from the literature review, the comparative analysis and the reporting of good practices. It aims for the consortium as a whole to gain an understanding of the state of the art and on affordable age and eco-friendly solutions in partner countries and particularly the home and community fields, and to present that knowledge in the form of a written report.

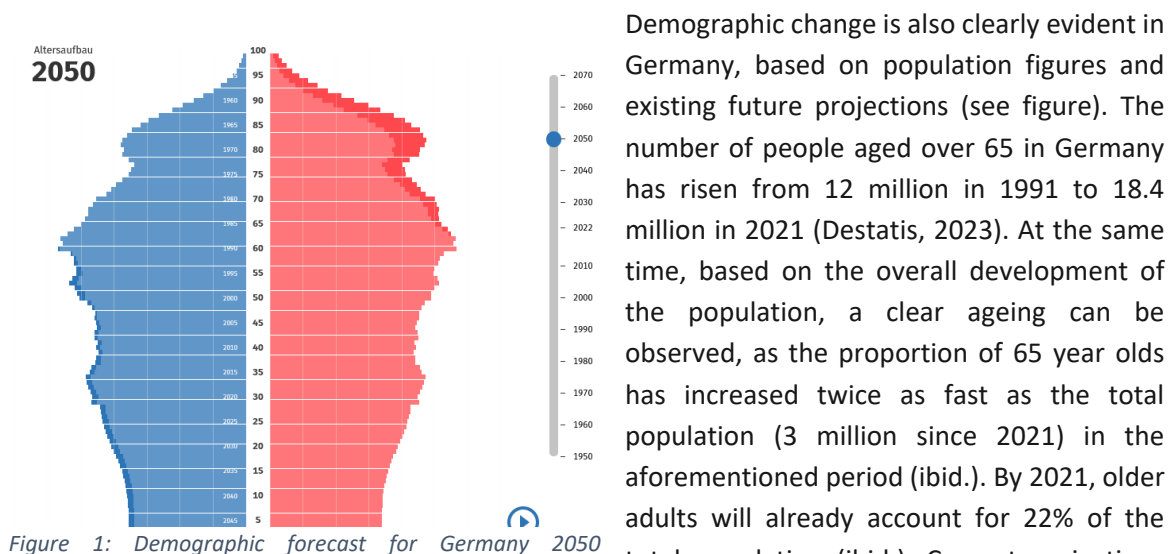
The literature review, the analysis of barriers and facilitators, and the survey on existing or even planning good practices in the project countries, will help the partners to build and update a strong knowledge base in these fields. To be closer to the practical issues that define the adaptability of eco and age-friendly solutions in community, the consortium decided to use mostly grey literature and websites for tools and advice, such as governmental pages. Common grey literature publication types include reports (annual, research, technical, project, etc.), working papers, government documents, white papers and evaluations, which will help all partners to reach conclusions around the common field between age and eco-friendly developments.

Barriers and facilitators found in each project country will be used for stipulating the right consequence of actions needed, to propose a sound methodology that could – in combination with other actions and stakeholders – promote the implementation of age and eco-friendly principles into the public and private sphere of care for older people.

Finally, the selection of good representative practices by each project country can be the basis for a report, and a publication, that depicts the level of maturity and progress of the notions of age-friendliness and eco-friendliness, as well as their impact on the care of older people.

Results for Germany

Introduction



Demographic change is also clearly evident in Germany, based on population figures and existing future projections (see figure). The number of people aged over 65 in Germany has risen from 12 million in 1991 to 18.4 million in 2021 (Destatis, 2023). At the same time, based on the overall development of the population, a clear ageing can be observed, as the proportion of 65 year olds has increased twice as fast as the total population (3 million since 2021) in the aforementioned period (ibid.). By 2021, older adults will already account for 22% of the total population (ibid.). Current projections

suggest that by 2050 the over-65s will already represent 28% of the total population (see Figure 1).

A similarly significant development can be observed in the area of care for dependent persons. The number of people in need of care has increased by more than 100% since 2005. The vast majority of people in need of care are cared for at home by family members, while a further 21% of people in need of care are supported at home by outpatient care and nursing services (see Figure 2). The majority of people in Germany live in or near urban or smaller centres, with the south-west and west being much more densely populated than the north and north-east (Deutschlandatlas, 2023). Most people in Germany live either alone (32%) or with another person in the household (39.5%) (Destatis 2019, p.12). The ownership rate in the German housing market has risen steadily in recent years, with almost as many people now living in owner-occupied housing as in rented accommodation (Destatis, 2023c).

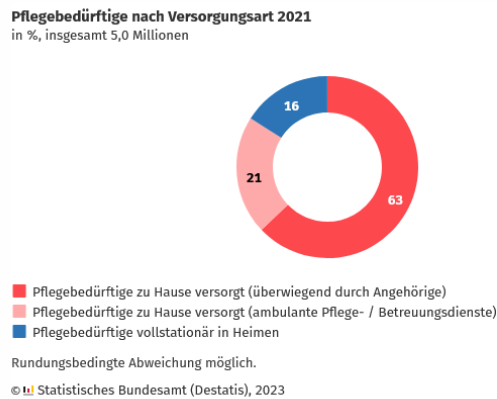


Figure 2: People in need of care by type of support
Source: Destatis, 2023b

Age-friendly principles in Germany

There are already some possibilities and sources of information for older people to influence their living environment in the sense of an age-friendly environment. For example, in many places it is possible to take advantage of housing counselling by welfare organisations such as the German Red Cross (DRK, 2023). Welfare organisations and other providers offer this and is already available in most German regions. The vast majority of providers are networked in an association structure through the Bundesarbeitsgemeinschaft Wohnungsanpassung. The organisation operates a website where regional providers in each federal state can be searched for and contacted (BAG Wohnungsanpassung e.V., 2023). Within the framework of these counselling services, advice can be obtained on the subject of redesigning or converting a home, e.g. if the aim is to achieve greater independence and safety through conversion. For example, they can identify where doors could be widened, steps reduced or additional supports or even sensors installed. Advice may include the following services

- Suggestions for home modifications or adaptations
- Suggestions for appropriate equipment and procurement
- Information on funding and support
- Assistance with hiring tradesmen

- Information on housing alternatives

(Simons 2023, BAG Wohnungsanpassung e.V., 2023)

There are also some online sources of information in German-speaking countries on technical aids such as reminder apps for taking medication, monitoring one's own health data or mapping apps for public toilets (cf. PROVITA, 2023; ifib, 2022). There are also various publications and policy papers from organisations or ministries on the topic of good housing in old age, most of which are available online (cf. BAGSO, 2022; Bundesministerium für Wohnen, 2023). Based on the statistic that 64.4% of people over 60 in Germany now use the internet, and even among the very old over 80 it is already around a third, it can be said that this information is also accessible to a not inconsiderable proportion of older people. Nevertheless, other media such as television, radio or the consumption of information via newspapers and magazines are still the most popular media for people over 60 in Germany (see Figure 3). However, in terms of scientific sources and information, the topic of age justice receives significantly less attention than the topic of climate-friendly cities and principles.

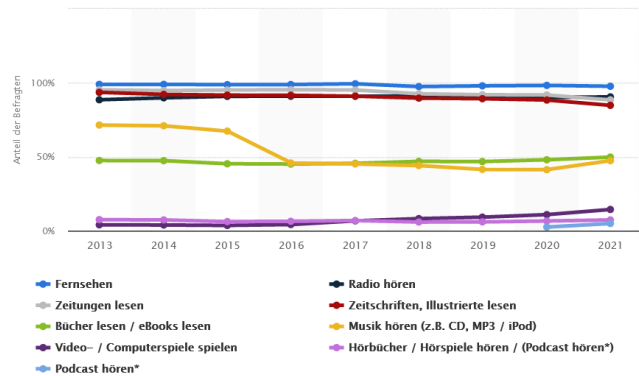


Figure 3: Media Preferences of Age Group 60+ in Germany by type of media; Source: Statista 2023

Nevertheless, age-friendly structures have not yet been sufficiently implemented in Germany, especially outside the urban centres, particularly if one looks at figures such as the backlog of 2 million dwellings for senior citizens (Federal Ministry of Housing, 2023). In the area of age-friendly structures, there are various problems and reservations on the part of the older target group, especially in the area of new technical solutions. For example, a recent study in Germany by the D21 initiative shows that the proportion of people using digital services falls sharply as they age. Only a quarter of people over the age of 85 use digital services today (Ifib, 2022, p.8). This already shows: "a restriction of digital and thus social participation" (ibid.). This gap widens even more with regard to new types of AAL solutions that could be implemented in the home, for example. In this context, the so-called "innovation-needs paradox" is also mentioned (ibid.). This suggests that older people in our society could benefit the most from new technologies, but are the least likely to use them. The difference in the use of such services between different age groups is also referred to as the "age gap" (ibid.). In this context, further problems for the use of age-appropriate systems in the home were identified. For example, AAL workshops held in Hesse revealed that in some cases there are ethical concerns about the use of such systems (ibid., p.13). At the same time, even promoters and mediators do not have a sufficiently comprehensive knowledge of new AAL technologies (ibid.). The UNECE also describes aspects such as "monitoring" and the associated data protection as crucial when using intelligent technologies in the home. The use and storage of the data collected would need to be clearly agreed with users, as "Older people are

open to this technology in their own homes if there is a tangible benefit and the data is adequately protected" (UNECE, 2020, p.9).

At the level of municipalities or cities, it is noticeable that Germany is still in the early stages of politically driven large-scale implementation of age-friendly structures in the core areas of housing, social participation and transport. For example, large cities such as Hamburg have recently declared their intention to become more age-friendly in the future and to develop a concept for this (Meyer-Wellmann, 2022), which at the same time shows that the issue is already known but has not yet been sufficiently addressed in the last years.

Recommendations for action and initial studies have been available in Germany for more than 10 years, and the federal government regularly publishes reports on ageing, but Germany is clearly lagging behind in terms of age-friendliness. The fact that older retired people were excluded from the federal government's energy flat rate of €300 in 2022 and that a relief package for them was only put together as a result of public pressure (Gottschalk, 2023) also shows that too little attention is currently paid to the needs and problems of this target group. Furthermore, despite Germany's high population density, only three cities are currently part of the network of Age Friendly Cities (WHO, 2023).

According to the Berlin Institute for Population and Development (BIfBE, 2021, p.2), the responsibility for creating an age-friendly environment lies primarily with the municipalities, as they have the greatest and most direct influence on the living environment of their inhabitants. However, these objectives and responsibilities are closely linked to urban and transport planning, which is complicated by the dynamics of the housing market and the scarcity of urban land. At the political level, the issue is repeatedly addressed in publications and position papers, but ultimately the task of implementation lies with the municipalities, which find themselves underfunded and insufficiently supported in the task of age-appropriate and at the same time climate-conscious urban planning (BTU Cottbus, 2021, p.18).

However, individual cities with sufficient resources, such as the city of Münster, Germany, are now tackling the task head on by joining the WHO network and have now developed a strategic plan for 2022-2025. Within this document, three core areas have been formulated that coincide with the previously mentioned key points of age-friendly urban planning:

- Housing, security of supply and neighbourhood care.
- Strengthening mobility for older and physically impaired people
- Supporting digitalisation (City of Münster, 2022, p.1)

Eco-friendly principles in Germany

In the area of climate-friendly structures, there are various possibilities for citizens to act, at least at the level of their own homes and private consumption decisions. For example, people can save energy by equipping their homes with intelligent heating and energy meters or reducing their meat consumption. Citizens can also save CO₂ by changing their mobility behaviour, for example, by using public transport more (see NABU, 2023). This information can also be found in various

guides and information from government institutions such as the Federal Environment Agency or the Federal Ministry for the Environment (BMU, 2023). There is also a wide range of publications and sources of information on how consumers can influence environmental performance from political institutions at the state and federal level, as well as from universities (KWI Essen, 2011; NABU, 2023; Dirks, 2010; BMU, 2021b). On the scientific side, a large number of studies and other guidelines and information are therefore available.

In this context, it should be mentioned that the protection of the environment is important to the older generations in Germany and that this age group is also largely aware of the urgency of the problem and their own responsibility. In a survey conducted in 2021 by the Ministry for the Environment and Consumer Protection, 56% of respondents over 65 agreed with the statements: "It is man's duty to protect nature" and "We may only use nature in such a way that this is also possible for future generations to the same extent (BMU, 2021b, p.63). A study by pollityx research GmbH also attests that a large proportion of older people are highly aware of the problem of climate change as a social task, in that they are already reducing many lifestyle behaviours such as their own meat consumption (cf. pollityx, 2021, p.11-14). Many older people also emphasise that they are not satisfied with the government in this area, as more needs to be done actively to combat the climate crisis (ibid., p.14).

There are already certain offers that are supported by the state to make one's own living environment more eco-friendly. For example, citizens can discuss the energetic renovation of their own residential building with the help of energy experts. This offer is recognised and supported by the state in that the costs for the concept and certain measures can be subsidised by the state. Together with energy advisors, so-called individual renovation roadmaps are drawn up, which show how one's own home can be renovated step by step in terms of energy efficiency (Verbraucherzentrale, 2023b). These plans also describe which measures are possible and which savings potentials are linked to them. In addition, an estimate is given of how expensive certain measures will be and which subsidies can be applied for (ibid.). Energy-efficient renovation and the creation of a roadmap is not necessarily inexpensive, but it is nevertheless an offer from the state to redesign one's own living environment according to eco-friendly principles. In addition, there are already a number of smart, energy-saving and supporting household appliances on the market. For example, lamps or household appliances can be controlled via smart applications, and energy can be saved at home through smart electricity meters and near real-time monitoring. However, older citizens do not sufficiently use these applications, although there is a positive trend in the number of users (Bitkom, 2022). In addition, most German cities now have various urban gardening projects where people of all ages can get active to make their own environment more eco-friendly. The non-profit organisation Anstiftung provides an online map with an overview of the different offers in all major cities (Anstiftung, 2023).

With regard to implementing climate-friendly principles in Germany, many structural problems still make it difficult to implement them on a broad scale at local level. Some of these can already be seen in the current climate protection programme of the governing parties. In the housing sector, it is already recognised that all citizens must be able to afford energy-efficient housing. However, the housing market in German urban centres is very tight and the supply of affordable housing is therefore rather low. In addition, the construction industry and trades in Germany

currently have very limited capacity, making a rapid and comprehensive renovation of the building stock even more unlikely. There is also a high demand for new construction due to climate policy building targets, which is why policy interventions in the market risk having a counterproductive effect on existing climate protection targets (cf. BMF, 2021, p.50-51).

The German Federal Environment Agency (Umweltbundesamt) also identifies a number of problems that explain why climate protection in German cities is not yet as advanced as it should be in many places. On the one hand, climate protection laws are not sufficiently translated into specific laws, so that the implementation of climate goals and projects at the municipal level is mostly based on voluntary action (Umweltbundesamt, 2023b). Moreover, in many places there is a lack of extended powers and responsibilities, so that the potential for savings at the municipal level is not fully exploited. Furthermore, in many places there is simply a lack of technical know-how to implement project plans with legal certainty. Finally, the Federal Environment Agency notes that the increased personnel costs in municipalities due to climate protection targets have not yet been fully compensated for, which means that new personnel regulations will have to be borne and financed by the municipalities themselves (Federal Environment Agency, 2023). This is in line with estimates by the German Trade Union Confederation (DGB). According to its findings, the considerable investment backlog and the aforementioned lack of personnel structures and legal powers on the part of the municipalities are major problems in implementing eco-friendly measures and principles (DGB, 2023).

Nevertheless, it is clear that a lot has happened in Germany in recent years, at least in terms of visibility and initial action. This can also be seen in the fact that owners are now increasingly encouraged to provide renewable energy for residential buildings and will be legally obliged to do so in the future. For example, the amendment to the Building Energy Act stipulates that from January 2024 every new heating system must be supplied with at least 65% renewable energy (Federal Ministry of Housing, 2023b; Haufe, 2023). In the same context, there are also certain obligations for homeowners to make changes or adaptations, so educating older adults about these new regulations is also necessary.

Many cities, especially larger ones, already have climate protection programmes that include the climate protection targets set by the federal government or even their own higher targets (e.g. City of Cologne, 2021; Berliner Abgeordnetenhaus, 2023). Some cities have already declared a "climate emergency", partly in response to public pressure, and together with other municipalities have set themselves the goal of climate neutrality by 2030 (Klimabündnis, 2023). The participating municipalities have recognised that the federal government's climate protection targets are insufficient to avert the impending climate crisis. It is already clear here that the cities, which are also the main implementers in the area of age-friendly structures, are taking the reins in the area of climate protection into their own hands as far as possible. This positive development is also reflected in the fact that nine German cities, namely Mannheim, Munich, Frankfurt am Main, Leipzig, Dortmund, Dresden, Münster, Aachen and Heidelberg, are participating in the European Union's "net zero cities" mission (European Commission, 2023). As part of the "Mission Cities" of the Horizon Europe programme, the selected municipalities from all over Europe will be supported with €360 million in the period 2022-2023 to initiate important innovation and transformation processes in the sense of climate neutrality of the cities (ibid.). According to the study by the TU

Cottbus, such financial and knowledge-based support networks are crucial for the implementation of municipal policy goals such as age equality or climate protection.

Analysis

Age-friendly principles

As mentioned in the previous section, the presence of technological and digital literacy impacts the adoption of age-friendly solutions in the home. For example, according to the UNECE assessments mentioned above, services need to provide a clear benefit to older people while taking into account the security of the data collected. As already described, there is a strong "age gap" in Germany with regard to the use of digital devices, which on the one hand makes the implementation and operation of smart home or AAL solutions more difficult and on the other hand fuels reservations and fears regarding the use of these technologies (ifib, 2022, p.8).

A survey conducted by the Bikom association in 2022 found that fear of hacking, fear of misuse of personal data and fear of privacy are still the three main reasons why the German population does not use smart home devices (Bitkom Research, 2022, p.10). This is also reflected in current figures on the use of smart home applications. For example, 43% of 16-29 year olds and even 49% of 50-64 year olds already use smart home applications in their own households, while by 2021 this will only apply to 13% of the 65+ age group (BifBE, 2021, p.4). However, according to Bitkom, this figure will increase by a further 5 percentage points to 18% in 2022 (Bitkom, 2022). It should also be noted that the 65+ age group has significantly lower general digital skills than the German average (D21, 2022, p.10), which means that even more affordable digital aids such as reminder functions, navigation apps or sensor apps, e.g. for monitoring one's own health data, are not yet sufficiently used.

In addition to digital assistive systems in the home, financial factors also play a role in making the home environment age-friendly. The German Federal Ministry of Housing, for example, states that only 1.5% of German homes are equipped with barrier-free access, resulting in a "supply gap of more than 2 million homes for people with mobility impairments" (Federal Ministry of Housing, 2023). The University of The Hague was able to identify several key areas of life and influencing factors for the population of The Hague. These include the core areas of social participation and housing mentioned above. In addition, recent studies on the age-friendliness of cities include the factors of financial situation and family values, with the individual assessment of the financial situation playing a major role in the evaluation of age-friendly structures (van Hoof et al., 2022, p.8; BAGSO, 2022, p.27). This is in line with the findings of the Ifib and D21 studies conducted in Germany, which locate the described "innovation-needs-paradox" in the area of age-friendly technologies primarily among older people with low income and education levels (Ifib, 2022, p.9 & Initiative D21, 2022).

Eco-friendly principles

In 2021, the Berlin-based political research institute pollytix published a study on the adaptation of climate-friendly measures and structures, which was conducted in the form of quantitative surveys and qualitative in-depth interviews. They also conducted a cluster analysis to categorise the different demographic groups (see Figure 4).

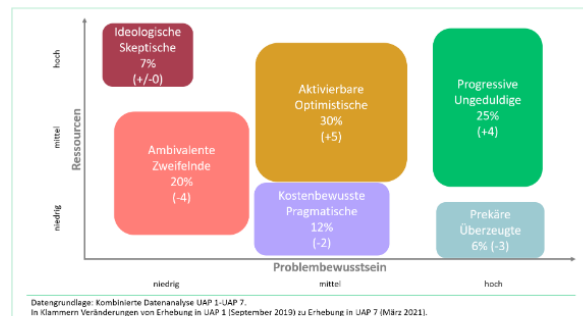


Abbildung 1: Klimabewusstseins- und Ansprachesegmente.

Figure 4: Results from Cluster Analysis regarding problem awareness of climate change; Source: pollytix 2021, p.6

The groups in which older people were most represented in percentage terms were the ideologically sceptical group (7% in total), the 'activable optimists' group (30% in total) and the 'progressively impatient' group (25%). Within the group of the ideologically sceptical, 52% are over 60 years old, but they are mostly "wealthy, older men" (pollytix, 2021, p.6) (ibid.).

According to Pollytix, the defined 'stress factors' (ibid.) such as financial pressure, worries about the future and time-related stress hardly play a role here. Rather, within this group, trust in politics and its ability to act is very low, which is why climate policy efforts are seen as risky for the country (ibid., p.7). Within the group of activable optimists, 43% of people are over 60 years old, with equal proportions of both sexes. Within this group, fears about the future play a more important role. Nevertheless, this group continues to have faith in political action and the usefulness of measures, which means that they are prepared "to accept individual additional burdens [...] to a certain extent" (ibid., p.11).

The majority of 'progressively impatient' respondents are also senior citizens and are characterised by increasing concern about the future. Despite having a fairly average middle income, this group is very aware of the problem of climate change and is therefore in favour of action and investment in this area. Within this group, too, there is still trust in politics, but the group also places high demands on those who act politically (ibid., p.13-14). At least according to this study on the German population's acceptance of climate protection, trust in the ability of German politicians to act seems to play an important role in determining how far people in Germany will go with the implementation of climate-friendly structures, alongside their own financial situation and fears about the future. This is also consistent with the above-mentioned data on responsibility towards nature, in which older people indicate a similar assessment of the problem as middle-aged or younger age groups (cf. BMU, 2021).

Gaps and challenges

Based on the literature reviewed, it is not really possible to identify an information gap in Germany. There are publications by various actors such as federal ministries, organisations such as BAGSO or scientific institutions such as the Robert Koch Institute on the topic of age-friendly urban design and related objectives. There are also numerous websites and guides with tips for

older people, e.g. , making one's own home age-friendly at low cost and applying for certain subsidies for conversion measures or technical aids (Röder, 2023). Rather, the problem in Germany is how to translate the goals of age-friendly planning from the municipal perspective into implementation, as shown, for example, in the study by the University of Cottbus mentioned above. In Germany, there are individual cities and/or city initiatives that are addressing the issue of age-friendly urban design (e.g. City of Münster, 2022), but according to the available literature, this is still far from being done sufficiently or even comprehensively.

As has already become clear in the previous sections, there are also some significant obstacles to the widespread implementation of age- and climate-friendly structures in cities as well as in the homes of older adults. From a German perspective, this is partly due to an educational gap in the training of older people in the use of technical devices - keyword: digital divide - as well as in the use of technical AAL assistance systems, in order to overcome the above-mentioned paradox of innovation and need. A ray of hope in this context is that the use of smart home applications in Germany as a whole will increase by more than 10% between 2018 and 2020 (BifBE, 2021, p.4).

This gives rise to the hope that the use of such technical solutions will become widely embedded in society, which will inevitably bring older people into more frequent contact with them and reduce reservations. However, the BifBE also notes that municipalities and their administrations themselves need to make better use of the potential of digitalisation to become more age-friendly. For example, navigation systems that show nearby places to sit down, shopping facilities or important authorities in the immediate vicinity are conceivable (BifBE, 2021, p.3). With regard to the implementation of climate-friendly structures, the information available is already large and comprehensive, so that older people can also obtain the information they need to design their own living environment. There are also some opportunities, such as urban gardening projects, to act within one's own community. The problems of implementation at local level are mainly due to the legal ambiguity regarding the implementation of climate protection targets. Although the federal government has set clear targets, many cities and municipalities are unable to meet them because they lack the financial, technical and human resources to do so. In addition, the very cities that are now more in demand as attractive places to live, including for older people, are having problems restructuring or developing new urban areas. Rising construction costs and tight budgets, especially in eastern Germany, make nationwide implementation even more difficult.

Needs and requirements of older adults

On the side of age- and climate-friendly structures, the level of digital literacy of older adults is mentioned as a problem. According to the current German Digital Index, 73% of younger people, but only 21% of older people, benefit from digitalisation (D21, 2022, p.10). This is also reflected in the Digital Competence Index, where the German average now stands at 60 points, while the group of 65-year-olds has significantly lower skills at 41 points (ibid.). This is also reflected in the fact that only 18% of people aged 65 and over use smart home technologies (Bitkom, 2022). However, a press release from Bitkom also shows that this figure has already tripled in Germany since 2018 (Bitkom, 2022). This means that there is a learning potential for older adults in terms of digital skills and knowledge about the many potential benefits of technical assistance systems

in the home, as well as how, for example, their own data protection can continue to be guaranteed. This is underlined by the fact that 88% of those surveyed by Bitkom agreed with the statement: "The potential of smart home applications for the climate must be better promoted" (Bitkom Research, 2022, p.6).

This also applies to support services such as housing advice for conversion or neighbourhood support services. Although these services exist and it is possible to obtain information, it requires some personal initiative. For example, several intermediate steps are required to obtain a low-interest loan or a grant from the KfW development bank through a housing counselling service. This service is already age-friendly, as state-supported agencies and organisations assist older people. However, it is not yet clear to what extent all those in need of help are being reached by current provision. According to the most recent evaluation of the KfW Bank's support programme, a total of more than 440,000 housing units were supported between 2009 and 2018 (Institut Wohnen und Umwelt, 2020, p.18).

Add to this the fact that only 1.5% of German dwellings are barrier-free (BMWSB 2023), and it can be assumed that by far not all people who would need conversion measures have been or can be reached by the current offer. It would be important to determine the respondents' knowledge of such support services within the interviews in order to determine the final learning focus of the content, as no current data or studies are available on the level of knowledge about such support services. However, there are various (also digital) guides and established health magazines in the senior customer segment, such as Apotheken-Umschau, which also deal with topics such as home conversion or adaptation (Birkelbach, 2019). Nevertheless, based on the overall impression and the data on media preferences (TV, radio, newspapers & magazines) of the 65+ age group, it can be assumed that the information on age- and environment-friendly solutions for everyday life needs to be further expanded or tailored to the target group in order to emphasise or explain the advantages, e.g. technical assistance solutions or subsidy processes and application procedures.

Examples

Housing Counselling (age-friendly)

As described above, there are already counselling services in Germany that act as a support structure for mobility-impaired or older citizens. Housing counselling services exist in all federal states. The counselling service is provided by various providers such as welfare organisations, care centres or senior support centres (Slavici, 2022, p.140). The aim is to support people who see a need for age-appropriate and barrier-free conversion of their own home. Possible conversions, housing alternatives and subsequent financing options are to be discussed with the target group and they are to be supported in the conversion of their home. The service is aimed primarily at people with reduced mobility and older people who want to make their own home accessible and suitable for their age. However, they may not have the necessary financial resources or are unaware of the various funding options. The target group is therefore primarily people with limited mobility, of whom about 90% are senior citizens according to data from the KfW Bank (Institut für Wohnen und Umwelt, 2018, p.120). Even though housing counselling services are already available in all German regions, they do not have to be designed similarly. They are usually

funded by state subsidies and various organisations from the non-profit sector are involved in providing the services (Slavici, 2022, p.139-140). These include, for example, the German Red Cross, social organisations or associations that deal with the issue of age and needs-based conversion. At the same time, there is also direct housing advice from individual private providers that consumers can use. Anyone who wants to work as a housing counsellor must first undergo training to become certified (BAG Wohnungsanpassung, 2023).

Balcony Power Stations (eco-friendly)

Although photovoltaic systems are no longer a new technology, it has become increasingly easy in recent years to produce one's own electricity with these products. The government has encouraged these services, which has decided to exempt them from VAT from 2023. This technical support is also available nationwide, as it is a private-sector offer. This means that there are certain initial costs (from €350 for small appliances), but these can be recouped after a few years, depending on placement and location (Verbraucherzentrale, 2023; Solarwatt, 2023). In addition, such devices are now subsidised by some bodies, such as individual municipalities and federal states in Germany, and supported by grid operators and electricity suppliers, which makes their purchase and use even easier. Depending on the source, values of 300-500 Watts and annual savings of 60-80 € are given for the performance of the devices (Balkon-Kraftwerk, 2023; Solarwatt, 2023; Verbraucherzentrale, 2023). At the same time as the cost savings, there is also a certain CO₂ saving. Calculated over 20 years, this is estimated at around 2.5 tonnes of CO₂ (Verbraucherzentrale, 2023).

Education

With regard to climate protection in education, there are already various project initiatives, such as the project "Understanding Climate Change and Taking Action", which are concerned with increasing the topic's coverage in German schools' curricula. There is also freely available learning content from organisations such as Greenpeace or the German Education Server (see DIPF - Deutscher Bildungsserver, 2023). A study commissioned by the German Federal Ministry for the Environment examined the extent to which various climate policy issues are already covered in the education system. It was found that the topic is dealt with differently in the individual federal states, but that all important subcategories are included in the curricula (BMU, 2021). However, the topic is "hardly anchored" in teacher training. Similarly, the topic is not yet sufficiently represented in vocational training. Teachers lack "time resources, appropriate teaching materials and knowledge" (ibid.).

In adult education, the topic is not yet sufficiently represented in the sense that although there is a large amount of freely available information on climate protection, it is mainly available online or in specialist literature, while there is a lack of learning opportunities adapted to the needs of older adults. German experts also note this in relation to adult education: "the range of offers does not correspond to the social importance and media presence of the topic" (Götz & Müller,

2021, p.12). In addition, they formulate some conceptual ideas on how the subject area could be addressed in a target group-oriented way. For example, it could be helpful to generate topics based on the areas that most directly affect the population (ibid, p.13).

For our project, these could be: how to save energy, how to finance and carry out insulation in one's own home, what subsidies are available for heating and home adaptations, or how to reduce CO2 emissions in our daily routines, etc. The experts also recommend cooperating with different civil society organisations to place the topic as learning content in joint projects such as workshops (ibid.). At the same time, facilitators need to have a broad and secure knowledge of eco-friendly structures as well as practical knowledge of age-friendly technical aids, so that the most important content can be conveyed safely, the everyday benefits of aid systems can be clearly highlighted and reservations and gaps in knowledge can be eliminated.

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