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Leaving no-one behind – dealing with hard-to-count and vulnerable population groups in the census**Dealing with various institutional population groups in the register-based system – the case of Slovenia****Note by the Statistical Office of the Republic of Slovenia****Summary*

Using the United Nations Economic Commission for Europe (UNECE) Conference of European Statisticians (CES) document “Recommendations for Measuring Older Populations in Institutions” as a reference, this paper presents the methodology for detecting relevant institutional populations and the typology of institutional households in a complete register-based population census. Furthermore, a regular update of the list of collective living quarters/institutional households will be developed. Detecting institutional population is particularly important due to the fact that the newly-adopted EU Regulation on Integrated European Social Statistics (IESS) in general excludes institutional population from sampling frames. The paper also presents the impact of institutional populations (predominantly persons living in older people’s homes) on some demographic indicators at the regional level. Analyzing the age structure of the institutional population and the private household population, the paper attempts to highlight some aspects relevant for determining the age limit for defining older persons. The adequacy or otherwise of the traditional age limit of 65 years is discussed.

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I. Introduction

1. In general, the majority of the population of Slovenia lives in conventional dwellings occupied by private households (according to the latest Register-Based Census in Slovenia in 2018 the share was 96.4 per cent). Therefore, this paper discusses how to deal with the remaining 3.6 per cent of the population in the register-based system, with the main emphasis on converting (input) administrative concepts (and available data) into (output) statistical concepts and reliable data.

2. Three basic statistical units must be considered and linked together using statistical (population and census) methodology based on Regulation (EC) No 763/2008 of the European Parliament and of the Council of 9 July 2008 on population and housing censuses.

II. Framework for population, household and type of living quarters

3. In theory, nine population groups can be derived from the combination of household type and type of living quarters; but only five of these groups have statistical implications (see Table 1). In fact, an institutional household could occupy a conventional dwelling, but due to clear concepts and simplification of statistical processing, such a dwelling is considered as collective living quarters. The “other household” category refers to persons with registered permanent residence at the address of administrative bodies or social work centres but not living there (the category includes homeless persons, too). The framework presented was established prior to the first register-based census in Slovenia in 2011.

Table 1

Framework for linking three basic census units in the register-based system in Slovenia

<i>POPULATION</i>	<i>HOUSEHOLD TYPE</i>	<i>TYPE OF LIVING QUARTER</i>	<i>IMPLICATION</i>
PERSON (usual population definition) Adm. source: Central Population Register	PRIVATE HOUSEHOLD Adm. source: Household Register	CONVENTIONAL DWELLING	YES
		COLLECTIVE LIVING QUARTER	YES
		OTHER HOUSUNG UNIT	YES
	INSTITUTIONAL HOUSEHOLD No source	CONVENTIONAL DWELLING	NO
		COLLECTIVE LIVING QUARTER	YES
		OTHER HOUSUNG UNIT	NO
	OTHER HOUSEHOLD No source	CONVENTIONAL DWELLING	NO
		COLLECTIVE LIVING QUARTER	NO
		OTHER HOUSUNG UNIT	YES

Adm. source: Real Estate Register

<i>POPULATION</i>	<i>HOUSEHOLD TYPE</i>	<i>TYPE OF LIVING QUARTER</i>	<i>IMPLICATION</i>
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4. The only source of data for the variable "Type of living quarters" is the Real Estate Register maintained by the Surveying and Mapping Authority of the Republic of Slovenia. Data on the type of living quarters are statistically determined based on the following data received quarterly:

(a) Use of building or part of building according to the national Classification of Types of Construction that was adopted based on the Construction Act. The objects are classified according to the purpose of their use in three sections (Buildings, Civil engineering works, Other construction works). For census purposes only the Buildings section is used;

(b) Number of housing units in the building.

5. This means that every part of the building was assigned a basic statistical indicator distinguishing a dwelling from other non-dwelling parts of the building. After this, a new derived statistical variable is constructed at the level of building (building = address) with the following categories:

(a) Building with one conventional dwelling only;

(b) Building with only one non-dwelling part;

(c) Building with one conventional dwelling and at least one non-dwelling part;

(d) Building with two or more conventional dwellings with or without non-dwelling parts;

(e) Building with at least two non-dwelling parts.

6. The next more complicated step is to determine addresses with possible institutional or other households, since data are not directly available from the Household Register. Furthermore, according to the Residence Registration Act a resident can have only one registered household at the address of permanent residence. For the registration of temporary residence, the legislation does not require data on households, so foreigners with only temporary residence in Slovenia have no data on household in the administrative data source. To complicate things even further, data from the Central Population Register and data from the Household Register do not correspond completely as a usually resident population definition is used which in general combines permanent and temporary residence.

7. The following variables from usually resident population data are used for the purpose of detecting possible institutional households:

(a) Number of usually resident population at the address (in combination with the type of building and number of parts/dwellings at the address). A special 8-digit identifier of the address from the Register of Territorial Units is used for linking data from all three sources;

(b) Type of resident in combination with duration of residence at the address (temporary residence is an important piece of information since according to the Residence Registration Act the institution is obliged to report the date of entry into the institution and the date of deregistration);

(c) Age and labour force status make it possible to distinguish different types of accommodation/special lodging such as student dormitories, homes for the elderly, workers' dormitories, etc.;

(d) Gender could be an indicator of relevance for some religious institutions (monastery, convent, etc.);

(e) Relation to the reference person of the household.

8. Basic methodological rules for detecting special population groups that could be considered as institutional households or detecting non-residential housing units residing at a certain address are:

- (a) More than 15 persons living in the same housing unit;
- (b) More than five citizens of Slovenia with temporary residence in the same housing unit without family ties (no relationships between spouses or parents and children);
- (c) The occupied housing unit according to the Classification of Types of Construction is not classified as a conventional dwelling (most common building type with only one non-dwelling part);
- (d) The number of residents of the housing unit is almost the same or even the same as the number of households in that housing unit;
- (e) A large number of persons living in the same household without any relationship/ family ties among them.

9. On this basis, the distinction between conventional dwellings/collective living quarters/other housing units and persons living in private/institutional/other households was developed and population groups for the census purposes were determined. The methodology was developed for the 2011 census but upgraded for the 2015 census. The main reason for implementing the methodology in quarterly population statistics was the proposal of the new European Union (EU) Regulation on Integrated European Social Statistics (IESS), which was adopted in 2019. The Regulation, which establishes a common framework for European statistics relating to persons and households, in general excludes the institutional population from sampling frames for EU social surveys (in the domains of labour force (labour force surveys, LFS), income and living conditions (surveys of income and living conditions, SILC), health (European health interview surveys, EHIS), education and training (adult education surveys, AES), use of information and communication technologies (ICT), time use (time-use surveys, TUS) and consumption (household budget surveys, HBS)).

10. The classification that is used to distinguish different types of settlements is based on the UNECE Census Recommendations and is comparable to many other countries' classifications, as presented in the new UNECE *Recommendations for Measuring Older Populations in Institutions*. The so-called internal "Type of settlement" classification consists of 31 categories, of which 14 categories belong to the "private household" types of living quarters, which are grouped into four main types:

- (a) Collective living quarters:
 - (i) Workers' dormitories (special lodging for mostly men working temporarily, but for more than one year, in Slovenia – originating almost exclusively from countries of the former Yugoslavia);
 - (ii) Hotels, apartments and other tourist accommodation facilities;
- (b) Other housing units:
 - (i) Buildings not designed for habitation without conventional dwellings (railway or fire stations, schools, hospitals, etc.);
 - (ii) Informal (non-registered) housing units and semi-permanent units (Roma settlements).

11. The possible benefit is the use of classification information for the interviewers' fieldwork. Experience shows that some population groups (such as foreign workers living in dormitories) are very hard to reach.

III. Typology of institutional household

12. As regards institutional households, the typology of institutional households is more important. Seventeen categories of the type of settlement can be aggregated into six large groups of institutional household types. An additional seventh group (persons with administrative usual residence at social work centres or charity organizations) belongs to the other households (see Table 2).

Table 2
Typology of institutional households

<i>Non-private household type</i>		<i>1 January 2019</i>				
		<i>Households</i>		<i>Population</i>		
		<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Age 65+ (%)</i>
TOTAL		627	100	40 225	100	49
INSTITUTIONAL		499	80	37 013	92	52
Student residences	Tertiary students with temporary residence	83	13	11 494	29	0
Old people's homes	Old-age persons in care	154	25	19 260	48	95
Social welfare institutions for adults	Disabled adults	57	9	1 963	5	31
Other social welfare institutions	Disabled children and youth De-institutionalized living communities	78	12	2 015	5	6
Correctional and penal institutions	Imprisoned and correction institution population	20	3	1 249	3	4
Religious institutions	Monks and nuns living in monasteries, cloisters or convents (including theological students)	107	17	1 032	3	34
OTHER		128	20	3 212	8	7
Social work centres and charity organizations	Homeless persons and other vulnerable persons	128	20	3 212	8	7

13. The “Type of settlement” codebook is in fact an address-based list and for reasons of simplicity it is assumed that an individual address equals exactly one institutional household or one type of living quarters in the case of private households (with an unlimited number of private households at the address). The list has been regularly updated quarterly since 2017 and currently (as of 1 January 2019) consists of 2,065 addresses (starting with 1,128 addresses in the Register-Based Census 2011). The additional sources of information for better classification of types of settlement are publicly available registers such as the Business Register and information found on the website of a particular address.

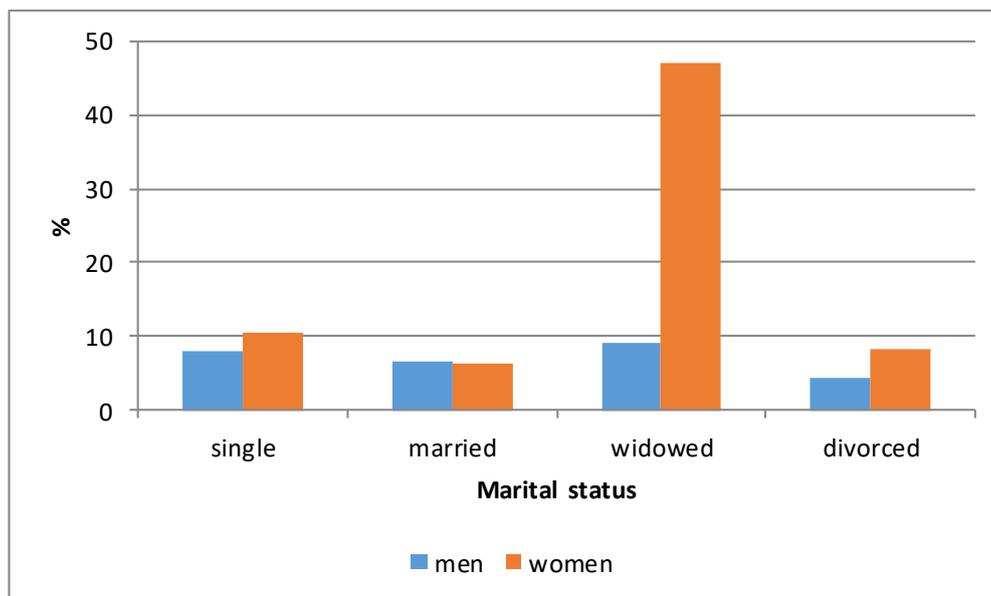
14. The same information is available for the institutional population as for the population living in private households. The number of people living in institutional households and the population living in old people’s homes is increasing year by year (see Table 3). In 2018, people in institutional households were 14 years older than the national average, which was 43.2 years. Not taking into account student dormitories, the mean age of people in institutional households was almost 74 years. The highest mean age of the population was, as expected, calculated for old people’s homes – 82.7 years.

Table 3
Institutional population, Slovenia, 2011–2019

	<i>1 January</i>				
	<i>2011</i>	<i>2015</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>
Institutional population	34.283	38.484	39.223	39.293	40.225
Institutional population (% of total population)	1.67	1.87	1.90	1.90	1.93
Institutional population (2011 = 100)	100	112	114	115	117
Old people's homes population	16 820	17 757	18 482	18 487	19 260
Old people's homes population (% of institutional population)	49.1	46.1	47.1	47.0	47.9
Old people's homes population (2011 = 100)	100	106	110	110	115

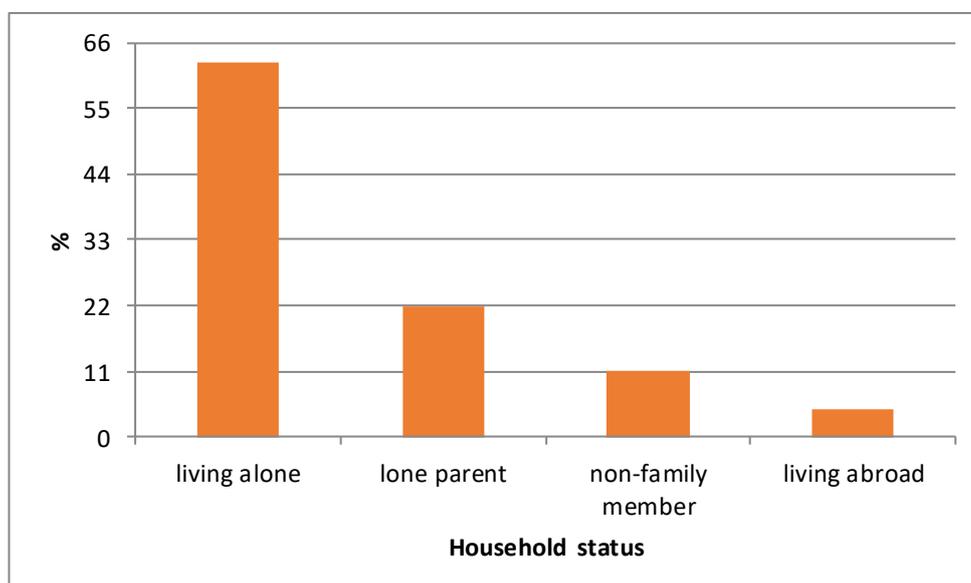
15. The register-based approach makes it possible to derive some interesting data on the family status of persons in care in old people’s homes. In line with international recommendations, families in institutional households generally are not counted. More than half of residents of old people’s homes are widowed, followed by never married persons, while the number of married and divorced members is almost equal and together they represent one quarter (Graph I).

Graph I
Persons in care in old people’s homes by formal marital status and gender, Slovenia, 1 January 2018



16. In the next step, married persons in care in old people’s homes were linked with their spouses (if the personal identification number (PIN) of the spouse was available). 334 married couples were living in the same institutional household but 29 were separated, living in different old people’s homes. They represent one third of all married persons living in old people’s homes. Two out of three spouses living in private households (with wife or husband living in an institution) were living alone, and one in five was living with children as a lone parent (Graph II).

Graph II
Household status of spouses whose spouse was living in an old people’s home, Slovenia, 1 January 2018



IV. Regional effects of distribution of capacity for older persons and the population aged 65 years or more

17. One of the basic human rights is decent living in old age with other family members at home or the right to be settled in an adequate institution. Old people's homes substitute or supplement the functions of home and family, supplying the residence, organized nutrition and social and health security. According to data from the Association of Social Institutions of Slovenia, as of 1 January 2018 there were 123 old people's homes in the public network with a capacity of almost 19,000 places. The distribution of capacity and the population aged 65 years or more by statistical regions is equalized. Due to adequate spatial distribution of capacity, 87 per cent of people in care are residing in institutions located in the same statistical regions as their permanent residences: the most in the Pomurska region (97 per cent) and the fewest in the smallest region, Zasavska (70 per cent). Persons in care originate from all municipalities (212) but old people's homes are located only in 93 municipalities.

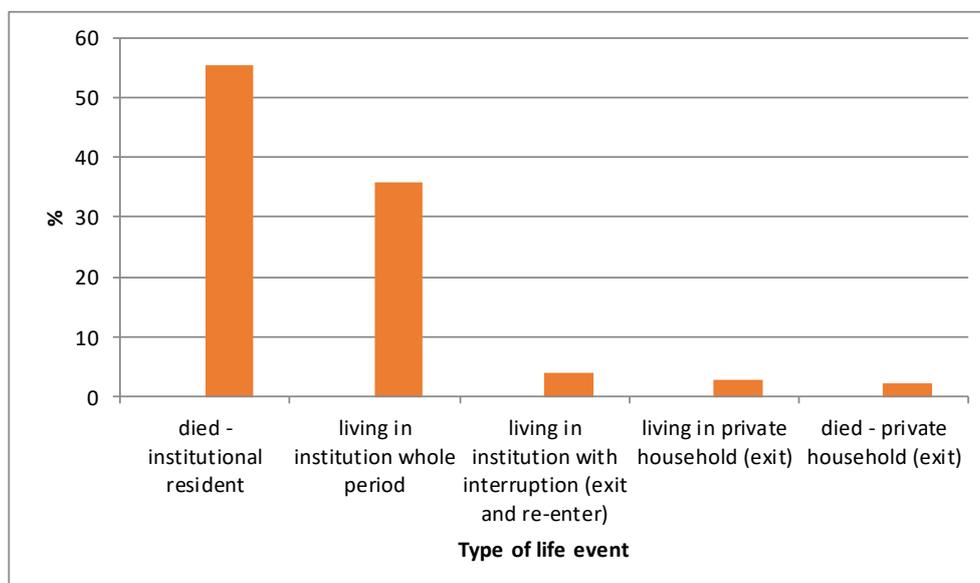
18. Since the usually resident population definition is applied, the size of the institutional population in some municipalities with a small population size could have a great impact on particular demographic indicators. The share of institutional population by municipalities ranges from 0 per cent (83 municipalities) to almost 20 per cent. In 18 municipalities the share is at least twice as high as the average for Slovenia (1.9 per cent). The simplest examples are the high share of population of specific age where old people's homes are located, or the sex ratio in the case of Šentrupert municipality which has a male prison. A consequence of the location of an institution for older population is also unrealistic crude death rates by municipalities due to the fact that the mortality in such institutions is much higher than the mortality of the population living in private households. In general, about a quarter of the institutional population living in old people's homes die every year. From the beginning of 2015 (1 January) to the end of 2018 almost 38,000 persons had their usual residence in old people's homes at least at one point in time, of whom almost 18,000 were not alive at the end of the observation period (1 January 2019).

19. The difference in crude death rate for Gornji Grad municipality is the most indicative; excluding the institutional population, it is the same as the national average (9.7 per 1,000 population), but taking into account the usually resident population definition it is 27.7. Since mortality data are an indirect indicator of the general health status in society, the National Institute of Public Health decided that for the purpose of disseminating mortality data for municipalities it would not use the data on usual residence but the data on the last permanent residence, since the institutional population is as a rule registered as temporarily residing at the address of the institution.

V. Life cycle of residents of old people's homes

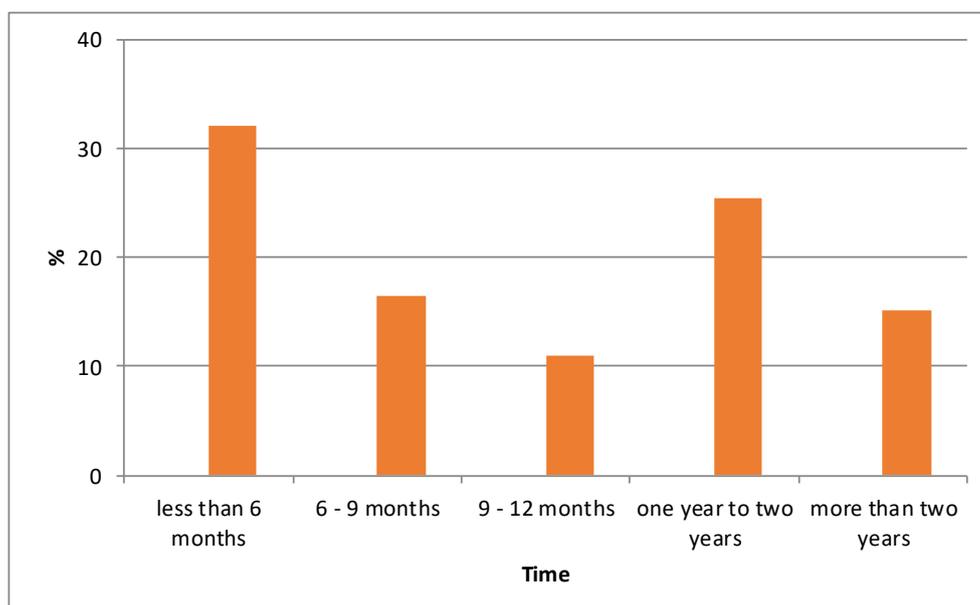
20. The regular quarterly register-based population production permits monitoring of the institutional generations by calculation of the average time spent in the institution before exit (death or return to a private household). "Institutional generations" are considered on the basis of historical data on population residing in institutional households at a certain point in time. One in three residents of old people's homes as of 1 January 2015 was still residing in the same institution after four years without any interruption. Around 700 persons were institutional residents at the end of the observed period but with at least one interruption (not being a member of the institutional household at some particular point(s) in time). 58 per cent of residents as of 1 January 2015 died in the observed period (2015–2018), of whom 96 per cent with usual residence in the institution at the time of death and only 4 per cent who exited the institution before death. The less numerous group (480) are persons who stay only temporarily in the old people's home and then return (usually) to the household from which they originated.

Graph III
Institutional population of old people’s homes (as of 1 January 2015) by life events in the 2015–2018 period



21. More than 20,000 new entries to old people’s homes were recorded in the four-year period 2015–2018. On average, there are just over 400 new persons in care in institutional households per month. However, the most intriguing conclusion from the analyses of new entries to the old people’s homes is that 36 per cent of newcomers died before the end of the observation period (1 January 2019). Even more interesting, 60 per cent of these died in the first year after settlement, one in three even in the first six months. As the intended stay (and not actual stay) is considered as a part of the definition of usual residence, in line with Article 2, paragraph d), sub-paragraph ii) of the EU Regulation on European demographic statistics (Official Journal of the European Union, L330/39), the regional indicators could be unrealistic as described above. The Statistical Office of the Republic of Slovenia will consider changing somewhat the processing of quarterly stock population data to exclude at least the persons who moved into old people’s homes in the last three months before the reference date and who died in the meantime, since data on the population are prepared with a delay of three months after the reference date.

Graph IV
Persons in care who died as residents of old people’s homes, by time spent at the institution, new entries between 1 January 2015 and 31 December 2018



VI. Is the traditional age limit for defining older persons (65+) still adequate?

22. Because life expectancy at birth is increasing (in Slovenia it has increased by seven years over the past 25 years), it is questionable whether the traditional age limit for defining older persons (65+) is still adequate. The UNECE Recommendations for Measuring Older Populations in Institutions deal with this topic in Chapter 2.3.2. It can be seen that seven out of 36 countries that responded to the Task Force questionnaire set a different age cut-off than 65 years.

23. Here the changes in the life cycle are presented, focusing on how the household or family status of older persons is changing with age and as a result also due, for example, to children leaving their family or children forming their own families in the existing household, loss of spouse or partner, divorce, inability to live independently or other personal circumstances.

24. More than 60 per cent of persons in the age groups 55–64 years and 65–74 years in Slovenia were still living with their spouses or partners in 2018. The only difference is that the share of spouses/partners with children was almost twice as high in the age group 55–64 years (one in three were living with at least one child, while among 65–74-year-olds the share was one in five).

25. With increasing age, the shares of spouses (with or without children) were rapidly declining, so that at age 85+ only one in five was still living with their spouses/partners. It is interesting that the share of lone parents did not grow much with age and that the share of older persons living alone grew rapidly (by about 8 percentage points among individual broad age groups after 74 years of age). Among persons aged 85+ four out of ten were living alone; only 10 per cent were never married and 80 per cent were widowed, so that the fact that they are living alone was a result of death of spouse and children leaving the family. Due to longer life expectancy of women, 84 per cent of persons aged 85+ living alone were women.

26. The results of population ageing are also reflected in the share of persons who, due to their personal circumstances, are no longer capable of living alone or for whom relatives can no longer care, so that they seek residence in appropriate institutions. The shares of older persons living in institutional households are increasing with age. At age 80, exactly 5 per cent of persons lived in institutional households; at age 84 around 9 per cent and at age 90+ more than one in five.

Table 4

Population by age groups and household / family status, Slovenia, 1 January 2018 (Age group = 100)

Household / family status	Age groups (years)						
	55-59	60-64	65-69	70-74	75-79	80-84	85+
TOTAL	100	100	100	100	100	100	100
Spouse/partner without children	25.7	36.1	41.3	42.9	39.1	30.2	16.0
Spouse/partner with children	40.4	29.6	22.2	16.6	12.5	8.3	3.7
Lone parent	9.0	8.0	7.8	8.2	9.4	10.9	11.4
Child	3.9	1.9	0.7	0.1	0.0	0.0	0.0
Living alone	16.3	18.9	21.1	23.9	27.8	34.0	38.7
Non-family member of multi-person household	3.9	4.6	5.6	6.4	8.1	9.8	12.0
Member of an institutional household	0.8	0.9	1.3	1.8	3.2	6.7	18.1

27. Data on the household and family situation, shown by five-year age groups from the register-based population census 2018 as of 1 January, confirm the hypothesis that the age

limit of 65 years is no longer the most appropriate for defining older persons. As regards the life cycle, generations aged 65–74 were much more similar to those 10 years younger than to those aged 75–84. Due to later labour market entry of young people, longer years of service, postponement of births, later departure of young people from primary families and longer life, it can be expected that the current relationships between individual positions in the family or household will gradually but persistently shift to older ages.

Table 5

**Population by age groups and household / family status, Slovenia, 1 January 2018
(Household / family status = 100)**

<i>Household / family status</i>	<i>Total</i>	<i>Age groups (years)</i>						
		<i>55-59</i>	<i>60-64</i>	<i>65-69</i>	<i>70-74</i>	<i>75-79</i>	<i>80-84</i>	<i>85+</i>
Spouse/partner without children	100	16.1	22.3	22.0	15.9	12.9	7.4	3.4
Spouse/partner with children	100	36.9	26.7	17.2	9.0	6.0	3.0	1.2
Lone parent	100	21.7	19.0	16.0	11.7	12.0	10.2	9.4
Child	100	59.8	29.3	9.5	1.2	0.2	0.0	0.0
Living alone	100	15.1	17.2	16.6	13.1	13.6	12.3	12.1
Non-family member of multi-person household	100	13.3	15.4	16.3	13.1	14.8	13.1	14.0
Member of an institutional household	100	5.5	6.0	7.6	7.5	11.7	18.4	43.3

VII. Conclusion

28. Since most of the statistics on social topics originate from surveys, such as those included in the new EU Regulation on Integrated European Social Statistics, the institutional population is in general excluded from sampling frames. However, the Slovenian register-based system permitted analysis this population by different demographic characteristics, with a focus on persons living in old people's homes. It was found that this population differs much from those living in private households.

29. Following the definition of population by usual residence in line with the EU Regulation on European Demographic Statistics, not identifying persons living in old people's homes can affect ageing-related statistics and some methodological aspects. Based on these findings —such as that 36 per cent of newcomers to old people's homes died before the end of the observation period — a redefinition of the statistical process of producing quarterly stock population data in Slovenia will be considered.

30. Data on the household and family situation from the latest register-based population census (2018) and comparison of family statuses by age groups showed that in the Slovenian case the age limit of 65 years is no longer the most appropriate for determining older persons. Namely, the generation aged 65–74 no longer differs from the younger age group as it did in the past.