HC2.1. LIVING SPACE

Definitions and methodology

Space is an important dimension of housing quality. Ample space for all household members can be defined in different ways (Indicator HC2.2 considers housing quality in terms of sanitary facilities). Several studies outline the negative effects of overcrowded dwellings on health and particularly on child outcomes (Eurofound, 2012; Solari and Mare, 2012).

This indicator uses (1) the average number of rooms per household member to illustrate how space constraints differ across countries and households within countries and (2) overcrowding for an alternative measure of dwelling space that takes into account household composition. Rooms refer to bedrooms, living and dining rooms and, in non-European countries, also kitchens (see the section on Data on Comparability Issues for further details).

While the number of rooms available to household members highlights the importance of adequate space for housing quality, it makes no distinction between the different needs of households depending on their composition. Yet, the space requirements for a couple-family with, for example, three toddlers may be quite different compared to those of a single-parent family with two sons aged 21 and 16 and a daughter aged 17. The overcrowding rate takes into account households’ different personal space needs depending on household members’ age, gender and relationship.

This indicator follows the EU-wide agreed definition of overcrowding (Eurostat, 2016). A household is considered overcrowded if it does not have at its disposal a minimum number of rooms equal to:

- one room for the household;
- one room per adult couple in the household;
- one room for each single person aged 18 and over;
- one room per pair of single persons of the same sex between 12 and 17 years of age;
- one room for each single person between 12 and 17 years of age and not included in the previous category;
- one room per pair of children under 12 years of age.
Key findings

Outright owner households have on average more rooms per person than owners with a mortgage or tenants

HC2.1.1. Average number of rooms per household member by tenure, 2018 or latest year available

Panel A: Average number of rooms per household member, by type of ownership

Panel B: Average number of rooms per household member, by type of tenancy

1. For Chile, Mexico, Denmark, the Netherlands and the United States no information on subsidized tenants due to data limitations. See section "Data and comparability issues" of Indicator HC2.1 on limits to comparability across countries due to the definition of rooms.

2. Data for Japan only available on the respondent level due to data limitations. Results therefore refer to the population, rather than to households.

3. Data for Canada are adjusted by Statistics Canada based on the assumption of the presence of a kitchen in dwellings where it is expected.
a) Note by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

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Figure HC2.1.1 shows for owners (Panel A) and tenants (Panel B) the average number of rooms per household member (see data under HC.2.1.A1 in the online worksheet for earlier years). Outright homeowner households have on average more rooms at their disposal than owners with a mortgage. This relates in part to people’s housing decisions over the life cycle: typically, younger people with children are owners paying off a mortgage and frequently become outright owners by the time their children move out (also see indicator HM1.3 on tenure structure in general).

Outright owners in many Central and Eastern European countries, Chile, Greece, Italy, Korea and Mexico have on average fewer than 2 rooms per household member. In most Southern European, Nordic and German-speaking countries, as well as in Estonia, France, and Japan, homes that are owned outright have on average between 2 and 3 rooms per household member. Canada, Ireland and the United States top the list as outright homeowners have, on average, well over 3 rooms per household member: the United States has the highest average by far with 3.8 rooms per household member.

In most countries, tenant households (Panel B) have on average a similar number of rooms per person to mortgaged households. The main exceptions are Malta (where, on average, tenants have substantially more rooms per person than owners with a mortgage) and the United States (where tenants have a substantially lower number of rooms per person on average than mortgaged owners). Tenant households in many Central and Eastern European countries live, on average, in dwellings with 1 to 1.5 rooms per household member. Private rental households in Belgium, Cyprus, Denmark, Malta, the Netherlands, Spain, Switzerland, and the United States have more than 2 rooms available per household member. In addition, tenants renting at private market rates and tenants renting in the subsidized market have a similar number of rooms per household member on average.

Figure HC2.1.2 shows the average number of rooms per household member in low-income households for owners (Panel A) and tenants (Panel B). The basic patterns observed in Figure HC2.1.1 persist across countries for low-income households: in most countries, outright owners live in dwellings with on average more rooms per household member than mortgaged owners and tenants. Yet, the differences between outright owners and owners paying off a mortgage are considerably larger for low-income households.

In several countries, the space situation is less tenuous for low-income tenants in subsidized housing than for those renting on the private market: in Germany, Ireland and Spain, for instance, low-income households in subsidized rental housing have, on average, substantially more rooms per household member at their disposal than tenants on the private market. While rules on access to subsidized housing differ across countries, social housing usually aims to offer affordable housing at decent quality (see Indicator PH4.3 on social housing). Rules to avoid overcrowding should ensure -- at least when new tenants move in – ample space for each household member.
HC2.1.2. Number of rooms per household member in low-income households by tenure type, 2018 or latest year available\textsuperscript{1, 2, 3, 4}

Panel A: Average number of rooms per household member in owner households (with and without mortgage) in the bottom quintile of the income distribution

Panel B: Average number of rooms per household member in tenant households (private market and subsidized rent) in the bottom quintile of the income distribution

1. For Chile, Mexico, Denmark, the Netherlands and the United States, no information on subsidized tenants due to data limitations. See section "Data and comparability issues" of Indicator HC2.1 on limits to comparability across countries due to the definition of rooms.

2. Low-income households are households in the bottom quintile of the (net) income distribution. In Chile, Mexico, Korea and the United States gross income is used due to data limitations.

3. Data for Japan only available on the respondent level due to data limitations. Results therefore refer to the population, rather than to households.

4. Data for Canada are adjusted by Statistics Canada based on the assumption of the presence of a kitchen in dwellings where it is expected. "Bottom quintile" for Canada is defined as the first quintile of adjusted after-tax household income.

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Overcrowding is higher in low-income households but also occurs in better-off households in many countries

Overcrowding rates vary considerably across countries (Figure HC2.1.3, see online worksheet HC2.1.A3 for earlier years and additional quintiles). While in some countries, less than 3% of households are concerned regardless of their income situation (Canada, Cyprus, Ireland, Malta, Japan, and Spain), the problem is much larger in other countries, particularly Mexico and many Central and Eastern European countries. In Bulgaria, Croatia, Latvia, Poland, Romania and the Slovak Republic overcrowding is an issue even for households in the top quintile of the income distribution – in each, more than 20% of top-quintile households face overcrowding.

Overcrowding rates among households in the bottom quintile are highest in Latvia, Mexico, and Poland, with overcrowding affecting around 35% or more of low-income households. By contrast, less than one in ten low-income households lives in overcrowded dwellings in Estonia, Malta, Cyprus, Ireland, Japan, Korea, the Netherlands, Portugal, Spain, the United Kingdom and the United States.

In nearly all countries, the overcrowding rate decreases as household income increases. In most countries, overcrowding rates in the bottom quintile are clearly higher than for households in the third quintile. Overcrowding rates for households in the third quintile of the income distribution are often similar to those for households in the top quintile of the income distribution. In a few countries, overcrowding rates either: (1) vary little across the entire income distribution (e.g. Bulgaria, Croatia, Estonia, Romania and Slovak Republic); or (2), vary only slightly between the bottom and the middle part of the income distribution (e.g. Chile, the Czech Republic, Korea, and the United Kingdom).
HC2.1.3. Overcrowding rates in households across the income distribution, 2018 or latest year available 1, 2, 3, 4

Share of overcrowded households, by quintiles of the income distribution, in percent

1. For Chile, Mexico, Denmark, the Netherlands and the United States no information on subsidized tenants due to data limitations. See section "Data and comparability issues" of Indicator HC2.1 on limits to comparability across countries due to the definition of rooms.

2. Low-income households are households in the bottom quintile of the (net) income distribution. In Chile, Mexico, Korea and the United States gross income is used due to data limitations.

3. Data for Japan only available on the respondent level due to data limitations. Results therefore refer to the population, rather than to households.

4. Data for Canada are adjusted by Statistics Canada based on the assumption of the presence of a kitchen in dwellings where it is expected. Income quintiles for Canada are based on adjusted after-tax household income.

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Overcrowding is more likely to occur in low-income tenant than in low-income owner households

In most countries, the difference in overcrowding rates between the bottom and the third quintile is more pronounced among tenant households (Panel B of Figure HC2.1.4) than among owner households (Panel A of Figure HC2.1.4, see HC2.1.A4 in the online Annex for earlier years and a further breakdown of tenure type). At more than 15 percentage points, the greatest differences by income level for tenant households are in Austria, Denmark, Luxembourg, Mexico, Norway, the Slovak Republic, and Sweden (Panel B). There are only small differences in overcrowding rates between low and middle-income tenant households in some countries where overcrowding rates are high (e.g. Bulgaria and Hungary) and in some countries where overcrowding rates are low (e.g. Canada and Malta).

Last updated 16/12/2019
HC2.1.4. Overcrowding rates of low and middle-income households, by tenure type, 2018 or latest year available 1, 2, 3, 4

Panel A: Share of overcrowded owner households (with and without mortgage), bottom and third quintile of the income distribution, in percent

Panel B: Share of overcrowded tenant households (renting at market or subsidized rate), bottom and third quintile of the income distribution, in percent

1. For Chile, Mexico, Denmark, the Netherlands and the United States no information on subsidized tenants due to data limitations. See section "Data and comparability issues" of Indicator HC2.1 on limits to comparability across countries due to the definition of rooms.

2. Low-income households are households in the bottom quintile of the (net) income distribution. In Chile, Mexico, Korea and the United States gross income is used due to data limitations.

3. Data for Japan only available on the respondent level due to data limitations. Results therefore refer to the population, rather than to households.

4. Data for Canada are adjusted by Statistics Canada based on the assumption of the presence of a kitchen in dwellings where it is expected. Income quintiles for Canada are based on adjusted after-tax household income.

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Children are more likely to experience overcrowding than the adult population

Within the low-income population, children are more likely than other age groups to live in overcrowded dwellings, and senior citizens less likely (Figure HC2.1.5, refer to HC2.1.A5 for earlier years). In Latvia and Mexico, more than seven in ten children (under 18 years of age) in low-income households also live in overcrowded dwellings. In Cyprus, Ireland, Malta and the Netherlands, by contrast, less than one in ten children in low-income households also live in overcrowded dwellings.

Differences in overcrowding rates between age groups are often largest in Central and Eastern European countries but are also considerable in Italy, Korea, Mexico and Sweden. As couples have children they need more space yet may be forced to live in overcrowded quarters if they lack affordable alternatives. Tsenkova (2005), for example, reports for South Eastern European countries that high outright ownership rates among low-income households together with rising prices, particularly in the capital regions, and a small private rental market sector limit housing choices. In countries with low or very low overall overcrowding rates, the situation is largely the same for everyone not yet 65 years of age (e.g. Canada, Cyprus, Ireland, Malta, the United Kingdom and the United States).

HC2.1.5. Overcrowding rates among the low-income population, by age group, 2018 or latest year available 1,2,3

Share of population in the bottom quintile of the income distribution living in overcrowded dwellings, in percent

1. For Chile, Mexico, Denmark, the Netherlands and the United States no information on subsidized tenants due to data limitations. See section "Data and comparability issues" of Indicator HC2.1 on limits to comparability across countries due to the definition of rooms.

Last updated 16/12/2019
2. Low-income households are households in the bottom quintile of the (net) income distribution. In Chile, Mexico, Korea and the United States gross income is used due to data limitations.

3. Data for Canada are adjusted by Statistics Canada based on the assumption of the presence of a kitchen in dwellings where it is expected. "Bottom quintile" for Canada is defined as the first quintile of adjusted after-tax household income.

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Data and comparability issues

This indicator is calculated based on household surveys. For European countries, the European Union Statistics on Income and Living Conditions (EU SILC) survey is used; for Canada, calculations from Statistics Canada based on the 2016 Canada Census of Population; for Chile, the Encuesta de Caracterización Socioeconómica Nacional (CASEN); for Germany, the German Socioeconomic Panel (GSOEP); for Korea the Korean Housing Survey; for Mexico the Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH); and for the United States the American Community Survey (ACS). For Japan, the Japan Household Panel Study is used. Data in JHPS is sampled on the respondent level and not on the household level, so data reflect housing conditions for the population as individuals, rather than for households.

The Household and the Income and Labour Dynamics Survey in Australia (HILDA) only record the number of bedrooms and are therefore not included in the analysis.

While all surveys do not count bathrooms as a room, definitions differ for kitchens. JHPS counts kitchens towards the total number of rooms. EU SILC and GSOEP do not count a kitchen used exclusively for cooking as a room; a 'kitchen-cum-dining rooms' by contrast is counted as such. In ACS, CASEN, ENIGH and the Korean Housing Survey kitchens exclusively used for cooking and 'kitchen-cum-dining rooms' would both qualify as a room. For Canada, for dwellings where a kitchen would be expected, the presence of a kitchen is assumed and counted as a room. As ACS, CASEN, ENIGH the Korean Housing Survey and the data for Canada do not provide detail on which type of kitchen is counted towards number of rooms it is not possible to completely harmonize the number of rooms between EU SILC and other surveys. The overcrowding rates for European countries are thus likely to be slightly overestimated compared to other countries.

EU SILC, GSOEP and ACS also impose minimum space restrictions on rooms: In EU SILC spaces with less than four square meters are not considered rooms, in GSOEP the threshold is six square meters and in the ACS rooms "must extend out at least 6 inches and go from floor to ceiling" according to the questionnaire.
### Sources and further reading:


