Interreg Baltic Sea Region

Co-funded by the European Union

RESILIENT ECONOMIES AND COMMUNITIES
SmartAging

SmartAging Project

Senior Needs Report:
Mapping Priorities Across the Baltic Sea Region

Deliverable 1.1

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1. Introduction

Purpose and Scope of the report

The purpose of this report is to comprehensively document the specific needs and preferences of senior citizens across the different regions and partner countries participating in the SmartAging project. It forms the foundational basis for the development of future prototypes and service models by ensuring that all subsequent solutions are rooted in real-world user experiences.
The scope of this report includes gathering quantitative and qualitative data from a wide range of stakeholders, including seniors, healthcare providers, municipalities, and senior associations through structured workshops, interviews and surveys conducted in each partner country. The aim is to identify the most critical challenges faced by older adults in their daily lives, including aspects related to health, safety, social participation, and the built environment.
This report consists of two integrated components:

1. A detailed written report summarizing the findings.
2. A graphical "Senior Needs Map" that visually illustrates the shared and unique needs

This needs assessment plays a foundational role in the SmartAging project. As the first step in Work Package 1, it ensures that all innovation activities to follow are firmly grounded in user-centered evidence. The findings from this deliverable will directly inform the technology and service mapping in D1.2 and support the co-creation of effective, inclusive smart living solutions throughout the project. It helps to ensure that SmartAging addresses the real challenges of aging, not just perceived gaps, and builds resilient, scalable outcomes for diverse communities.

Context: Countries Involved and Social Services for Seniors

The SmartAging project brings together four countries, **Finland, Sweden, Germany** and **Poland**, each with its own unique landscape of elderly care and housing services. The consortium includes partners with complementary expertise: *Satakunta University of Applied Sciences (SAMK)* and *Ikigaia Ltd.* from Finland, *Interesting Times Gang AB* from Sweden, *Albertinen Haus – Centre for Geriatrics and Gerontology* from Germany, and *Poznań University* from Poland. Together, they contribute regional knowledge, sectoral insight, and professional networks to support a user-centered, transnational approach to aging and wellness.

To ensure a manageable and meaningful scope, the consortium made a strategic decision to focus specifically on **assisted living facilities** as a common reference point for this project. Given the diversity of social service structures across partner countries and the overall scale and timeframe of the SmartAging project, narrowing the focus was essential for achieving depth, clarity, and comparability in the findings. This also required partners to define what *assisted living* means within their national context, acknowledging that the term carries different legal, institutional, and practical interpretations in each country. At the same time, data collection was intentionally inclusive, involving a broad spectrum of seniors, not only those currently living in assisted facilities. This approach ensured that the findings reflect the views, expectations, and challenges experienced by older adults across various living situations, contributing to a more holistic understanding of aging and supporting the development of adaptable, user-centered solutions. Further, understanding the local systems is essential to interpreting stakeholder needs and ensuring that proposed solutions are feasible, relevant, and scalable across different contexts.

Finland

In Finland, assisted living services fall under the broader category of housing services (palveluasuminen), governed by the Social Welfare Act (Sosiaalihuoltolaki 1301/2014). These services are divided into three legal categories:

- Supported housing (tuettu asuminen): Independent living with minimal support and social guidance. Typically for individuals transitioning to or maintaining independence.
- Communal housing (yhteisöllinen asuminen): Housing that fosters social interaction and includes support services, intended for people with reduced functional capacity.
- 24-hour assisted living (ympärivuorokautinen palveluasuminen): Full-time care in a residential setting. This includes accommodation, meals, cleaning, personal care, and around-the-clock assistance from professional staff. It is for individuals with continuous or complex care needs that cannot be met by home care.

Assisted living services in Finland are provided by both:

- Public welfare regions (*wellbeing services counties*, established in 2023), and
- Private service providers, which operate under municipal or regional contracts or independently.

Eligibility assessments are conducted by public social services. If a resident is placed in private housing via the welfare region, it must meet public quality and pricing standards. Clients pay

income-based service fees and separate rent. Since 2023, Finland's 21 self-governing welfare regions (counties) have been responsible for organizing all publicly funded social and health services, including assisted living. These regions are state-funded and ensure equal access to: Primary and specialized healthcare, social services (child welfare, disability, elderly services), Mental health and substance abuse care, Emergency and rescue services. This centralized model aims to reduce regional disparities and control rising costs, while ensuring services are available regardless of where one lives. Helsinki and the autonomous Åland region manage their own systems separately.

Sweden

In Sweden, three key housing categories are commonly used when referring to housing for older adults:

- Special housing (Särskilt boende): This is the only housing form that includes care and services. It is needs-assessed and granted by the municipality and includes forms such as dementia care and somatic care housing.
- Safety housing (Trygghetsboende): Housing targeted at older adults, usually aged 70+, that is not needs-assessed. It is regulated by law and aims to provide a secure and accessible living environment with opportunities for social interaction and optional services.
- Senior housing (Seniorboende): A market-driven housing form that targets older adults (typically 55+ or 65+). It is not legally regulated, and residents live independently, often without staff on-site or care services included.

Swedish elderly care is highly decentralized and managed by the municipalities, based on the Social Services Act (SoL). Municipalities are responsible for assessing needs and providing care and housing services. The model emphasizes aging in place, preventive care, and maintaining independence as long as possible. There is variation in access and type of services depending on the municipality.

Germany (Hamburg)

In Germany, housing forms and care services for the elderly are not defined uniformly at the national level but are governed by the individual federal states (Bundesländer). The SmartAging project focuses on Hamburg, where assisted living facilities (Service-Wohnen) are defined and

regulated by the Hamburg Act to Promote the Quality of Housing and Care for Elderly, Disabled, and People in Need of Support.
These facilities typically provide: Barrier-free apartments for individuals aged 60+, Basic services such as contact persons, emergency response systems, help in crisis situations, and support for participation in social life, Optional additional services like personal care or cleaning, which are not part of the basic offering, A mandatory basic service contract that defines the core services offered, which is legally tied to the rental agreement.
Subsidized housing and financial support options are available for seniors with low income through housing benefits or coverage of rent and service costs by the Social Welfare Office. The focus is on promoting independence and autonomy with access to essential support.

Poland

In Poland, the concept of assisted living facilities is not yet well defined. While the country lacks a developed Senior Living sector, some initial private investments in senior housing with optional services have begun to emerge.
Currently, care and housing options for older adults include:

- Public social welfare homes (Domy Pomocy Społecznej, DPS) that provide 24-hour care
- Private care facilities, which dominate the market and offer 24-hour services, often for high costs

Poland does not have a nationally coordinated strategy for assisted living. Existing models are small-scale or experimental and typically serve a niche population. Cultural norms, economic limitations, and limited awareness have led to low demand for institutional or community-based housing options among current generations of seniors. However, trends suggest a growing interest in activating, socially oriented, and semi-independent housing models, especially among the upcoming generation of older adults who will have different expectations around quality of life, privacy, and independence.

2. Methodology

In this section we explain the tools, data collection methods, and the countries who participated in this project.

2.1. Data collection and preprocessing

The SmartAging Need Mapping Questionnaire was co-designed during the project's official kick-off meeting on 14 April 2025 in Pori, Finland. This full-day event, hosted by Satakunta University of Applied Sciences (SAMK) at the Kokeilimo and Peliselli facilities, brought together representatives from all project partner countries: *Satakunta University of Applied Sciences (SAMK)* and *Ikigaia Ltd.* from Finland, *Interesting Times Gang AB* from Sweden, *Albertinen Haus* from Germany, and *Poznań University* from Poland. Through a series of design-thinking workshops focused on assisted living environments, participants collaboratively identified and prioritized the key thematic areas for exploration, including daily life challenges & activities, accident and risk zones, infection control and hygiene, emotional well-being & quality of life themes were then translated into structured questionnaire items that formed the basis for national-level data collection.

The data collection process took place between mid-April and mid-June 2025, following the project's kick-off meeting. Each project partner adapted and implemented the questionnaire to fit their local context and stakeholder landscape. A mix of qualitative and quantitative tools was used across the consortium to collect data from a wide range of participants, including seniors, care professionals, designers, and policy experts. Surveys are the core tool for collecting perspectives on the lived experience of aging, risks in the built environment, care services, and expectations for future assisted living solutions. In total, over 537 individuals took part in the data collection activities.

Alongside surveys, expert interviews and focus groups were conducted to enrich the findings with deeper insights. These included semi-structured interviews with social workers, designers, healthcare professionals, and care sector innovators. A focus group session was held in Germany, engaging assisted living residents in guided discussions around the questionnaire's core themes such as daily challenges, emotional well-being, interior design and environmental needs. In some cases, expert workshops were organized (e.g. a workshop in Hamburg in collaboration with Kuratorium Deutsche Altershilfe) and symposia attended to gather multi-stakeholder input addressing digital participation, neighborhood co-care models, and accessibility.

To complement primary data collection, all partners conducted literature reviews at the national level. These reviews incorporated academic research, government reports, and policy summaries, including contributions such as the Socialstyrelsen report from Sweden and analyses of service systems in Germany, Finland and Poland. The literature helped contextualize local findings and align them with broader care trends and housing models. Literature review included: Germany (11) studies, Finland (Ikigaia 5 and SAMK 37) studies, Poland (1) study, and Sweden (14) studies. Participants across the project included both seniors living in assisted facilities or in their own homes, and professionals from eldercare, design, policy, and health sectors. The most extensive participation came from Poland, with 400 completed responses, followed by Germany (109), Finland (26), and Sweden (2). This diversity allowed the project to capture a rich and transnationally comparable dataset, while also highlighting country-specific nuances in needs and service expectations.

We collected our data through questionnaires, interviews, a focus group and literature reviews. To present the results for the eight main categories, we combined the values obtained from all these sources. Since the values varied greatly, we applied normalization to scale the data between 0 and 1 for each country and category. To calculate the proportion of key factors within each category, we divided the value for each factor by the total sum of values for that specific category. To calculate the proportion of categories within each country, we summed the values of all categories for that country and divided the value of each individual category by that total.

2.2. Applied tools and category extraction

To extract the main categories and their key factors from the questionnaires with multiple-choice options, we used the choices selected by each country. While the options were mostly similar across countries, there were some differences; therefore, we carefully reviewed the entire dataset manually to ensure consistency. For the open-ended responses, interviews, and literature reviews, instead of using automated keyword extraction (e.g., via Python), we opted for manual close reading. We identified relevant factors based on content, their alignment with each category's focus, and by comparing responses across countries to ensure that each subcategory (factor) captured common themes.

Given the wide variety of themes and the differing perspectives of seniors and experts, we also included an "Other" category within some main categories. This will be explained in more detail

in the next section. After extracting the categories and key factors, we used Python to aggregate data from various sources for each country, normalize the values, and visualize the results.

2.3. Limitation of the study

Like any study, ours has limitations. In particular, the process of coding and categorizing open-ended responses may reflect some degree of subjectivity. Therefore, the categories we defined may not perfectly align with existing frameworks in the field. This is an area that could be refined in future research. As the survey questions were adapted in each country, cross-national comparability is somewhat limited. Additionally, the literature review was not conducted systematically, which affects the comprehensiveness of the identified challenges. In most countries (except Poland), the number of senior participants was limited, thereby hindering the generalizability of the results.

3. Results

In this section, we visualize the data collected for each country in relation to the eight main categories and their associated key factors and compare the results across countries. First, we reviewed the questionnaires, interview responses, and literature related to the eight main categories for each country, as shown in Figure 3.1.

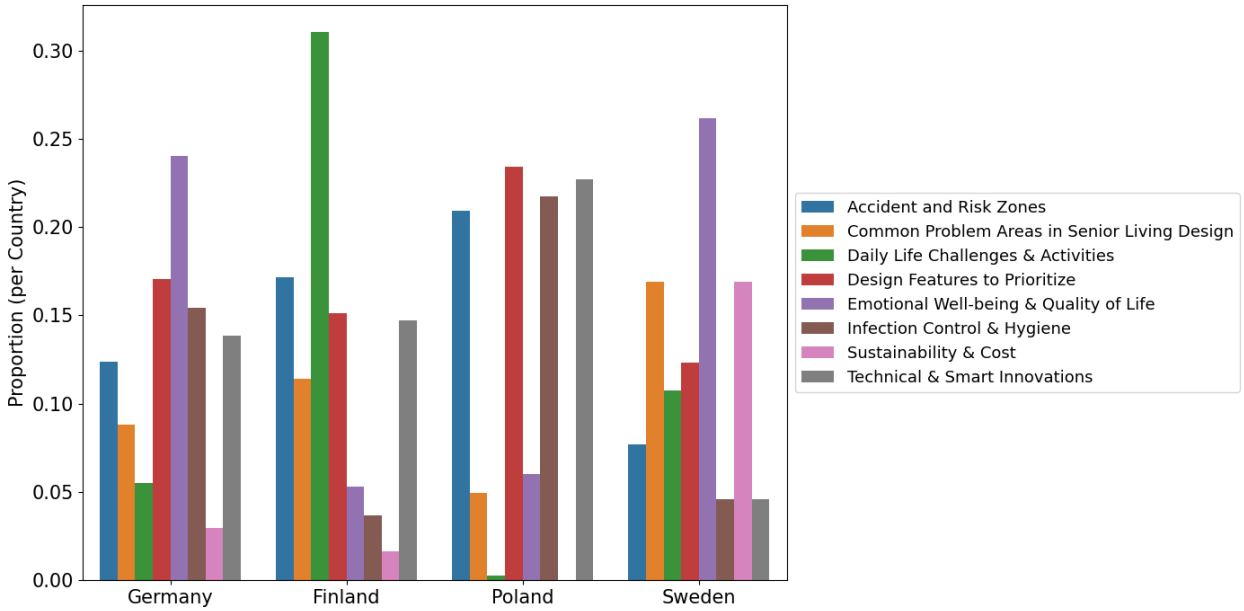


Figure 3.1. Eight main categories for each country.

As shown in the plot, the most frequently mentioned category of seniors' problems in Finland is "Daily Life Challenges & Activities." In Sweden, the highest concern is "Emotional Well-being & Quality of Life," which is also the most prominent issue in Germany. In Poland, the most frequently mentioned category is again "Design Features to Prioritize."
."

In the second step, we examine the key factors within each category to explore the challenges in more detail and compare the values across countries.

3.1. Daily life challenges & activities

As shown in Figure 3.2, "Mobility and Transfer" appears to be the most significant challenge in everyday life across all countries, followed by "Cognitive Constitution", which is one of the main challenges in Sweden; "Isolation and Loneliness" in Poland; and "Independence and Privacy" in Germany. As the plot indicates, some countries had no mentions or data available for certain subcategories.

Since the responses in the “Other” category are quite diverse, we highlight only a few recurring themes that are either common across countries or mentioned more frequently. For example, the “Other” category includes themes such as “sensory and emotional problems” in Sweden; “house chores/cleaning, lack of time, food issues, dressing, healthcare” in Finland; and in Germany, topics like “dealing with hearing and visual impairments, avoiding noise (e.g., from clocks), various everyday barriers (mentioned by several respondents), not feeling like a fully-fledged person, staying up to date, road traffic, shopping, forgetfulness, dizziness, depression, cleaning, and limited local supply.”

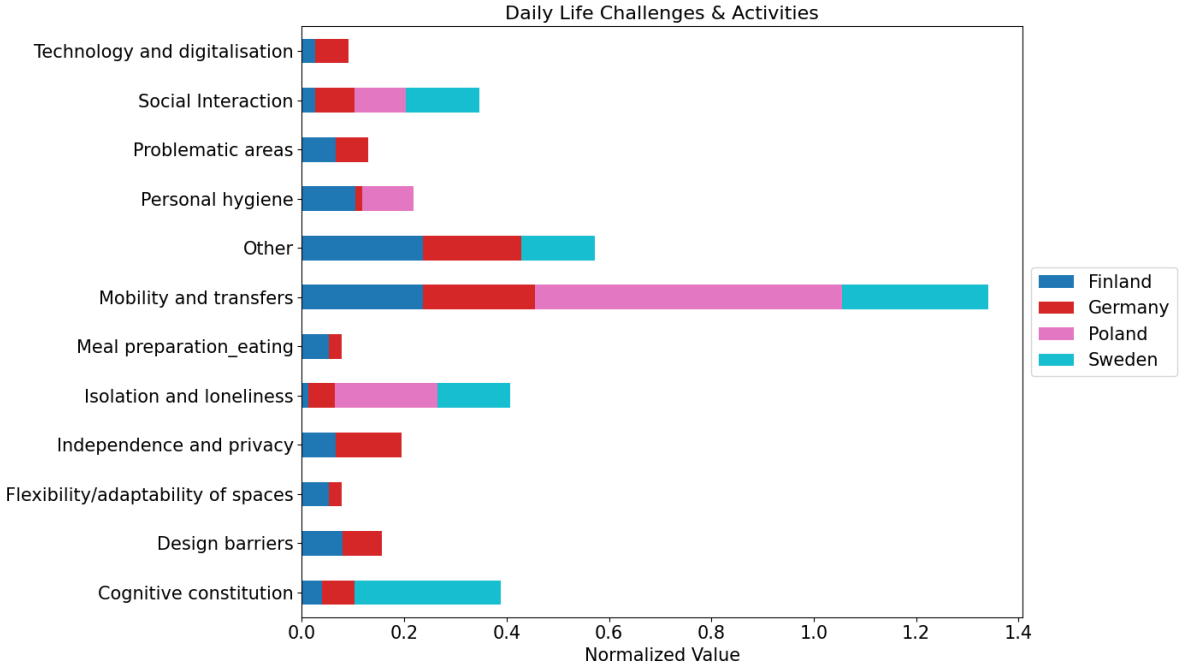


Figure 3.2. Key factors of daily life challenges.

3.2. Accident and risk zones

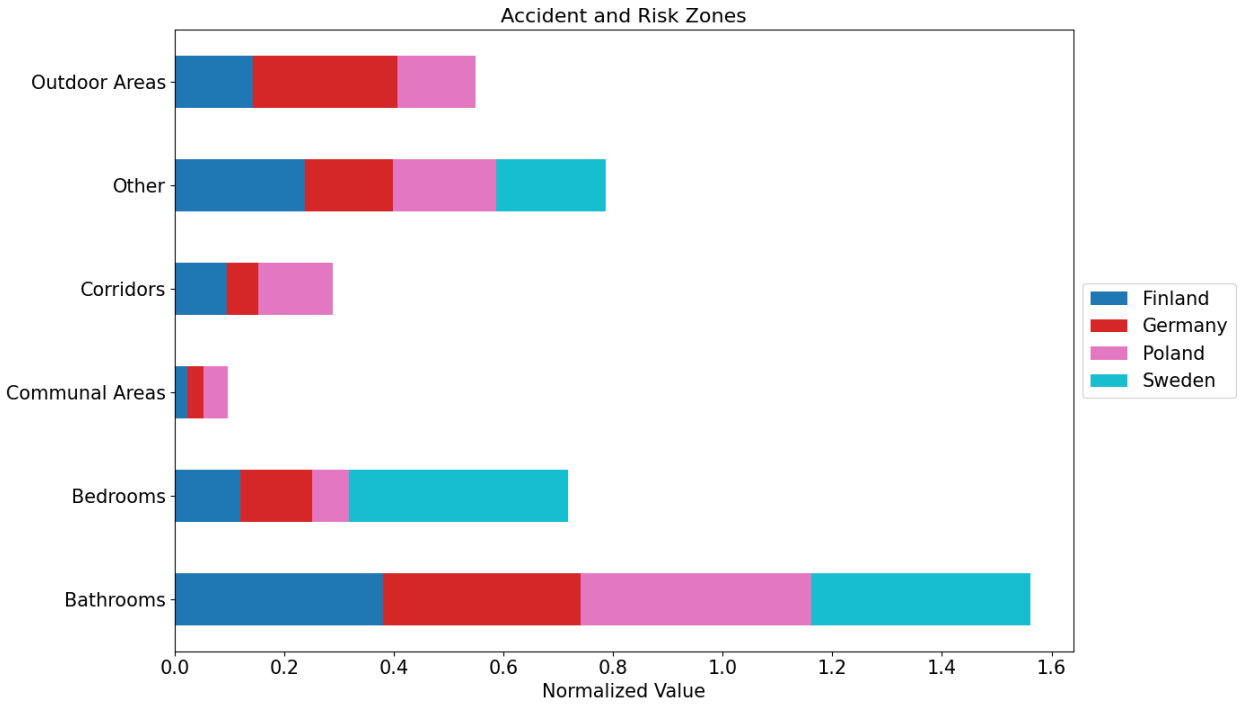


Figure 3.3. Key factors of accidental zones.

As shown in Figure 3.3, the majority of responses identified bathrooms as the highest-risk area for accidents. For bedrooms, Sweden had the highest number of responses, while corridors were considered most dangerous in Poland, and outdoor areas in Germany. Communal areas, on the other hand, were seen as the least risky in terms of accidents.

Examples of "Other" subcategory include "choosing colors in different indoor environments, lighting, acoustics, material choices, and design principles" in Sweden; "kitchens, stairs, entrance to public transport vehicles, public transport, and working in a job position" in Poland; "uneven flooring, cluttered environments, safe residential environments, uneven terrain, poor lighting, inaccessible building entrances, loss of balance, installation of safety aids, non-barrier-free saunas, and slippery stairs in winter" in Finland; "weather-related influences such as ice, snow, and wet

walkways, slippery floors, uncontrolled use of electrical appliances, poor lighting, closely placed furniture, and staircases" in Germany.

3.3. Infection control and hygiene

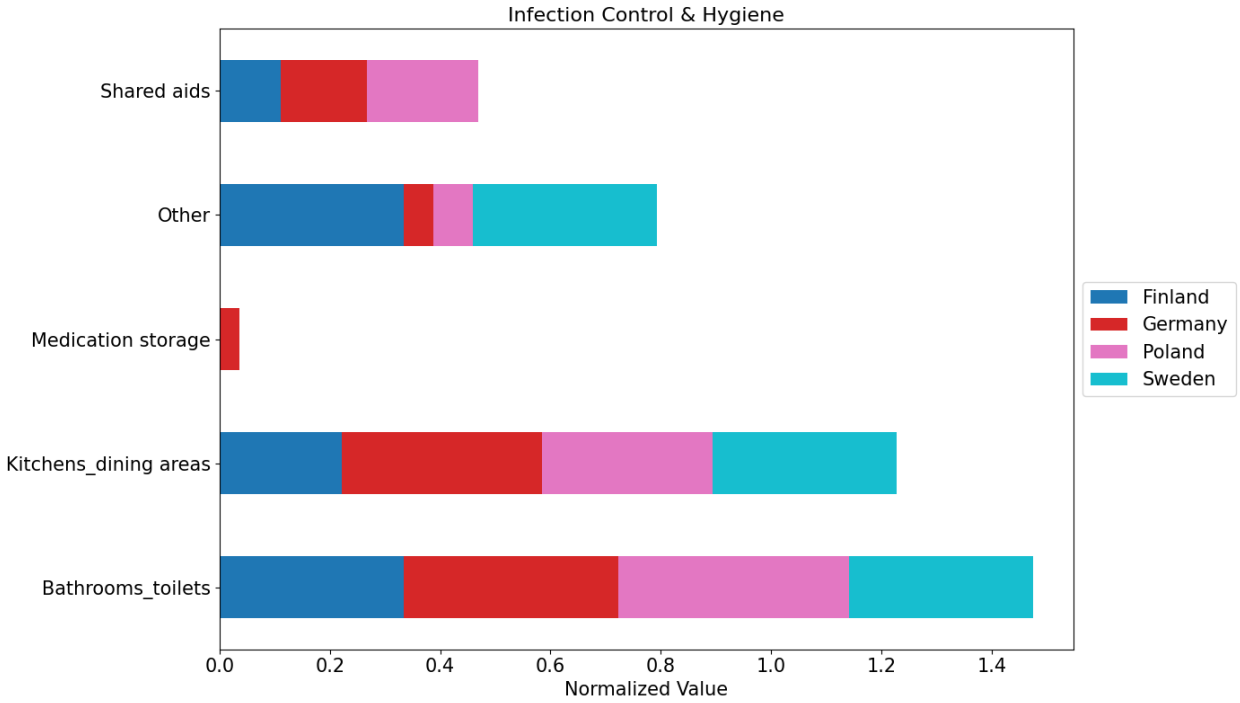


Figure 3.4. Key factors of infection and hygiene control.

Regarding the key factors, as shown in Figure 3.4, bathrooms and toilets, followed by kitchens and dining areas, have the highest values in relation to infection and hygiene control. . For medication storage, only Germany mentioned it, and even then, with the lowest value overall.

In this plot, the "Other" subcategory includes various country-specific concerns: in Sweden, topics such as "building a facility to enable isolation, no visitors in or out, and knowledge of materials" were mentioned; in Poland, issues included "the ability to implement temporary barriers or guidance systems, designing or retrofitting public spaces to minimize health risks, modular layouts, flexible seating arrangements, hand sanitizing stations, and hospitals"; in Finland,

references were made to “role of surfaces, air, and water systems, frequently touched surfaces, antimicrobial coatings on materials, plumbing and ventilation systems, urinary tract infections and clostridium difficile infections”; and in Germany, mentions included “unnecessary doctor visits, bathroom and toilet in the living area, rubbish bins, clothes, bed linen, mattresses, and staff hygiene.”

3.4. Emotional well-being & quality of life

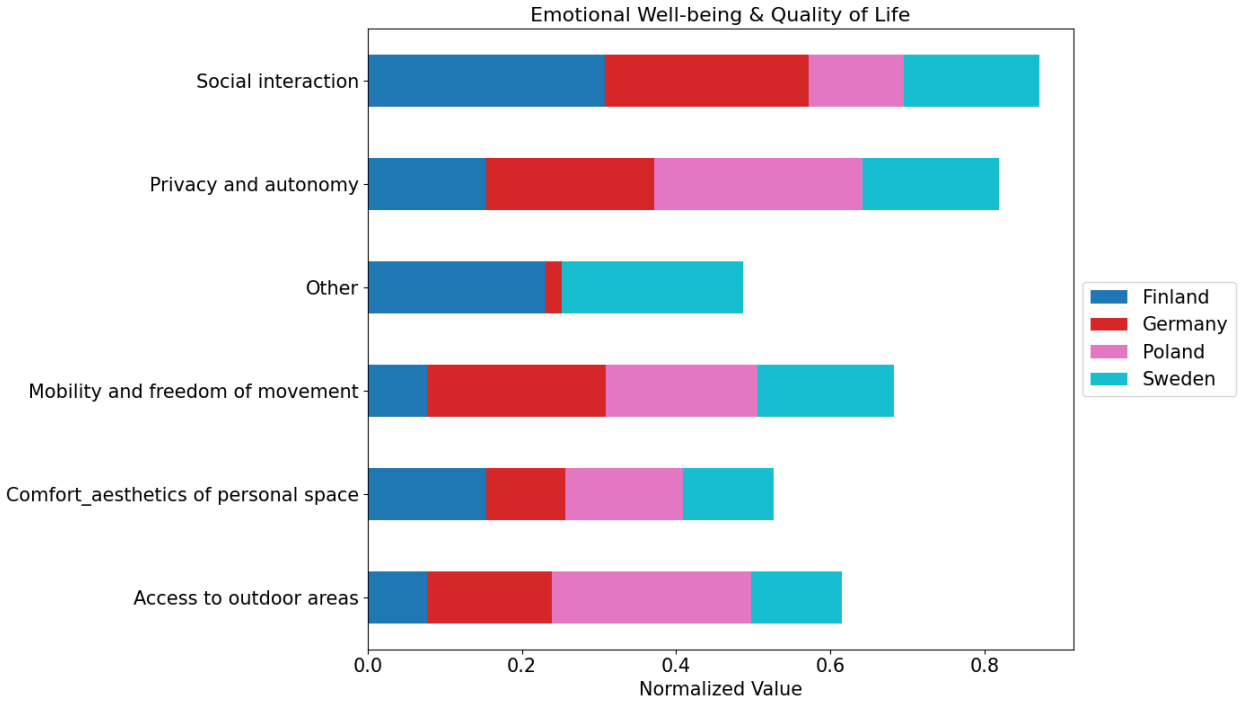


Figure 3.5. Key factors of emotional well-being and quality of life.

As shown in the plot, “Social Interaction” has the highest value overall, particularly in Finland, followed by “Privacy and Autonomy” and “Access to Outdoor Areas” in Poland. For the “Comfort and Aesthetics” subcategory, Finland and Sweden show the highest values, while in the “Mobility and Movement” subcategory, Germany appears to face the most issues.

Examples under the "Other" label include: "care facilities, natural settings, and cognitive and physical stimulation, lighting, acoustics, materials choices and design principles, Support continued learning, digital accessibility" in Sweden; "loneliness and social isolation, poor maintenance, steep terrain, lack of clear guidance, and feelings of insecurity" in Finland; and "prevention of loneliness, quality of living space, restrictions related to finances and health, neighborhood assistance, and digital services and technologies" in Germany.

3.5. Common problem areas in senior living design

As illustrated in Figure 3.6, the most frequently mentioned common problem area is "bathrooms," particularly in Poland. Communal areas are also identified as the second most problematic spaces in senior living design. Examples under the "Other" subcategory include: "kitchen, places which involve physical, sensory, emotional, and cognitive challenges" in Sweden; "elevator installation" in Poland; "limited mobility and accessibility issues, healthcare accessibility and safety risks, social isolation and loneliness, financial constraints, limited housing options, deteriorating infrastructure, and kitchen usability challenges" in Finland; and in Germany, concerns such as "age-friendly housing in urban areas, lack of essential services or mobility options, outdated building conditions, new energy efficiency requirements, renovations, deficiencies in accessibility, technical barriers in the home, lack of Wi-Fi or smart control systems, and cognitive and sensory barriers. Older adults with visual, hearing, or fine motor impairments often face challenges when interacting with digital interfaces."

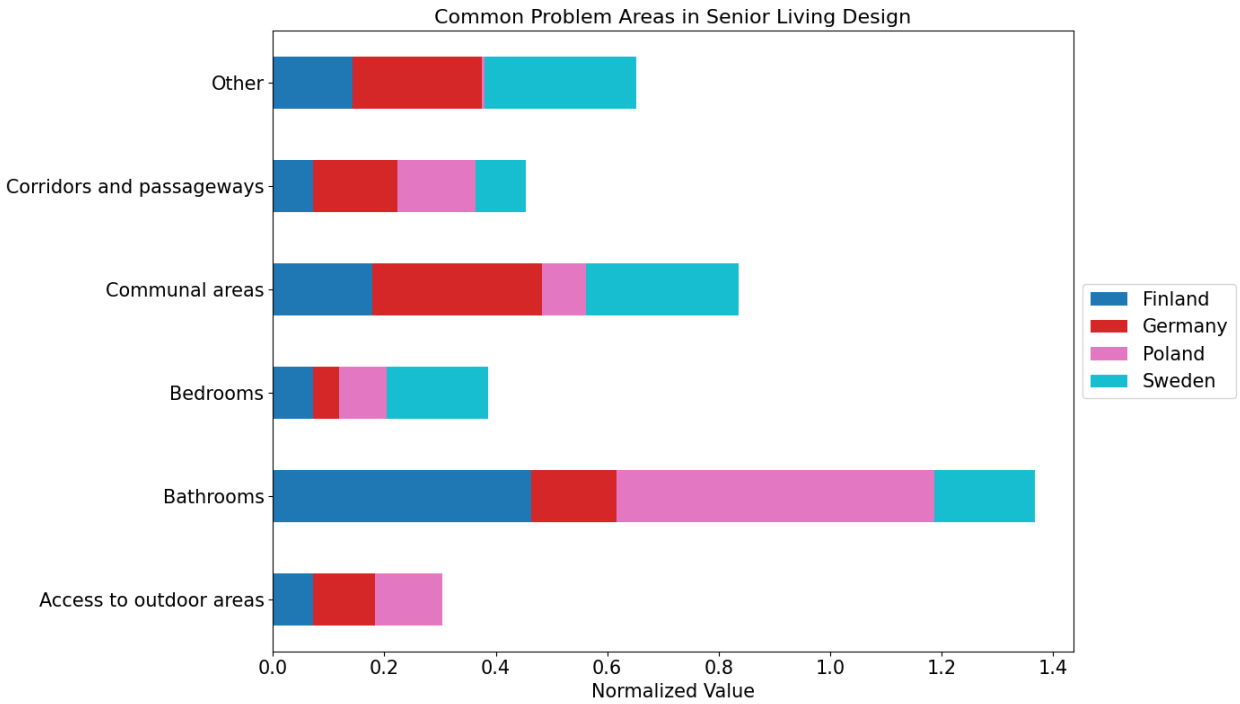


Figure 3.6. Subcategories of common problem areas.

3.6. Design features to prioritize

As shown in Figure 3.7, the subcategories "Easy Cleaning and Maintenance" and "Flexibility and Adaptability of Spaces" have the highest values overall. For the other subcategories, the results vary across countries.

Under the "Other" subcategory, in **Sweden**, examples include: "use of color and contrast to support orientation, opportunities for physical activity and social interaction, the importance of homelike environments and welcoming lobbies, and spaces for meaningful activities." In **Finland**, responses mentioned: "prioritizing cost, ethical sourcing, and product lifespan; high-emission materials; incomplete reporting and documentation; inefficient shift handover meetings; limited visibility in patient rooms; slow response to emergencies; nurses overwhelmed by manual tasks; fragmented communication; limited mobility support for residents; lack of personalized care plans; remote health measurements; monitoring technologies; safety-increasing solutions; music therapy integration; and barrier-free layouts."

In **Germany**, key themes included: "proximity to local shops, medical services, social facilities and public transportation; neighborhood-based support and care services; user-friendliness and accessibility of technical solutions; adapting digital content to the sensory abilities of older adults; accessibility and universal design principles; opportunities for social inclusion and activity; barrier-free or low-barrier housing design; sense of safety; smart senior living; and the importance of adequate technical equipment and appropriate lighting for safety and comfort.

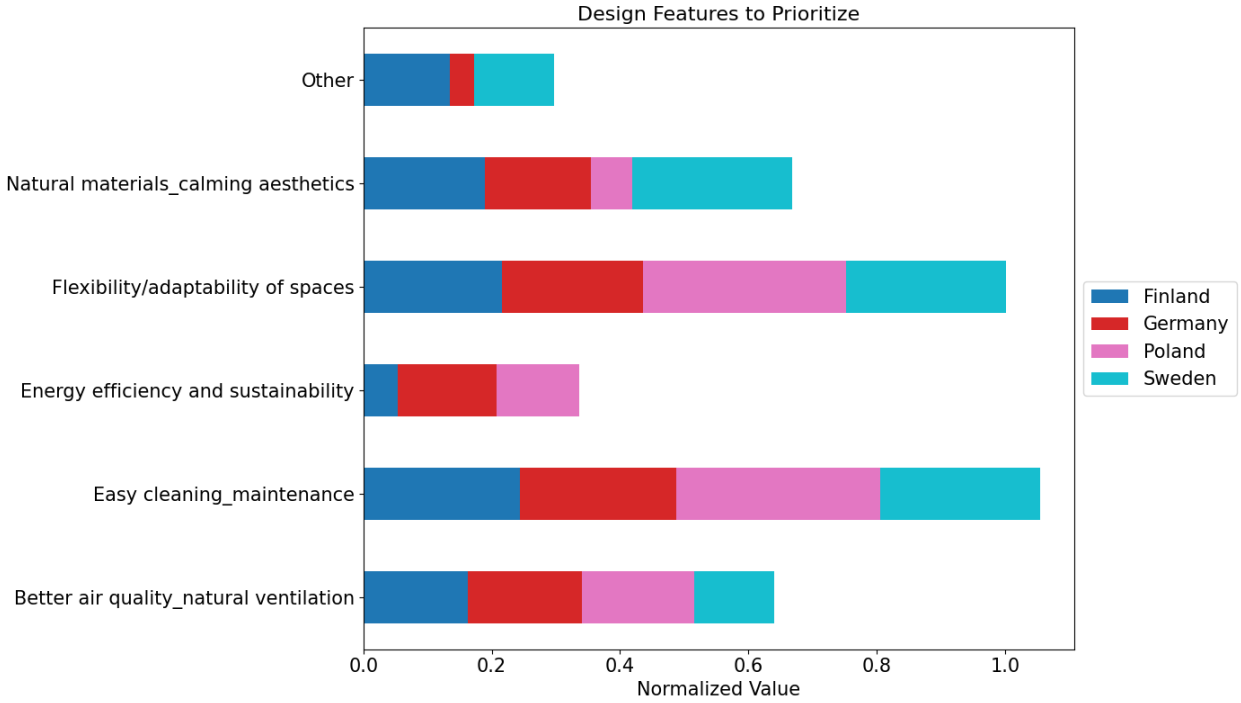


Figure 3.7. Subcategories related to design features to prioritize.

3.7. Technical & smart innovations

In Figure 3.8, "Smart Home Systems" appears to be the most frequently mentioned subcategory in Sweden, followed by Germany. The values for other subcategories vary across different countries. Under the "Other" subcategory, in **Sweden**, additional factors include: "Sweden's healthcare and social services innovation ecosystem" and "medical and welfare technologies." In **Finland**, responses mentioned: "elderly services are often fragmented, underfunded, and reactive," as well as various technologies such as "lifting robots, medicine dispensing robots, telecommunication robots, therapy and social robots, online banking and e-services, smartphones

and social media, wearable health devices, and automated customer service." In **Germany**, examples include: "telemedicine services, digital communication and social participation, and electronic health services."

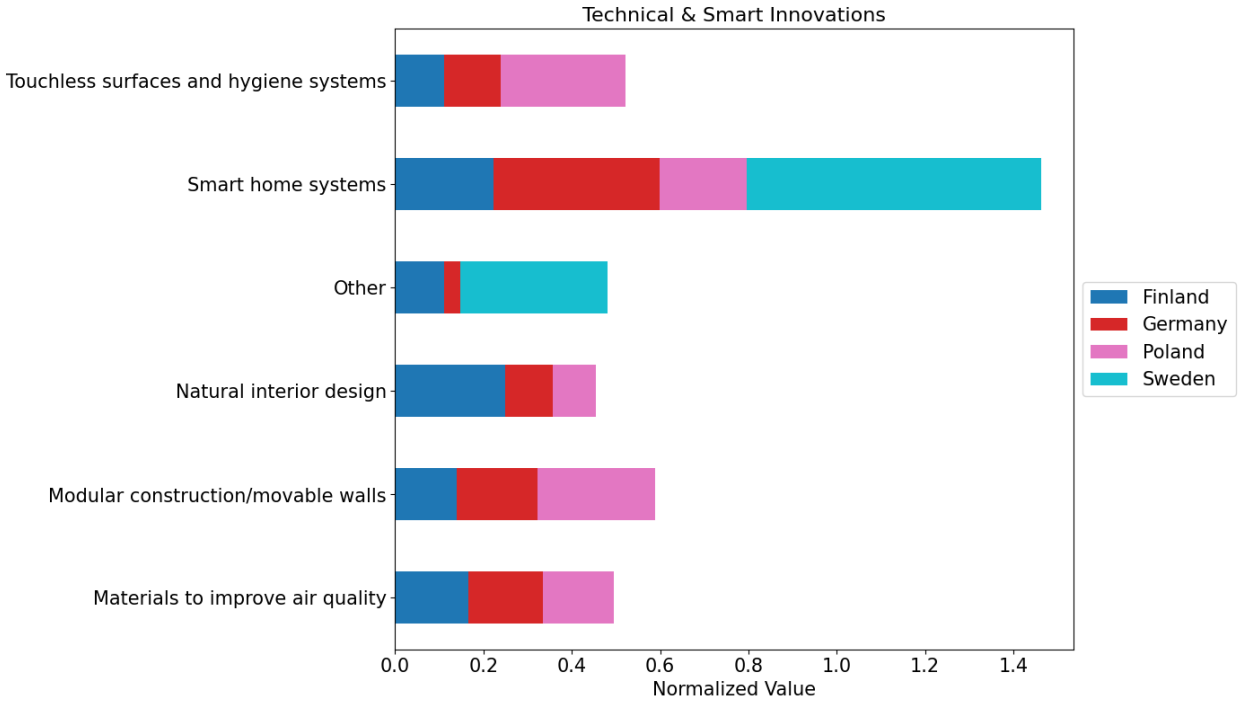


Figure 3.8. Subcategories of technical and smart innovations.

3.8. Sustainability & cost

Regarding sustainability, based on Figure 3.9, Finland—followed by Germany—provided the most input related to financing issues. There was no data available for Poland concerning sustainability and cost. Germany was the only country with responses spanning multiple sustainability-related categories.

In the "Other" subcategory, in **Sweden**, responses included: "applying efficient methods such as laboratory experiments and large-scale recycling tests; hydrothermal treatment (RedBag Solutions); ozonation (Ozonator); integrating climate and sustainability considerations into

clinical practice; reducing the environmental and climate impact of healthcare processes; use of reusable materials and digital communication; ensuring continuity of care while minimizing waste; reducing the use of virgin plastics; enabling better waste sorting at the source; and improving infrastructure for collection and recycling—provided that legal, logistical, and behavioral barriers are addressed." The main concern in **Finland** was: "austerity measures in social and healthcare." and in **Germany**, the responses included: "Lack of awareness among the target group, refinancing options, unclear responsibilities for repair/maintenance requirements."

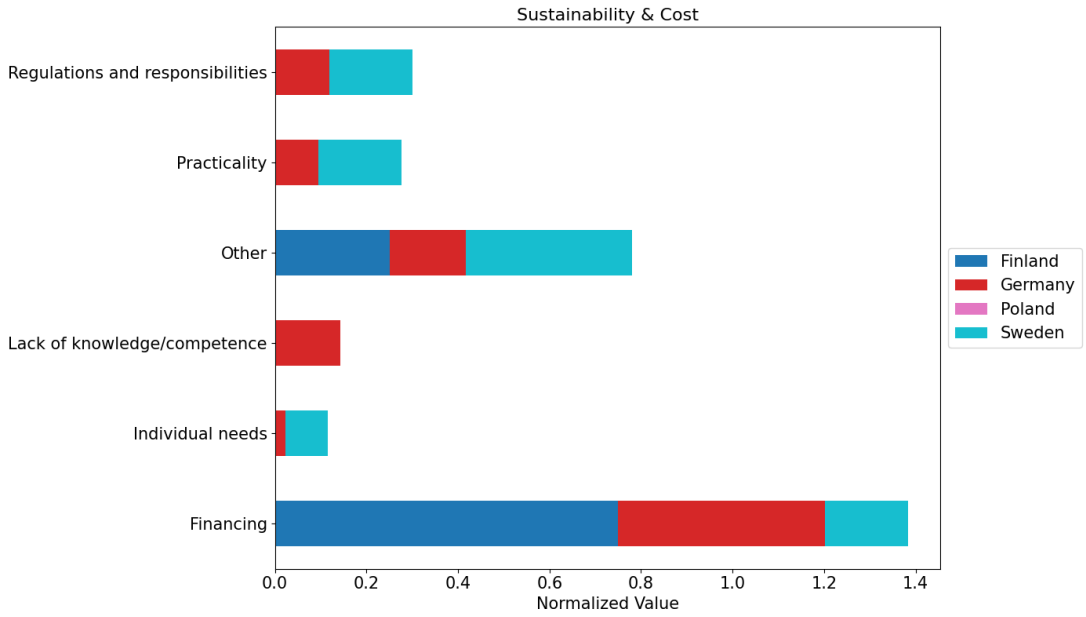


Figure 3.9. Subcategories of sustainability and cost.

3.9. Other issues

The questionnaire and interview data included several questions, some of which were specific to seniors and others to experts (the value counts are available in the spreadsheet). We analyzed the questions that were answered by both groups, as illustrated below.

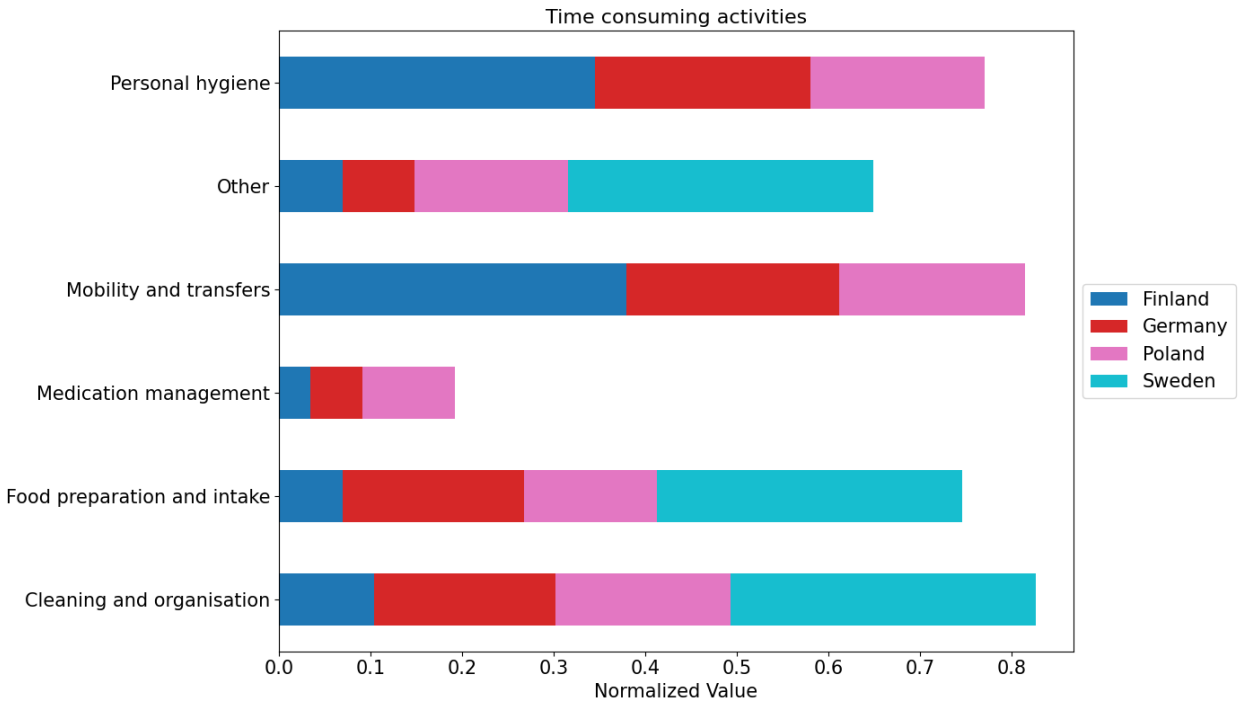


Figure 3.10. Key factors in time-consuming activities.

Figure 3.10 presents the subcategories under "Time-Consuming Activities", highlighting areas where better time management can help address other issues faced by seniors. As shown, "Cleaning and Organization" consumes the most time, followed by "Personal Hygiene", while "Medication Management" is the least time-consuming activity.

Regarding the "Other" category, examples include:

- Sweden: Care work, documentation, and administrative tasks
- Poland: Making the bed, getting in and out of bed, unfolding the sofa, sitting down or standing up from an armchair or chair, and reaching for objects on high or low shelves
- Finland: House chores
- Germany: Shopping, conversations, and reading the newspaper

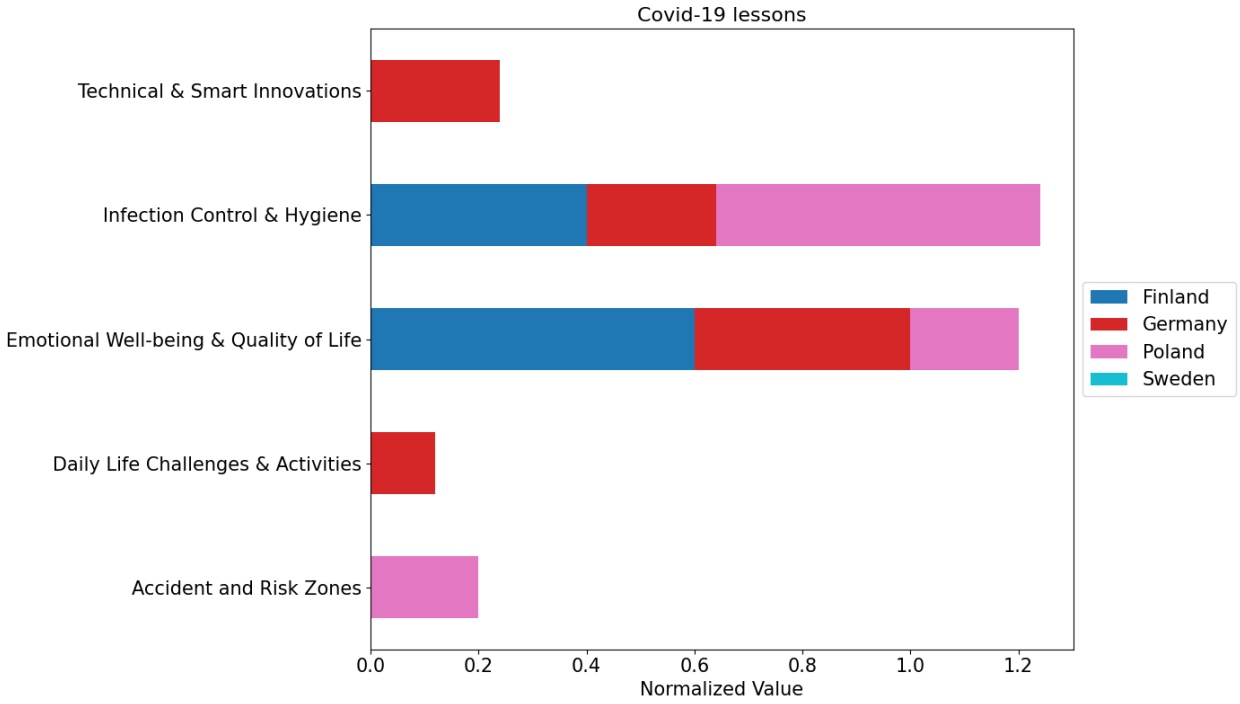


Figure 3.11. Key factors related to Covid-19 lessons.

Figure 3.11 shows that “Infection Control and Hygiene” and “Emotional Well-being” were the main concerns among the three countries: Finland, Germany, and Poland. No data regarding “COVID-19 Lessons” was available from Sweden.

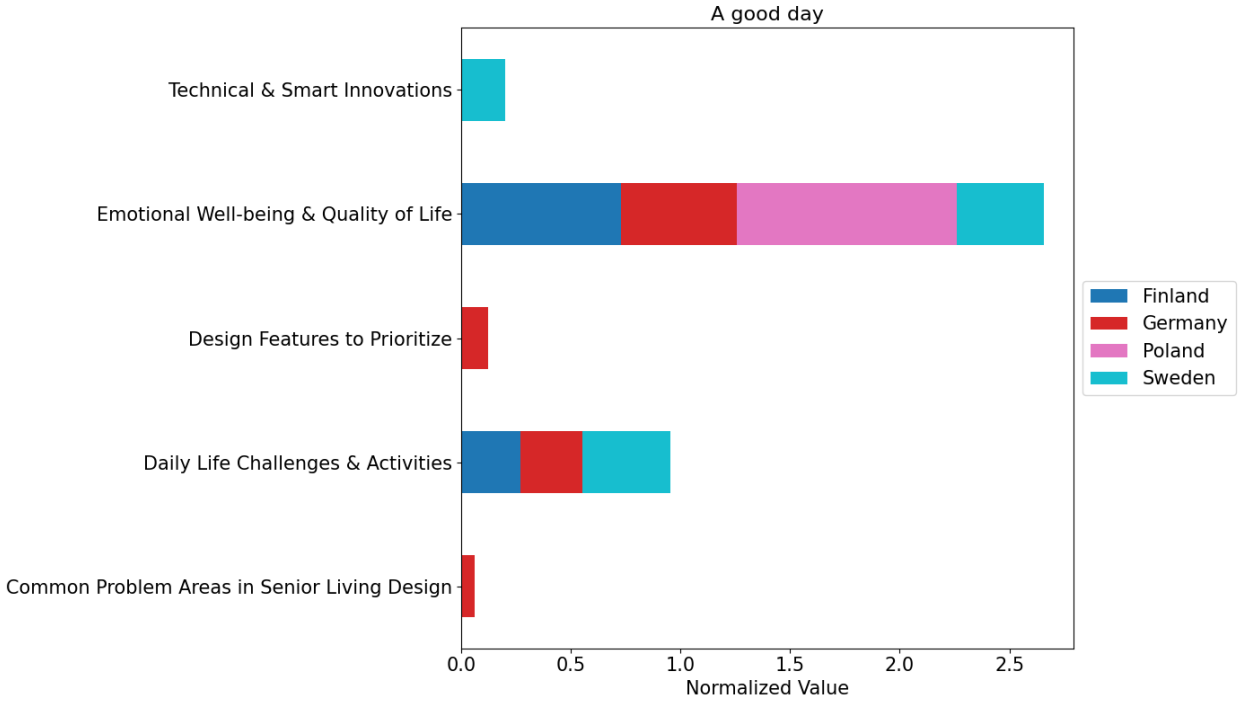


Figure 3.12. Subcategories related to good day definition.

As shown in Figure 3.12, all participating countries expressed concern about “Emotional Well-being and Quality of Life” in their responses, highlighting it as a critical factor for experiencing a good day.

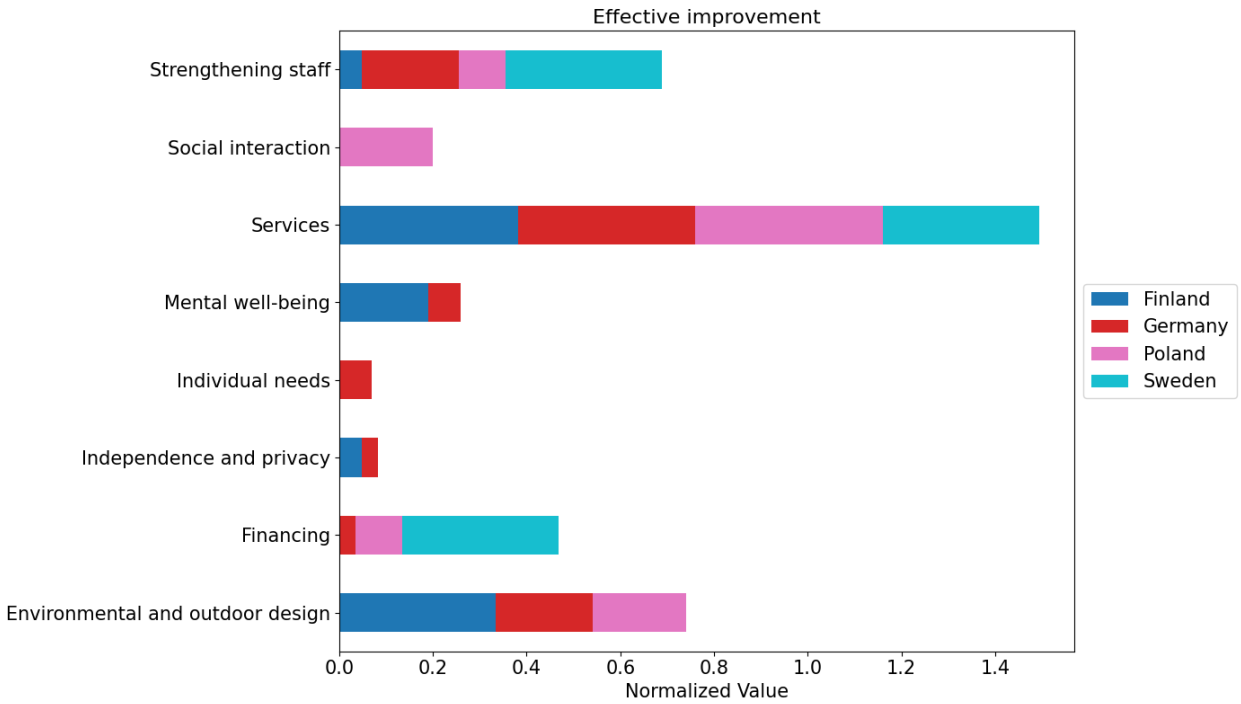


Figure 3.13. Key factors related to effective improvement.

Figure 3.13 presents participants' responses to the question: “What do you think would be an effective improvement that would make the biggest difference in residential care facilities or senior living services?” As shown, “Services” received the most emphasis, followed by “Environmental and Outdoor Design”, and “Strengthening Staff”—both in terms of staff quality and quantity.

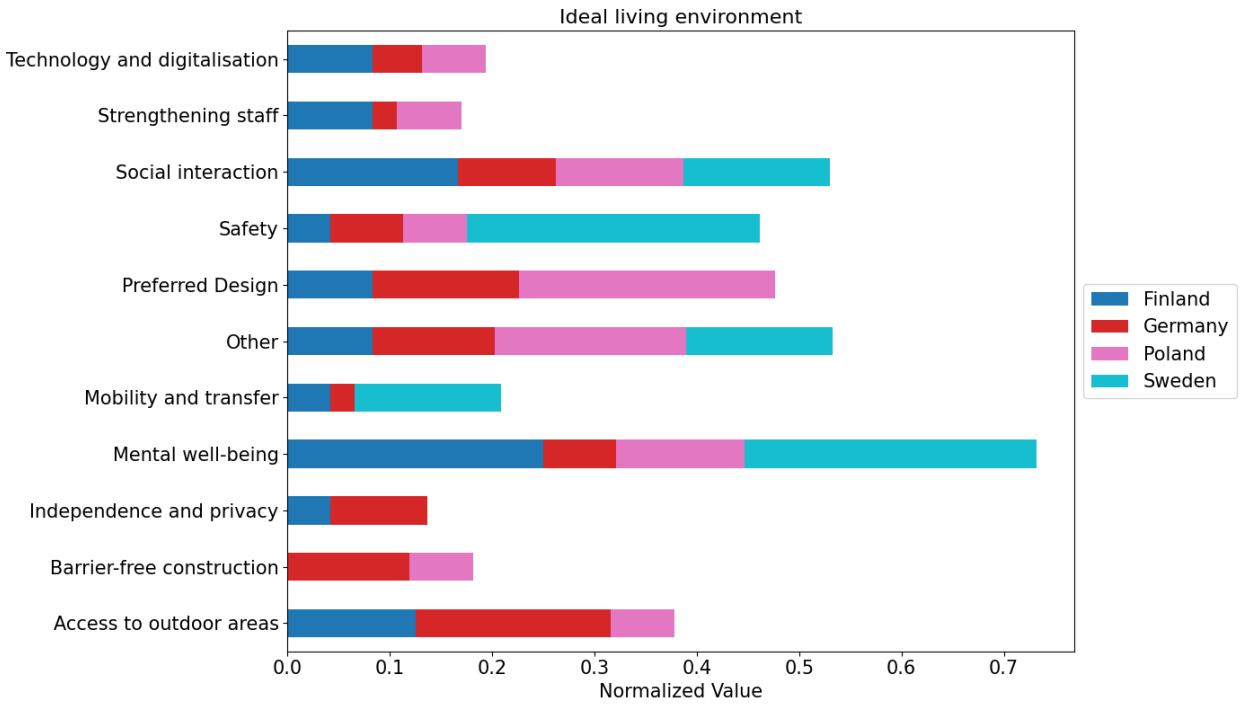


Figure 3.14. Key factors of an ideal living environment.

Figure 3.14 illustrates the factors mentioned by participants regarding an ideal living environment. The most frequently cited factor is “Mental Well-being”, followed by “Social Interaction” and an environment designed according to the “Preferred Design” of the residents.

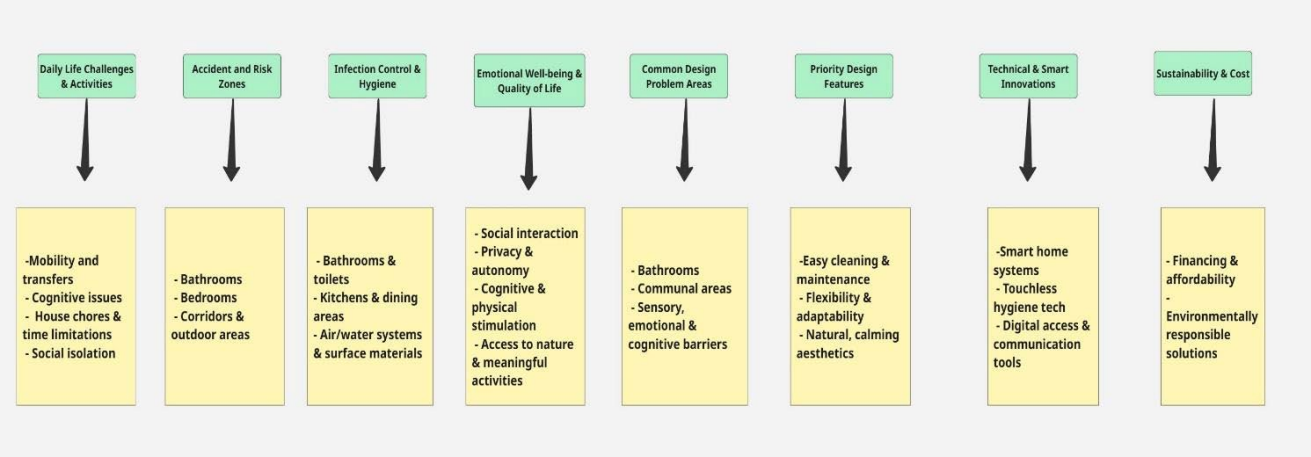
Examples from the “Other” category include, Sweden: Being understood even if one cannot speak, Poland: Clean and just like at home, Finland: Having entertainment activities, Germany: Living in the neighborhood, bright and quiet surroundings, a cozy atmosphere, and access/having a communal dining and lounge areas.

4. Conclusion

This report presents a comprehensive cross-national needs assessment of older adults across Finland, Sweden, Germany, and Poland within the SmartAging project. The data highlights both shared and context-specific challenges experienced by seniors, with recurring themes such as mobility difficulties, bathroom safety, emotional well-being, and the importance of social interaction appearing prominently across all countries. The comparative analysis also reveals distinct national concerns, such as cognitive constitution in Sweden, privacy in Poland, and fragmented care systems in Finland, underscoring the importance of tailoring solutions to diverse socio-cultural and institutional contexts. Figure 4.1 provides a summary of the main challenges across all four countries.

The findings emphasize that designing effective and inclusive senior living environments requires an integrated approach, one that combines attention to emotional well-being, safety, and autonomy with innovations in smart technologies and sustainable practices. Bathrooms and kitchens repeatedly surfaced as risk-prone areas, while easy maintenance, adaptable design, and user-friendly smart home systems were prioritized as essential features. Equally critical is the need for supporting staff capacity and ensuring financing mechanisms that promote equitable access to quality care and housing.

Figure 4.1. Most common challenges across all countries



Ultimately, the Senior Needs Map generated through this study offers a vital foundation for future stages of the SmartAging project. It anchors innovation in real-world insights and ensures that

upcoming service and technology developments are grounded in the authentic voices and daily experiences of older adults. By aligning design priorities with user-identified needs, the project strengthens its potential to create resilient, scalable, and user-centered smart aging solutions across Europe.

5. Annexes

Below are four country-specific breakdowns and the aim is to clearly identify and organize the main common challenges faced in senior living environments within Sweden, Poland, Finland, and Germany. Each structure highlights key areas such as daily life difficulties, accident and risk zones, infection control and hygiene, emotional well-being, problem areas in design, prioritized design features, technical innovations, and sustainability concerns.

Main Common Challenges (Sweden)

- **Daily Life Challenges & Activities**
  - **Mobility and transfers**
  - **Cognitive constitution**
- **Accident and Risk Zones**
  - **Bathrooms**
  - **Bedrooms**
- **Infection Control & Hygiene**
  - **Bathrooms and toilets**
  - **Kitchens and dining areas**
  - **Other**
    - **Building a facility to enable isolation**
    - **No visitors in or out**
    - **Knowledge of materials**
- **Emotional Well-being & Quality of Life**
  - **Other**
    - **Care facilities**
    - **Natural settings**
    - **Cognitive and physical stimulation**
    - **Lighting, acoustics, materials choices, design principles**
    - **Support continued learning**
    - **Digital accessibility**
- **Common Problem Areas in Senior Living Design**
  - **Communal areas**
  - **Other**
    - **Kitchen**
    - **Places involving physical, sensory, emotional, and cognitive challenges**
- **Design Features to Prioritize**
  - **Easy Cleaning and maintenance**
  - **Flexibility and adaptability of spaces**

- Natural materials and calming aesthetics
- Technical & Smart Innovations
  - Smart home systems
- Sustainability & Cost
  - Other
    - Applying efficient methods such as laboratory experiments and large-scale recycling tests
    - Hydrothermal treatment (RedBag Solutions)
    - Ozonation (Ozonator)
    - Integrating climate and sustainability considerations into clinical practice
    - Reducing environmental and climate impact of healthcare processes
    - Use of reusable materials and digital communication
    - Ensuring continuity of care while minimizing waste
    - Reducing the use of virgin plastics
    - Enabling better waste sorting at the source
  - Improving infrastructure for collection and recycling—provided legal, logistical, and behavioral barriers are addressed

Main Common Challenges (Poland)

- Daily Life Challenges & Activities
  - Mobility and transfers
- Accident and Risk Zones
  - Bathrooms
- Infection Control & Hygiene
  - Bathrooms and toilets
- Emotional Well-being & Quality of Life
  - Privacy and autonomy
- Common Problem Areas in Senior Living Design
  - Bathrooms
- Design Features to Prioritize
  - Easy Cleaning and maintenance
  - Flexibility and adaptability of spaces

- Technical & Smart Innovations
  - Touchless surfaces and hygiene systems
- Sustainability & Cost
  - (no sublevels)

Main Common Challenges (Finland)

- Daily Life Challenges & Activities
  - Mobility and transfers
  - Other
    - House chores/cleaning
    - Lack of time
    - Food issues
    - Dressing
    - Healthcare
- Accident and Risk Zones
  - Bathrooms
- Infection Control & Hygiene
  - Bathrooms and toilets
  - Other
    - Role of surfaces, air, and water systems
    - Frequently touched surfaces
    - Antimicrobial coatings on materials
    - Plumbing and ventilation systems
    - Urinary tract infections and clostridium difficile infections
- Emotional Well-being & Quality of Life

- Social interaction
- Common Problem Areas in Senior Living Design
  - Bathrooms
- Design Features to Prioritize
  - Easy Cleaning and maintenance
- Technical & Smart Innovations
  - Natural interior design
- Sustainability & Cost
  - Financing

Main Common Challenges (Germany)

- Daily Life Challenges & Activities
  - Mobility and transfers
- Accident and Risk Zones
  - Bathrooms
- Infection Control & Hygiene
  - Bathrooms and toilets
- Emotional Well-being & Quality of Life
  - Social interaction
- Common Problem Areas in Senior Living Design
  - Communal areas
- Design Features to Prioritize

- Easy Cleaning and maintenance

- Technical & Smart Innovations
  - Smart home systems

- Sustainability & Cost
  - Financing

SmartAging Need Mapping Questionnaire

- (Please select your role)
- ☐ Senior / Resident
- ☐ Healthcare Professional (nurse, physiotherapist, doctor)
- ☐ Management (facility manager, logistics, food services)
- ☐ Local Authority Representative
- ☐ Family Member / Relative
- ☐ Designer / Architect / Engineer
- ☐ Researcher / Scientist
- ☐ Industry Expert / Material Specialist

Section 1: General Information

- 1. What is your profession or relation to senior care? (Short open text)
- 2. How many years of experience do you have working with or supporting seniors?
- ☐ 0–2 years ☐ 3–5 years ☐ 6–10 years ☐ More than 10 years
- 3. In what type of environment are you primarily involved?
- ☐ Assisted Living ☐ Home Care ☐ Nursing Home ☐ Hospital ☐ Other: _____

Section 2: Daily Activities and Challenges

- 4. Which daily activities are the most time-consuming for seniors (or staff assisting them)?
- ☐ Mobility and transfers ☐ Personal hygiene ☐ Medication management ☐ Meal preparation and eating ☐ Cleaning and organizing ☐ Other: _____
- 5. Where do you see the highest risk of accidents (e.g., falls, injuries)?
- ☐ Bathroom ☐ Bedroom ☐ Hallways ☐ Common living areas ☐ Outdoor spaces ☐ Other: _____
- 6. Which areas require special attention for infection or bacteria control?
- ☐ Bathrooms and toilets ☐ Kitchens and dining areas ☐ Medical supply rooms ☐ Shared equipment (e.g., wheelchairs) ☐ Other: _____
- 7. What lessons from the COVID-19 pandemic are most important for improving assisted living environments? (Short open text)

- 8. What is the biggest day-to-day challenge for seniors you observe or experience? (Short open text)

Section 3: Emotional and Environmental Aspects

- 9. How would you describe a “good day” for a senior in an assisted living environment? (Short open text)
- 10. Which factors most affect seniors' emotional well-being?
- ☐ Access to outdoor spaces ☐ Privacy and autonomy ☐ Social interaction ☐ Comfort and aesthetics of personal space ☐ Mobility and freedom of movement
- 11. For seniors: How do you feel about your current living environment?
- ☐ Very satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very dissatisfied
- 12. Are you able to personalize your living space (e.g., furniture, decorations)?
- ☐ Yes ☐ Partly ☐ No
- 13. What is one thing that would significantly improve your quality of life? (Short open text)

Section 4: Improvement and Innovation

- 14. From your perspective, what is the one impactful improvement that would make the biggest difference in elderly care facilities? (Short open text)
- 15. Which of the following areas need the most urgent design improvements?
- ☐ Bathrooms ☐ Bedrooms ☐ Hallways and transitions ☐ Common areas (lounges, dining) ☐ Outdoor access ☐ Other:
- How can it be improved?
- 16. Which features should future designs prioritize most?
- ☐ Easy cleaning and maintenance ☐ Flexibility/adaptability of spaces ☐ Energy efficiency and sustainability ☐ Better air quality and natural ventilation ☐ Natural materials and calming aesthetics
- 17. Are you willing to pay (or see investment) for improvements in sustainability, comfort, or design quality?
- ☐ Yes ☐ Maybe, depending on the cost ☐ No

Section 5: Perspective Based on Your Expertise

- 18. Which technical innovations do you see as most relevant for future senior living environments?
- ☐ Smart home systems (lighting, heating, monitoring) ☐ Touchless surfaces and hygiene systems ☐ Modular construction or movable walls ☐ Materials that improve indoor air quality ☐ Biophilic design (nature integration)
- 19. In your field, what barriers prevent implementing sustainable, user-centered designs today? (Short open text)

Section 6: Final Reflections

- 20. If you could describe the ideal senior living environment in one sentence, what would it be? (Open text)