

Nursing Homes and their Spatial Contexts – Findings from Austria

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Abstract. Against the background of aging and the increasing number of persons in need of care on one hand and the decreasing potential of family support on the other hand, in-patient facilities both in rural areas as well as urban areas of Austria receive importance as final residence. The decision on a facility is challenging. That is why the Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection edits a brochure in three volumes that provides interested persons with information on each residential and nursing home for elderly people. Basing on data from the year 2014, this contribution aims at analysing relevant spatial related information on 885 residential and nursing homes in urban and rural contexts in order to demonstrate how spatial related aspects are considered in the facilities' presentations and how they illustrate the level of community integration of these in-patient offers, to understand facility-specific future plans as well as to reveal important questions and define urgent research demand and to stimulate the interdisciplinary and cross-cutting dialogue.

1. Introduction

Against the background of population aging and the increasing number of persons in need of care on one hand and the decreasing potential of family support on the other hand, residential and nursing homes both in rural areas as well as urban areas of Austria receive importance as final residence.

In the German-speaking region currently three aspects related to in-patient facilities for the elderly are dealt with: quality assurance in nursing, leisure opportunities for the home residents [1] as well as the definition of location requirement [2].

All these efforts address issues of quality of life and well-being of (future) home residents, their proxies (visitors) and staff [3].

From a spatial research perspective evidences related to location requirements are of particular interest, such as facility-specific “equipment” (e. g. shops, cafeterias) [4] and green areas (e. g. (dementia) gardens) [5], infrastructure and services of the location municipality (e. g. public services) [2], and spatial-related external aspects that influence the process of finding adequate locations for (new) in-patient facilities [3].

At the same time, there is a lack of nationwide inventories referring to the spatial contexts of residential and nursing homes. This paper will contribute to close this gap by answering the following questions:

1. What kinds of spatial related information are available on Austrian in-patient facilities?
2. What can be derived from available information with regard to facility-environment interrelations?



2. Material and methods

This investigation – basing on a literature review on location requirements for nursing homes and in-patient facilities for people suffering from dementia – was conducted in fall 2016 and comprises a documentary analysis of a brochure edited by the Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection that provides an overview of all in-patient facilities for elderly people in Austria.

2.1 The brochure “Residential and Nursing Homes in Austria” at a glance

This brochure, edited by the Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection, is the only information source in Austria that provides printed information on each residential and nursing home for elderly people in order to provide decision support for persons concerned or rather interested.

This three-volume brochure [6-8] is published every two years and presents the current status of in-patient facilities sorted according to the federal provinces and the postal codes.

The brochure is the outcome of a joint project of the Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection and the administrations of the residential and nursing homes.

For this pilot study, the 10th edition (released in 2014) was used, presenting the current status of in-patient facilities for the year 2014.

For each facility, a fact sheet is provided which offers mandatory information on the number of beds and cost coverages cost coverages, as well as optional information on location, accessibility, and leisure activities. The “standardised” fact sheets comprise 26 thematic fields (see Table 1) and contain verbal information originating from the facilities’ administrations. The accuracy of the given information is not checked.

Table 1. Content structure of the fact sheets

name and address
name of the facility and postal address
telephone number / e-mail-address
holder and care/nursing services
name of the holder and main areas of servicing
number of nursing places/managed apartments
short-time care opportunities
admission and costs
conditions and restrictions of admission
discount arrangements and
cost transfer opportunities
location based information
location and accessibility
board and lodging
accommodation categories
equipment and furnishing
(allowed) admittance of pets
nursing, medical care
details on staff
in-house practitioners and choice of doctors
available therapies and treatments
quality management
provision of services and leisure
provision of services in-house
leisure activities and visiting regulations
plans for the future

2.2 Selection, detection and collection of spatial related information

Firstly, an EXCEL-database was designed: The facilities should be listed in lines, the spatial related aspects in columns – one separate column for each attribute.

Secondly, the thematic fields “location”, “accessibility”, “services”, “leisure” and “plans for the future” were looked through in order to identify if and how spatial related information are provided in detail. Using the method of “permanent comparisons”, developed by Glaser and Strauss [9], all verbal information on spatial aspects was entered in the database as “strings”.

Thirdly, the above-mentioned thematic fields were randomly checked in order to minimize the amount of “missing values” due to overlooking relevant information.

2.3 Kinds of spatial related information and transformation into data

The five above-mentioned thematic fields provide diverse spatial related information:

“Location” for instance, contains information on geographic location within the community, furthermore, details on centrality and topographic peculiarities as well as on neighbourhood characteristics (e. g. proximity to local amenities, shops, public services, churches, leisure facilities, green spaces) and – in rare cases – personal judgments for location qualities (e. g. “beautiful”, “idyllic”, “sunny”, “traffic-calmed”).

Within the thematic field “accessibility” information of different granularity is provided on availability of public transport, proximity and walking distances to public transport stations (e. g. railway stations, bus stops) and the quality of accessibility using public transport can be found. In addition, journey descriptions as well as notes related to demand-oriented transport (e. g. taxi and shuttle services).

“Leisure facilities” comprise two theme-focused information: firstly, information on “green infrastructure” such as the availability of and descriptions on green areas within the area of the facility (e. g. parks, sun terraces, sensory gardens, elevated flower beds, dementia gardens) or next to it (e. g. woods, barrier free walking trails); secondly, information on community integration (e. g. visits from kindergarten kinds and pupils, voluntary support, in-house facilities promoting intergenerational exchange, cooperation with associations and parishes, collaboration with the municipality).

In order to gain electronically processable data, all spatially relevant thematic-centred “strings” – were categorized and transformed into binary variables (0 = not applicable, 1 = applicably); missing information was labelled with the numeric expression “99”. Finally, the Excel-database comprised 889 lines (facilities) and 32 “spatial-related” columns.

2.4 Considering the “degree of urbanisation” of the location municipalities

In order to reveal the importance of providing spatial-related information within the presentation of residential and nursing homes it is interesting to consider whether a location municipality is urban or rural. That is because it can be assumed that the promotion of facilities located in urban areas can skip additional spatial-related information, because an urban context implies attractiveness and benefits from density (e. g. proximity to infrastructure) or branch mixtures (e. g. short trips).

For this purpose, the location municipalities were classified according to their “degree of urbanisation”. This classification was developed by the European Commission, bases on population density and 1-kilometer-grids and classifies the municipalities into three “spatial types”: densely populated areas, intermediate density areas and thinly-populated areas [10].

Densely populated areas comprise cities, urban centres and urban areas, whereas intermediate density areas comprise towns and suburbs. Thinly-populated areas represent rural areas or rural municipalities. The two first “spatial types” are labelled as “urban”, the last as “rural”.

These data are provided by Statistik Austria [10] for all Austrian municipalities and were also included in the Excel-database.

2.5 Data analysis

First of all, the dataset was entered into the software Statistic Package for Social Sciences (SPSS).

In addition to considering similarities or rather differences due to the “urban” or “rural” context of the location municipalities, data analysis took into account the main focus of care/nursing services. Such information was available for 875 out of 889 in-patient facilities. Thus, 14 facilities were excluded from further analysis.

Due to the lack of assessment of reliability and amounts of missing values (see below), data analysis only referred to the calculation of frequencies.

3. Results

In 2014 in Austria there were 889 in-patient facilities for the elderly and totally comprised 78267 beds. 875 out of 889 clearly were assigned whether to a residential or a nursing focus. 19.4 % of the facilities were located in cities, 36.6 % in towns or suburbs and 44.0 % in rural areas.

82 % of the in-patient facilities have a nursing focus (see table 2).

Related to the main focus of the facility residential homes are primarily (41 %) in cities. 29.9 % are located in rural areas and 29.3 % in towns or suburbs. In contrast, nursing homes particularly (47.1 %) are located in rural areas, followed by towns or suburbs (38.2 %) and cities (14.8 %).

Table 2. Residential and nursing homes related to their urban and rural contexts.

	residential homes			nursing homes		
	cities	towns/suburbs	rural areas	cities	towns/suburbs	rural areas
number of facilities	64	46	47	106	274	338
number of beds	13138	2945	2160	13298	24962	20515
average number of beds	205.3	64.0	46.0	215.5	91.1	60.7

The following sections provide a theme-centred overview of the spatial related information obtained from data analysis.

Generally speaking, three spatial related aspects are covered:

- the location of the facility within the municipality (including personal assessments of the quality of the environment) and its accessibility with public transport,
- the availability and relevance of (a good) infrastructure as well as green areas next to the residential and nursing homes,
- the interrelations of the in-patient facility and its location municipality relating to the quality of daily supply of goods and services (shops, practitioners), in-door and out-door leisure activities (green areas, infrastructure, support of volunteers), the degree of community integration of the facility (intergenerational exchange, joint projects with schools) and facility-specific future plans.

3.1 Breakdown of spatial related information

The section below presents a thematic-centred overview of all spatial related information from the fact sheets, separately for the main focus of care or rather nursing services and “spatial type” of location municipality.

Table 3 shows that general information on “location” and “accessibility” are provided for most facilities: the amount of location-related mentions ranges from 98.4 % (for residential homes located in cities) to 87.2 % (for residential homes located in rural areas). The amount of accessibility-related mentions ranges from 100 % (for residential homes located in cities) to 80.9 % (for residential homes in rural areas). The more detailed the information given on location and accessibility, the more increases the amount of missing values relating to the spatial type of the location municipality. For instance, for 42.2 % of the residential homes information is provided on the location or rather

centrality of the facility within the location municipality. At the same time, it can be seen that for facilities located in rural areas more detailed information is provided than for facilities in urban contexts.

Table 3. Breakdown of spatial related information.

	residential homes			nursing homes		
	cities	towns/suburbs	rural areas	cities	towns/suburbs	rural areas
“location”	98.4	89.1	87.2	97.2	93.1	88.8
location in municipality	42.2	78.3	72.3	42.5	78.8	75.1
topographical indications	0.0	0.0	0.0	0.0	2.2	0.9
qualities of surrounding	25.0	23.9	17.0	29.2	25.9	18.3
judgement of location	0.0	0.0	2.1	0.9	2.6	6.5
“accessibility”	100.0	91.3	80.9	93.4	88.0	82.5
availability/quality of public transport	0.0	2.2	6.4	0.9	4.4	3.8
walking distance from/to bus stop/railway station	9.4	34.8	23.4	16.0	29.2	27.5
route description	0.0	4.3	8.5	2.8	4.0	5.9
parking available	0.0	0.0	0.0	2.8	0.7	0.0
relevance of environment for leisure activities	9.4	30.4	25.5	19.8	32.5	28.7
community integration	7.8	15.2	19.1	16.0	20.8	18.3
spatial related future plans	3.1	2.2	0.0	3.8	4.4	6.8

The values are listed as percentages in relationship to the total of all facilities considering the availability of information on “location” and “accessibility” as well as the “degree of urbanisation”.

In general, there is little information on topographical indications or rather specifics (e.g. location on slopes, sunny locations)

Those who filled in the fact sheets attached great value to emphasizing the quality of the facilities’ surrounding. This is particularly true for residential and nursing homes in urban contexts. Approximately for a quarter of all facilities located in cities, towns or suburbs relevant information is provided. The relevance of the quality of the surrounding for leisure activities is stressed differently. Especially the presentations of facilities located in towns, suburbs and rural areas offer information regarding this (32.5 % relating to nursing homes in towns/suburbs, 25.5 % relating to residential homes in rural areas). On the contrary, information on the relevance of community integration for maintaining social inclusion and participation is thin: Only for 7.8 % of all residential homes located in cities relevant information is available. In contrast, in 20.8 % of the presentations of nursing homes in towns or suburbs the value of community integration is emphasized.

Spatial related aspects within the facilities’ future plans can be found only for a comparatively small number of facilities; the number of mentions differs according to the spatial contexts and ranges from 6.8 % for nursing homes in rural contexts to 2.2 % for residential homes in towns or suburbs to 0.0 % for residential homes in rural areas.

3.2 Location and environment

Analysing the data on details referring to the facilities’ centrality within the location municipalities the following picture can be drawn (see figures 1 and 2): Both, residential and nursing homes are primary

located in or next to city, town or village centres. Generally speaking, facilities at the outskirts or in peripheries can be found in rural contexts.

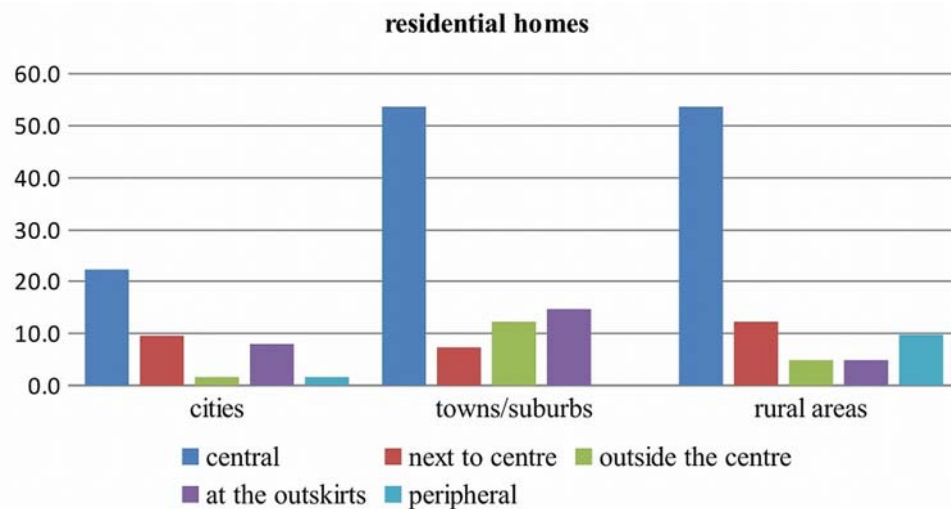


Figure 1. Residential homes and their location within in the municipalities.

The values are listed as percentages in relationship to the total of all facilities considering the availability of information on “location”.

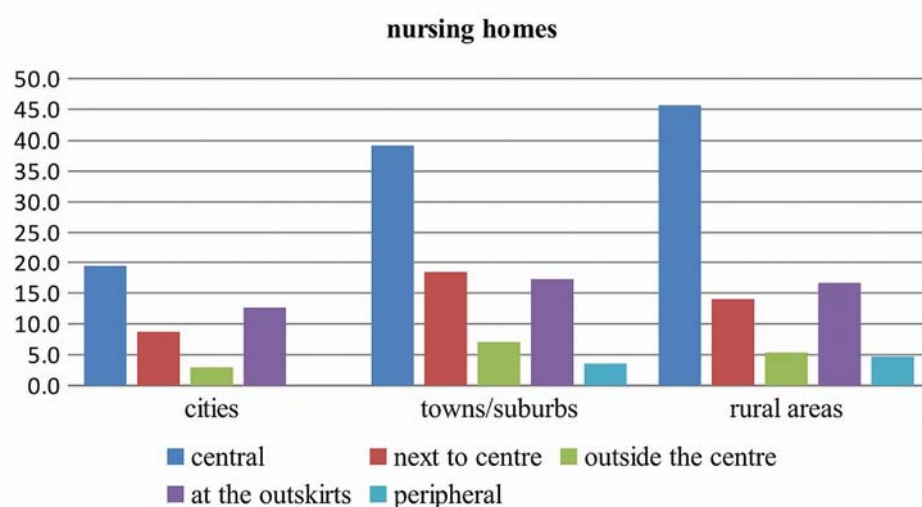


Figure 2. Nursing homes and their location within in the municipalities.

The values are listed as percentages in relationship to the total of all facilities considering the availability of information on “location”.

The information provided refers to various spatial related aspects and location characteristics comprising different amounts of detail. Besides centrality, sometimes precise descriptions of the location itself including the name of the village, lists of nearby social and medical infrastructure (e. g. ecclesiastical and public institutions, shopping facilities, healthcare and childcare facilities, leisure infrastructures), railway stations and bus stops and green areas next to or being part of the facilities (e. g. “green location”, “spa gardens”, “dementia gardens”, “orchards”, “vineyard”, “forests”,

“meadows”, “besides a river”, “besides a lake”, “located on a farm”) as well as individual assessments of the quality of the surrounding (“idyllic”/“beautiful”/“quiet”) can be found.

Detailed information on location often refers to “traffic-calmed” environments.

Considering the main focus of care/nursing of the facilities, various similarities and differences relating to the “presentation” of the facilities’ environments are noted (see figures 3 and 4): Information on “green location” is most often mentioned in the city context, some distance behind followed by the emphasis on “quiet location” and “infrastructure nearby”. In this regard, residential and nursing homes do not differ significantly. The analysis of the presentation of the facilities’ environments located in towns or suburbs brings to light the emphasis on “infrastructure nearby”, followed by the availability of green areas and the “quietness” of location.

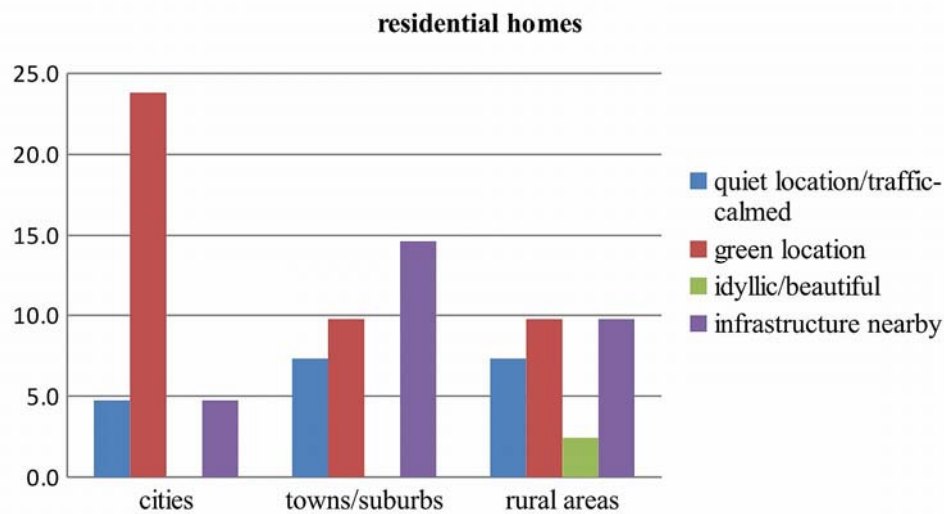


Figure 3. Residential homes and their environments.

The values are listed as percentages in relationship to the total of all facilities considering the availability of information on “location”.

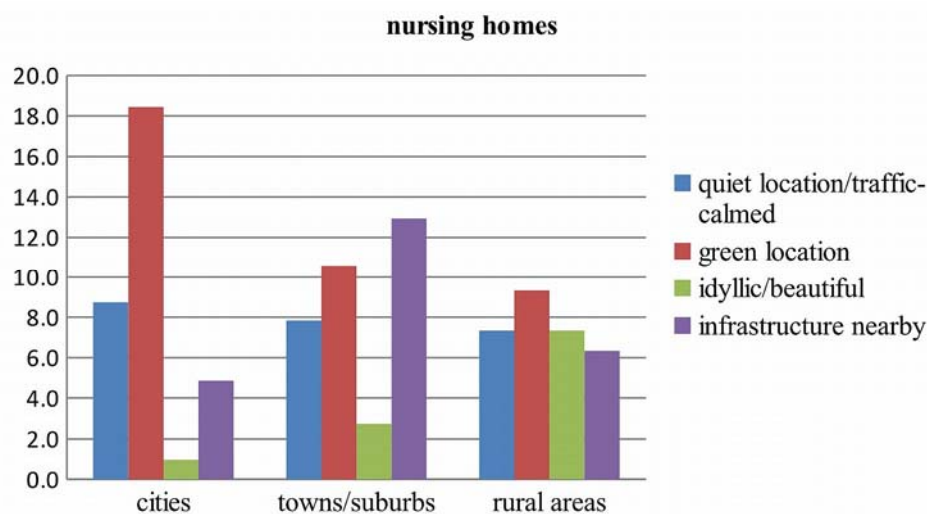


Figure 4. Nursing homes and their environments.

The values are listed as percentages in relationship to the total of all facilities considering the availability of information on “location”.

There are also no significant differences regarding the main focus of the facilities, with one exception: The presentations of nursing homes include information on natural beauties. Looking at facilities located in rural areas there are some remarkable differences relating to the presentation of the facilities’ environments: basing on the number of mentions and referring to nursing homes, each of the four indicators are taken into account (see figure 4). The “green location” seems to be most important for presenting these facilities, in contrast, “infrastructure nearby” does not play an important role. Referring to residential homes in rural contexts, the emphasis in presenting the facilities is on “infrastructure nearby”, the “green location” and the “traffic-calmed” environment (see figure 3).

At this point it is important to note once again, that this interpretation bases on not verified information.

3.3 Accessibility

Information on facility-specific accessibility is available for 144 out of 157 residential homes (92 %) and 619 out of 718 nursing homes (86 %). Different “indicators” of describing “accessibility” to different degrees (number of mentions, level of detail) were found:

Information on the “availability and quality of public transport” was poorly reported for residential homes (N = 4). Relating to nursing homes information is provided for 26 facilities, half of these located in rural areas.

Information on “walking distances from/to bus stop or railway stations” is available for 22.9 % of the residential homes and 30.7 % of the nursing homes. Most of the descriptions were found for nursing homes located in rural areas (48.2 %), followed by nursing homes located in towns or suburbs (42.1 %)

“Route descriptions” for car drivers (occasionally including proximity to motorways) are provided for six residential and 34 nursing homes (58.8 % located in rural areas, 32.4 % in towns or suburbs).

No information can be found on “parking” opportunities next to residential homes. Relating to nursing homes there is relevant information for 2.8 % of facilities located in cities and 0.7 % located in towns or suburbs.

The emphasis of describing accessibility obviously is on the offer of public transport: 22.9 % (N = 33) of the residential homes and 30.7 % (N = 190) of the nursing homes provide relevant information. Considering the relevance of the various spatial contexts of the facilities it can be found that 173 out of 190 nursing homes that provide descriptions of public transport offers are located in rural areas (48.9 %) and towns or suburbs (42.1 %).

In comparison, Information on “proximity to railway stations or public transport (e. g. station next to or in front of the facility)” (N = 22) as well as details on “taxi services” (N = 21) and “home pickup services” (N = 3) is rare.

3.4 Community integration

Social integration of home residents and the “spatiality” of the in-patient facilities apparently are interrelated and thus worth being mentioned by the persons who filled in the fact sheets.

The relevance of the facilities’ environments is pointed by 21 out of 157 residential home representatives and 136 out of 718 nursing home representatives. Paying attention to specific spatial aspects depend both on the main focus of the facility and the (infrastructure) related qualities of the location municipalities.

For nursing homes, the opportunity for intergenerational exchange (e. g. joint projects with kindergartens, schools and associations) are most important (N = 64, among them 33 rural facilities and 22 facilities located in towns or suburbs), followed by the support of volunteers (N = 43, among them 21 facilities located in rural areas and 18 facilities located in towns or suburbs) and celebrations

during the liturgical year together with parishes ($N = 13$). Moreover, five nursing home representatives – four of them represent rural facilities – emphasise the relevance of meeting with the location municipality in order to promote deeper integration or to tackle conflicts collaboratively.

Social integration relating to residential homes means raising interactions between the home residents and the local population. The reported efforts concentrate on encouraging the home residents to participate in the organisation of external events ($N = 9$) as well as on facility-related joint projects with kindergartens and schools ($N = 3$) and with volunteers and civil servants ($N = 3$).

3.5 Spatial related future plans and measures

According to the given information 332 out of 885 (37.5 %) in-patient facilities have precise plans for the future or rather consider improvements, primarily focusing quality assurance measures ($N = 214$).

In addition (and concerning a small number of facilities), four different spatial related measures – especially for nursing facilities – were filtered out: 1. the closure of a facility and/or relocation of a facility in the present municipality (seven residential homes, 24 nursing homes), 2. efforts for better integration of the facility within the (new) location municipality (12 nursing homes), 3. collaborative development of future plans with (local) research and education facilities (1 residential home, 9 nursing homes), and 4. encouragement of voluntary support (9 nursing homes).

Due to the large number of missing values the relationships between the spatial contexts of the facilities and the considered measures cannot be worked out concisely.

Nevertheless, some tendencies can be derived: measures fostering better community integration and voluntary support relate to facilities located in intermediate densely populated or rather rural contexts, collaboration with research facilities will be intensified in urban contexts, whereas joint projects with kindergartens or schools will be developed further.

4. Discussion

This paper summarizes the results from a pilot study dealing with spatial contexts of in-patient facilities for elderly people in Austria in the framework of a full survey, basing on data from 2014. All processed data originate from optional information or rather estimations from nursing home administrations.

The amount and quality of available verbal information implies that spatial related information on in-patient facilities for the elderly obviously plays an important role in promoting residential as well as nursing homes. In this context, information on location and accessibility seems to be particularly relevant for future home residents and their proxies.

But there are facility-related differences in the granularity of the provided spatial information as well as in priority setting. For instance, in-patient facilities located in rural areas make greater efforts to point out the qualities of the facilities' environments than facilities in urban contexts do. This may be due to the fact that either "a higher degree of urbanisation" automatically implies adequate supply of goods and services or future home residents and their proxies are familiar with the location municipality and thus, the provision of related information would be redundant.

Furthermore, the main focus of a facility defines the emphasis of spatial related aspects. For example, for residential homes there are more (detailed) descriptions relating infrastructure and green areas than for nursing homes. A correlation with the radius of action of the (future) home residents seems to be possible.

It can also be assumed that favourable infrastructural environments and successful community integration determine the facilities' attractiveness and willingness of the holders to do their best to open itself up their facilities to the location municipality. Such interrelations should always be taken into account when interpreting facility-specific spatial related future plans and measures.

5. Concluding remarks

The brochure is a rich information source. However, all spatial related information has to be interpreted cautiously due to the open questions related to reliability and the large amount of missing

information. That is why neither the relevance of spatial related information compared to the nursing portfolio nor the fulfilling of location requirements can be figured out.

Thus, further research should focus on the assessment of the reliability of the information including geodata infrastructure and in-depth information from relevant stakeholders in order to enhance the understanding of the interrelations between the in-patient facilities and their community contexts. Findings in this field and the launch of an intensive dialogue between spatial planners, architects, social scientists and municipal representatives potentially allow better location planning and municipality development in the future.

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