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RP 1ST RESULTS 2021 N°13

# HOUSING IN 2021: CHANGE WITHIN CONTINUITY

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The population census is an essential tool: currently, it is the only source of data that makes it possible to study in detail the characteristics of dwellings and their occupants. The 2021 census reveals both continuities and changes in the housing stock and occupants in Luxembourg. The country's households continue to live mainly in large dwellings (54.4% of dwellings have a surface area of more than 120m$^2$), with a large proportion of houses (45.9%) and households (27%) having more than 80m$^2$ per occupant in their dwelling. In addition, the division of space between urban areas and less densely populated areas remains: the maps in this publication show that urban areas have dwellings with higher rents, are more densely occupied and experience higher occupant turnover. Nevertheless, there have been some significant changes, in particular the rapid reduction in the proportion of houses in the housing stock, and in the proportion of dwellings using heating oil as their fuel (27.8% in 2021, compared with 37.8% in 2011). For the first time, the 2021 census also asked households about their home's renovation needs, and homeowners about the renovation work they had carried out (29.2% had carried out energy-related work). This new information shows that the occupants of these dwellings believe that a significant proportion of the stock is in need of renovation (24.0%).

# 1. Main sources of information on housing in Luxembourg

Understanding the characteristics of dwellings and the living conditions of their occupants is proving to be a complicated task in Luxembourg, as there is no national survey dedicated to housing. The collection and use of precise administrative data on dwellings and their units will therefore have to await the establishment of two registers currently under construction: the Registre National des Bâtiments et des Logements (RNBL) and the Registre National des Logements Abordables (RENLA). Although there are generalist surveys relating to housing - such as *the European Survey of Household Income and Living Conditions (EU-SILC)*, *the Household Budget Surveys (HBS)* and the European Central Bank's *Household Financial and Consumption Behaviour Survey (HFCS)* - these do not allow for detailed analyses crossing numerous dimensions or covering small geographical areas. In addition, they are sensitive to breaks in the series due to changes in data collection methods. The 'Affordable Housing' survey comes closest to a housing survey, allowing a considerable number of questions to be asked on housing alone. Co-piloted by LISER and the Ministry of Housing and Spatial Planning as part of the Observatoire de l'Habitat and the A-HOUSE research project financed by the Fonds National de la Recherche (FNR), it is starting to deliver its first results. However, like any survey, it is based on a sample, which limits the finesse of the analyses.

In this context, the population census is a crucial source of data. Although it only takes place once every ten years, this exercise enables the a priori exhaustive collection of basic data on individuals, households and dwellings. Pending the introduction of administrative registers capable of interconnecting the various existing databases (whether communal or from ministries and administrations), the census is the only source of data enabling detailed study of the characteristics of dwellings and their occupants. The 2021 population census (RP21) joins a long list of censuses that have been carried out in Luxembourg since the beginning of the 19$^{th}$ century, making it possible to monitor trends over time (see the methodological insert below on information relating to the census).

This publication focuses on the housing conditions of private households, which make up 99.8% of all

households residing in Luxembourg[1]. The preferred scale of analysis is that of households, due to the equivalence in the census between a dwelling and a household (one dwelling = one household). This publication is structured in two parts. The first section looks at the characteristics of the housing stock (type of dwelling, date of construction, surface area, type of fuel, renovation work carried out and renovation needs). The second part of the publication deals in detail with the variables available on the housing situation of households, and in particular: the period of moving in, the average surface area per person, and the type and amount of rent paid.

## Methodology insert

The last census took place in a particular context: that of the health crisis linked to COVID-19. This context had a significant impact on the response rate. Overall, the participation rate fell from 85% for the 2011 census to 79% for the 2021 census. However, this masks greater variations in the variables that are crucial for understanding the housing situation of households in Luxembourg. For example, on the variable asking whether or not a household owns its home, the response rate has fallen sharply. The sources and consequences of a high non-response rate for this variable are discussed in the appendix. This variable will therefore not be dealt with here, but in a future report following imputations to be carried out by LISER with the support of STATEC.

This publication deals in detail only with those variables relating to housing for which the response rate is very high, or for which the response rate nevertheless allows us to detect some major trends. In the first case, these are the type of dwelling (0.5% non-response), the date of construction of the dwelling (2.4% non-response), the type of fuel used to heat the dwelling (2.1% non-response) and the renovation work carried out by the owners of their dwelling (1.9% non-response). The variables with the highest non-response rate are: the length of time since moving in (24.7% non-response), the surface area of the dwellings (21.2% non-response), the rent paid (8.8% non-response among tenants paying normal rent, themselves probably underestimated in 2021 - see appendix) and the need for renovation (25% non-response). Consequently, the results for these latter variables must be interpreted with caution, and in the light of the characteristics of households that did not respond to the tenure status variable presented in the appendix to this publication. It should be emphasised that non-responses can have a very significant impact on the results. For example, although we observe an increase in the proportion of large dwellings in 2021 compared with the 2011 census, 21.2% of dwellings have no information on their surface area. It is therefore possible that the proportion of small or large dwellings is underestimated or overestimated.

1 Collective households make up 0.2% of households in Luxembourg in the 2021 census.

# 2.
# Characteristics of the housing stock

## Houses still dominate in the least populated municipalities

Since the 2011 RP, the proportion of houses has fallen in favour of flats. In fact, in 2021, the housing stock in Luxembourg consists mainly of flats (52.8%) and houses (45.9%), while the other types[2] of dwellings (mainly farms) represent only 1.2% of the housing stock of private households. However, more than half of all respondents live in houses (Table 1). This shows that the size of households (number of members) living in houses is larger than that of households living in flats. In addition, 47.8% of conventional dwellings are in blocks of flats with three or more dwellings.

**Table 1. Share of private households and share of individuals by dwelling type in 2011 and 2021.**

| Type of accommodation | Share of dwellings in 2011 | Share of dwellings in 2021 | Share of individuals in 2021 |
|---|---|---|---|
| House | 55.6% | 45.9% | 54.2% |
| Appartment ment | 42.4% | 52.8% | 44.6% |
| Other | 2.0% | 1.2% | 1.2% |
| Total | 100.0% | 100.0% | 100.0% |

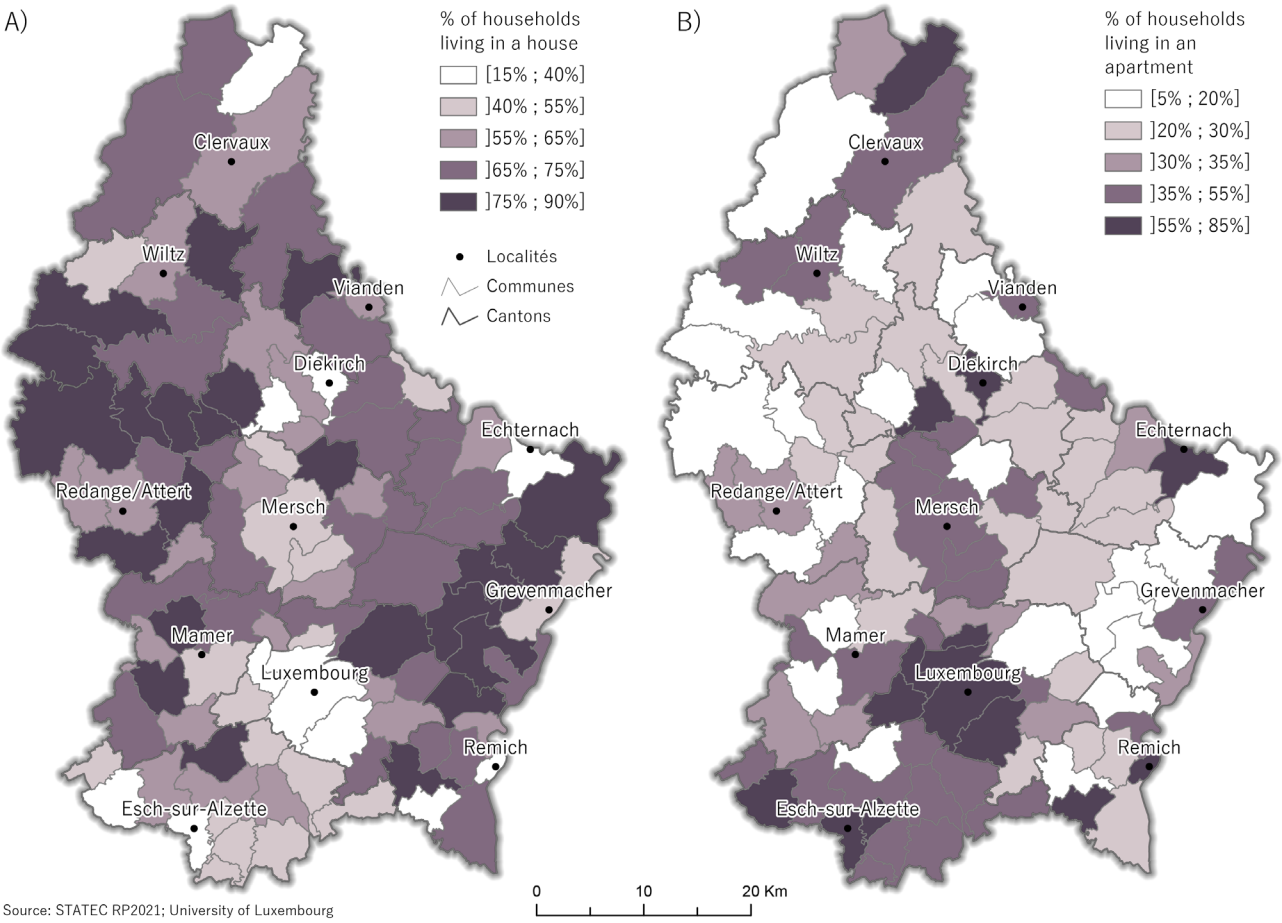
Source: STATEC RP2011, RP2021

*Note: this table is based only on private households that answered the question on the type of dwelling.*

However, the distribution of the two main types of housing by municipality remains heterogeneous in 2021 (Maps 1). Among the most populated, 14 (Luxembourg, Differdange, Esch-Sur-Alzette, Schifflange, Bertrange, Hesperange, Strassen, Walferdange, Weiswampach, Diekirch, Ettelbruck, Echternach, Mondorf-Les-Bains, Remich) are characterised by a high proportion of flats (over 55% of all dwellings in the municipality). By contrast, houses account for more than 75% of all dwellings in the less populated municipalities in the north-west and east of the country.

2 Farms make up 80.0% of dwellings in the «other types of accommodation» category. This category also includes hotels and boarding houses. Other types of accommodation such as makeshift dwellings, boarding schools for pupils or students, hostels, retirement or nursing homes, institutions for the sick, religious institutions, barracks, prisons and reformatories constitute collective households. These will be detailed in a forthcoming publication.

**Maps 1: Share of private households living in a house (A) and in a flat (B), by municipality.**




Source: STATEC RP2021; University of Luxembourg

# The ageing of the housing stock continues

The housing stock is diversified in terms of the period of construction: 17.3% of dwellings were built since the 2011 population census, compared with 18.9% before 1945 (Table 2). The recent trend towards building more flats than houses (see Note 35 from the Observatoire de l'Habitat) has consequences for the age structure of housing types: while 22.4% of all flats have been built since 2011, this is the case for only 11.7% of houses.

**Table 2. Share of private households by type of dwelling and period of construction.**

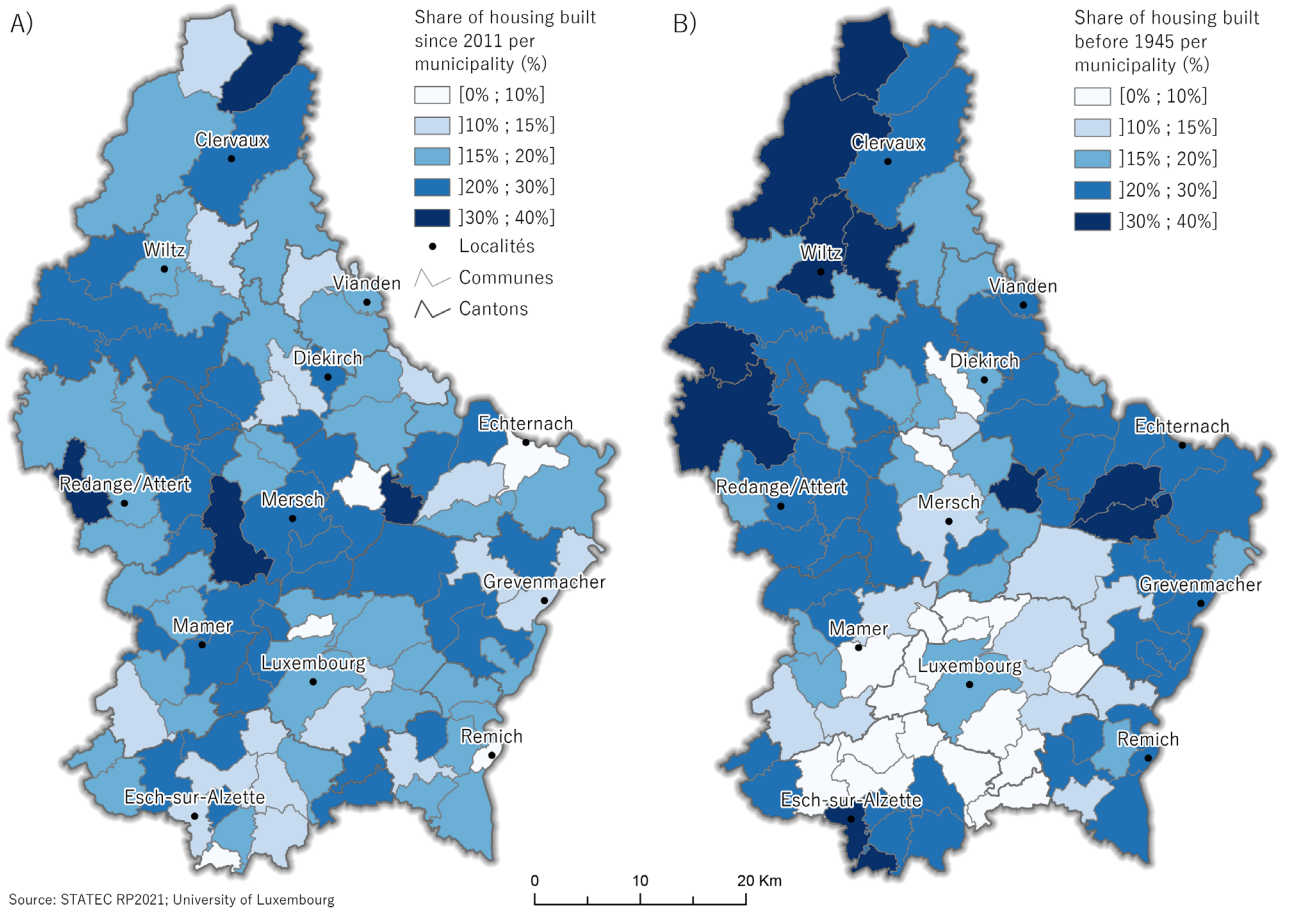
| Period of construction | Houses | Flats | Other | Total |
|---|---|---|---|---|
| Before 1945 | 23.8% | 13.6% | 65.5% | 18.9% |
| 1946-1960 | 11.7% | 9.0% | 9.2% | 10.3% |
| 1961-1980 | 20.5% | 18.1% | 8.8% | 19.1% |
| 1981-2000 | 22.2% | 19.9% | 8.5% | 20.8% |
| 2001-2010 | 10.0% | 17.0% | 3.3% | 13.6% |
| 2011 and beyond | 11.7% | 22.4% | 4.7% | 17.3% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the type of dwelling and its period of construction.*

The maps below show the spatial distribution of dwellings according to when they were built. Only four municipalities (Weiswampach, Heffingen, Ell and Helperknapp) have a proportion of dwellings built in the last decade in excess of 30% (Map 2A). Dwellings built before 1945 represent more than 30% of the stock in 11 municipalities (in the north, in the former steel basin in the south and in the east), while they represent less than 10% in the majority of municipalities in the Canton of Luxembourg and in three municipalities in the Canton of Esch-sur-Alzette (Map 2B).

**Map 2. Share of dwellings by year of construction per municipality in 2021.**




Source: STATEC RP2021; University of Luxembourg

# More than half of all homes have a floor area of over 120m²

The 2021 census reveals that 54.4% of dwellings in Luxembourg have a surface area greater than 120m² (Table 3). The distribution of dwellings by surface area has changed slightly since the 2011 census (Table 4). Large dwellings (over 150m²) still account for over a third of all dwellings in Luxembourg, while the proportion of small dwellings (under 30m²) remains very low (1.3%).

**Table 3. Share of dwellings by floor area class in 2021.**

| Useful surface area | Share of homes |
|---|---|
| Less than 30 m² | 1.3% |
| From 30 m² to less than 40 m² | 1.4% |
| From 40 m² to less than 50 m² | 2.2% |
| From 50 m² to less than 60 m² | 4.0% |
| From 60 m² to less than 80 m² | 11.3% |
| From 80 m² to less than 100 m² | 14.5% |
| From 100 m² to less than 120 m² | 10.8% |
| From 120 m² to less than 150 m² | 17.7% |
| 150 m² and more | 36.7% |
| Total | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the question on living space.*

**Table 4. Share of dwellings by floor area class in 2011 and 2021.**

| Useful surface area | 2011 | 2021 |
|---|---|---|
| Less than 30*m² | 1.6% | 1.3% |
| From 30*m² to less than 50 m² | 4.8% | 3.7% |
| From 50 m² to less than 100 m² | 30.8% | 29.8% |
| From 100 m² to less than 150 m² | 31.2% | 28.5% |
| 150 m² and more | 31.7% | 36.7% |
| Total | 100.0% | 100.0% |

*25m² in 2011

Source: STATEC, RP2021, RP2011

*Note: this table is based only on private households that answered the question on floor space.*

In terms of dwelling type and size (Table 5 below), 84.1% of households and 86.4% of individuals living in houses have a floor area of more than 120m². The proportion of flats with this floor area is lower: they represent only 15.5% of all flats and are inhabited by 20.2% of individuals. Medium-sized flats (between 60 and 100m²) make up 51.2% of all flats and are lived in by 50.3% of residents. The proportion of small flats (less than 40m²) remains low (6.1%). Furthermore, only 3.7% of residents live in these small flats. Finally, we note that 76.3% of other types of dwelling have a floor area of more than 120m². This can be explained by the predominance of farmhouses (over 80%) in this category.

**Table 5. Share of private households and individuals by dwelling type and floor area class.**

| Useful surface area | Households | | | Individuals | | |
|---|---|---|---|---|---|---|
| | Houses | Flats | Other | Houses | Flats | Other |
| Less than 30 m² | 0.0% | 2.9% | 5.3% | 0.0% | 1.7% | 2.6% |
| From 30 m² to less than 40 m² | 0.1% | 3.2% | 1.0% | 0.1% | 2.0% | 0.7% |
| From 40 m² to less than 50 m² | 0.1% | 5.0% | 1.0% | 0.1% | 3.5% | 0.5% |
| From 50 m² to less than 60 m² | 0.3% | 8.7% | 1.1% | 0.3% | 6.6% | 0.7% |
| From 60 m² to less than 80 m² | 1.8% | 23.8% | 3.7% | 1.5% | 21.7% | 3.1% |
| From 80 m² to less than 100 m² | 4.7% | 27.4% | 5.1% | 4.0% | 28.6% | 4.5% |
| From 100 m² to less than 120 m² | 8.7% | 13.6% | 6.4% | 7.7% | 15.7% | 6.1% |
| From 120 m² to less than 150 m² | 25.1% | 8.2% | 15.3% | 23.9% | 10.3% | 14.4% |
| 150 m² and more | 59.0% | 7.3% | 61.0% | 62.6% | 9.9% | 67.4% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on type of dwelling and surface area.*

# Use of heating oil declines in favour of electricity and heat pumps

The period of construction of dwellings is closely linked to the type of fuel used. The previous census showed that in 2011, 56.9% of homes were heated by gas, compared with 37.8% by oil, 3.1% by electricity and 2.3% by other fuels (wood, pellets, etc.). In 2021, 59.5% of homes still use natural gas, 27.8% oil and 12.8% other types of fuel (Table 6). Of the dwellings using oil or natural gas, a larger proportion are those built before 2000, while the use of a heat pump or electricity is increasing in dwellings built from 2000 onwards.

**Table 6. Dwellings by main fuel type and period of construction (% of all dwellings).**

| Type of fuel | Period of construction | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | Before 1945 | 1946-1960 | 1961-1980 | 1981-2000 | 2001-2010 | 2011 and after | |
| Fuel oil | 6.0% | 2.5% | 6.6% | 7.3% | 3.5% | 1.9% | 27.8% |
| Natural gas | 10.2% | 6.9% | 11.3% | 12.5% | 9.1% | 9.5% | 59.5% |
| Electricity | 1.1% | 0.4% | 0.8% | 0.6% | 0.4% | 2.1% | 5.4% |
| Heat pump | 0.2% | 0.1% | 0.1% | 0.1% | 0.3% | 2.9% | 3.9% |
| Wood | 0.4% | 0.1% | 0.1% | 0.2% | 0.1% | 0.1% | 0.9% |
| Pellets | 0.3% | 0.1% | 0.1% | 0.2% | 0.2% | 0.7% | 1.5% |
| Other | 0.3% | 0.1% | 0.2% | 0.1% | 0.2% | 0.2% | 1.1% |
| Total | 18.6% | 10.2% | 19.2% | 21.0% | 13.7% | 17.4% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the date of construction of their homes and the type of fuel used.*

In 2011, of the dwellings using heating oil (37.8%), 24% were houses and 12.7% flats (RP 2011). Of homes using gas as their main fuel, 27.5% were houses and 28.9% flats (RP 2011). In 2021, of the 59.5% of dwellings using natural gas, 35.1% are flats and 23.8% are houses, while oil is used more often in houses (16.1%) than in flats (11.1%) (Table 7).

**Table 7. Dwellings by main fuel type and by dwelling type (in % of all dwellings).**

| Type of fuel | House | Flat | Other | Total |
|---|---|---|---|---|
| Fuel oil | 16.1% | 11.1% | 0.6% | 27.8% |
| Natural gas | 23.8% | 35.1% | 0.2% | 59.2% |
| Electricity | 1.5% | 3.8% | 0.1% | 5.4% |
| Heat pump | 2.7% | 1.2% | 0.0% | 3.9% |
| Wood | 0.6% | 0.1% | 0.1% | 0.9% |
| Pellets | 0.8% | 0.6% | 0.0% | 1.5% |
| Other | 1.1% | 0.3% | 0.0% | 1.4% |
| Total | 46.6% | 52.3% | 1.1% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the type of dwelling and the type of fuel used.*

# Nearly a third of homeowners say they have carried out renovation work on their property

For the first time, the 2021 census asked owner-respondents about the renovation work carried out in their homes. Table 8 shows that 29.2% of them said they had carried out energy-related work, 21.2% had changed windows, 14.1% had carried out roofing work, 9.0% wall-related work, 3.2% cellar-related work and 2.0% floor-related work (multiple responses possible). Among owner-respondents, those living in houses declared on average 6 times more often than flat owners that they had carried out various types of renovation work.

**Table 8. Types of renovation work carried out by owner-occupiers, by type of dwelling (multiple responses)**

| Type of work carried out | Type of accommodation | | | Total |
|---|---|---|---|---|
| | Houses | Flats | Other | |
| Energy | 23.7% | 5.0% | 0.5% | 29.2% |
| Window | 17.3% | 3.6% | 0.4% | 21.2% |
| Roof | 12.2% | 1.6% | 0.3% | 14.1% |
| Wall | 7.3% | 1.7% | 0.1% | 9.1% |
| Cellar slab | 2.8% | 0.4% | 0.0% | 3.2% |
| Soil | 1.7% | 0.3% | 0.0% | 2.0% |

Source: STATEC, RP2021

*Note: this table is based only on private owner households that answered the questions on the type of dwelling and the type of work carried out.*

*Note for the reader: 29.2% of owner-occupiers say they have carried out energy renovation work. 23.7% of owner-occupiers say they have carried out energy renovation work and live in houses.*

Unfortunately, the census data do not allow us to understand the origin of this difference in the renovation rate between houses and flats. However, we can put forward two hypotheses. The first is linked to the proportion of older homes (see Table 2). More than 78% of houses in Luxembourg were built before 2000, compared with 60% of flats, which could indicate that, on average, there are more houses in need of renovation that are actually renovated. The second hypothesis concerns the feasibility of renovation work, which represents a significant financial burden for households. It is possible that in apartment blocks, inhabited by less well-off households or by households in arrears with their service charges, the implementation of renovation work poses a problem. This problem may also affect homeowners, particularly the elderly, those living alone or those on low incomes.

In addition, the various types of renovation work are particularly relevant to homes built before 2000 (Table 9).

**Table 9. Percentage of owner-occupiers by type of renovation work carried out and by period of construction.**

| Type of work carried out | Period of construction | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | Before 1945 | 1946-1960 | 1961-1980 | 1981-2000 | 2001-2010 | 2011 and after | |
| Energy | 7.5% | 4.2% | 8.7% | 7.0% | 1.1% | 0.7% | 29.2% |
| Window | 5.3% | 2.9% | 6.7% | 5.2% | 0.6% | 0.4% | 21.2% |
| Roof | 4.2% | 2.4% | 4.0% | 2.5% | 0.5% | 0.5% | 14.1% |
| Wall | 2.5% | 1.4% | 2.6% | 1.7% | 0.4% | 0.4% | 9.0% |
| Cellar slab | 0.9% | 0.5% | 0.8% | 0.7% | 0.1% | 0.2% | 3.2% |
| Soil | 0.7% | 0.3% | 0.4% | 0.2% | 0.1% | 0.2% | 2.0% |

Source: STATEC, RP2021

*Note: this table is based only on private owner-occupied households that answered the questions on the date of construction of the dwelling and the type of fuel used.*

*Note for the reader: 29.2% of owner-occupiers say they have carried out energy renovation work. 7.5% of owner-occupiers say they have carried out energy renovation work and live in dwellings built before 1945.*

Among owner households living in the same dwelling for 20 years or more, 37.8% say they have carried out energy renovation work, compared with 14.9% among those living in the same dwelling for 2 years or less (Table 10).

**Table 10. Percentage of owner-occupiers who have carried out energy renovation work, by period of moving into the dwelling.**

| Move-in period | Energy renovation work | | Total |
|---|---|---|---|
| | Yes | No | |
| 20 years or more | 37.8% | 62.2% | 100.0% |
| 11-19 years | 27.7% | 72.3% | 100.0% |
| 6-10 years | 26.1% | 73.9% | 100.0% |
| 3-5 years | 19.8% | 80.2% | 100.0% |
| 2 years or less | 14.9% | 85.1% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private owner-occupied households that answered the questions on energy renovation work and the period during which they moved in.*

## One in four respondents say their home needs renovation

The era in which homes were built has a strong influence on the quality of housing, as well as on renovation needs. Also for the first time, the 2021 population census asked residents about their renovation needs. The number of households that did not answer this question is nevertheless high (25% nationally, 42.8% in Luxembourg City). Of those who did answer this variable, 24% indicated that their dwelling required some form of renovation, the vast majority of whom lived in dwellings built before 2000 (Table 11).

**Table 11. Percentage of households indicating that their dwelling is in need of renovation, by date of construction.**

| Renovation requirements | Before 1945 | 1946-1960 | 1961-1980 | 1981-2000 | 2001-2010 | 2011 and beyond | Total |
|---|---|---|---|---|---|---|---|
| No | 11.4% | 6.3% | 12.8% | 16.2% | 12.2% | 17.1% | 76.0% |
| Yes | 6.9% | 3.4% | 5.8% | 5.5% | 1.8% | 0.7% | 24.0% |
| Total | 18.2% | 9.7% | 18.6% | 21.7% | 14.0% | 17.7% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the date of construction and the need for renovation.*

In terms of type of dwelling (Table 12), 1.6 times as many respondents living in houses indicated a need for renovation than those living in flats (14.8% versus 8.9% respectively).

**Table 12. Percentage of households indicating that their dwelling is in need of renovation, by type of dwelling.**

| Renovation requirements | Houses | Flats | Other | Total |
|---|---|---|---|---|
| No | 38.2% | 36.9% | 0.8% | 75.9% |
| Yes | 14.8% | 8.9% | 0.4% | 24.1% |

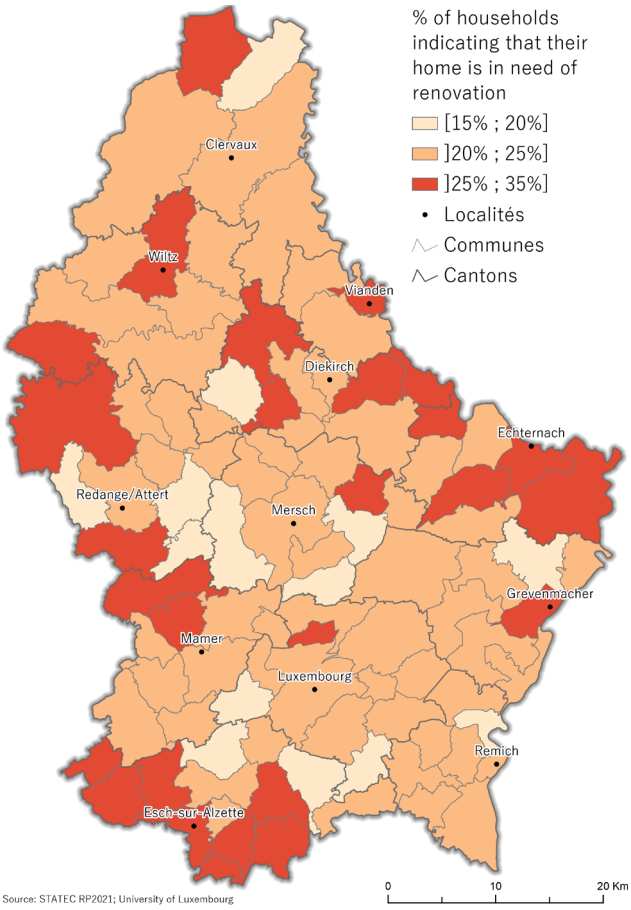
Source: STATEC, RP2021

*Note: this table is only based on private households who answered the questions on the type of dwelling and the need for renovation.*

*Reading guide: 24.1% of households indicate that their dwelling is in need of renovation. 14.8% of households indicate that their dwelling is in need of renovation and live in houses.*

Households living in municipalities with an older housing stock (see Maps 2) are more likely to say they are in need of renovation (Map 3).

**Map 3. Declaration of need for renovation of housing occupied by households at municipal level**




With regard to the types of renovation needs (Table 13, Table 14), 14.4% of respondents indicated thermal renovation, 13.3% interior renovation, 8.2% aesthetic renovation, 7.9% exterior renovation and 0.6% another type of renovation. All types of renovation need are more often reported by residents living in houses, as well as by those living in dwellings built before 1945 and between 1961 and 2000.

**Table 13. Percentage of households indicating that their dwelling is in need of renovation, by type of dwelling and type of work required (several responses possible)**

| Type of renovation | Type of accommodation | | | Total |
|---|---|---|---|---|
| | Houses | Flats | Other | |
| Indoor | 8.1% | 5.0% | 0.2% | 13.3% |
| Aesthetics | 5.0% | 3.1% | 0.1% | 8.2% |
| Exterior | 5.5% | 2.3% | 0.1% | 7.9% |
| Other | 0.4% | 0.2% | 0.0% | 0.6% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the type of dwelling and the type of renovation.*

*Reading guide: 13.3% of households indicate that their dwelling is in need of interior renovation. 8.1% of households indicate that their dwelling is in need of interior renovation and live in houses.*

**Table 14. Percentage of households indicating that their home is in need of renovation, by type of work required and by date of construction (several responses possible)**

| Type of renovation | Period of construction | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | Before 1945 | 1946-1960 | 1961-1980 | 1981-2000 | 2001-2010 | 2011 and after | |
| Thermal | 4.4% | 2.2% | 3.7% | 3.1% | 0.8% | 0.3% | 14.4% |
| Indoor | 4.0% | 1.9% | 3.1% | 3.0% | 0.9% | 0.3% | 13.3% |
| Aesthetics | 2.5% | 1.2% | 1.8% | 1.8% | 0.7% | 0.2% | 8.2% |
| Exterior | 2.4% | 1.2% | 1.9% | 1.7% | 0.6% | 0.2% | 7.9% |
| Other | 0.2% | 0.1% | 0.1% | 0.2% | 0.0% | 0.0% | 0.6% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on the date of construction and type of renovation.*

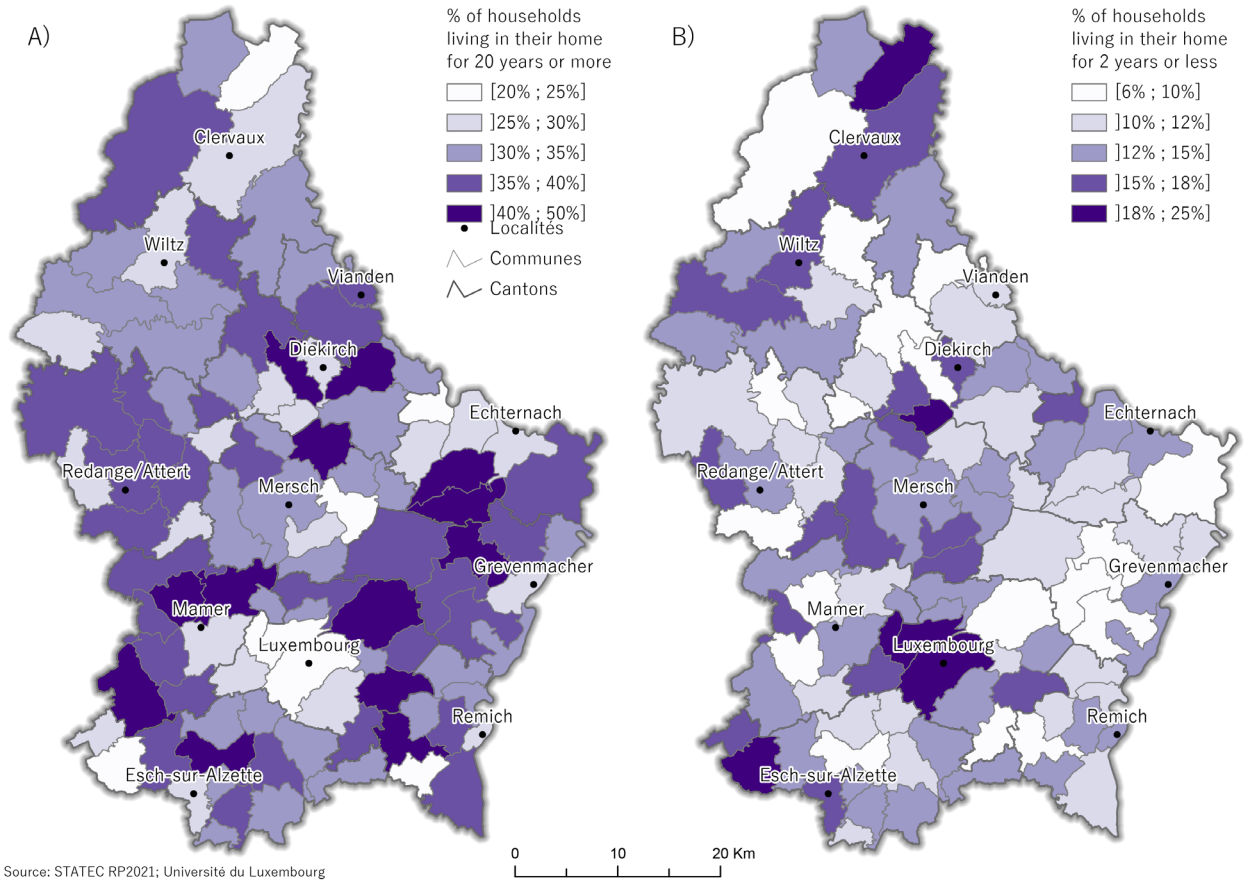
*Reading guide: 14.4% of households indicate that their home is in need of thermal renovation. 4.4% of households indicate that their dwelling is in need of thermal renovation and live in dwellings built before 1945.*

# 3.
# Housing situation of households

## Nearly two thirds of tenants have lived in their home for less than 5 years

Map 4 below shows the distribution at municipal level of two categories of households: those living in the same dwelling for 20 years or more (A), and those living in the same dwelling for 2 years or less (B). In view of the high non-response rate for this variable, particularly in the most densely populated municipalities (43% non-response in the capital, 35% in Esch-sur-Alzette), the trends shown on these maps can be regarded as minimum values. This is especially true for the map on the right, given that, as shown in the appendix, almost half of the households that have arrived in Luxembourg since 2019 did not answer the question on occupancy status. These maps show a particular spatial structure, with a percentage of households living in their dwelling for a short time in the most densely populated municipalities and, by inversion, households with more than 20 years of tenure in their dwelling in less densely populated areas (in the first ring around the capital, in the east of the country).

**Map 4. Length of time private households have been in residence, by municipality in 2021.**




Source: STATEC RP2021; Université du Luxembourg

Although it includes a large number of households that did not answer this question, it is instructive to cross-reference the length of time respondents have lived in their home with their tenure status (Table 15 below). This cross-tabulation shows that there are very few tenants who have been living in the same dwelling for a long time: 65% of tenants paying normal rent moved into their dwelling in 2016 or later, 83% in 2011 or later, and 95% of them moved in in 2001 or later. For owners, the respective figures are 27%, 42% and 62%. Free lodgers and low-rent tenants are in an intermediate position. For example, a smaller proportion of low-rent tenant households have moved in since 2016 compared with standard-rent tenants.

**Table 15. Length of time since move-in by tenure status in 2021**

| | Owner | Free accommodation | Reduced-rent tenant | Standard-rent tenant |
|---|---|---|---|---|
| 2016 and after | 27% | 37% | 55% | 65% |
| 2011 and after | 42% | 55% | 74% | 83% |
| 2001 and after | 62% | 73% | 90% | 95% |

Source: STATEC, RP2021

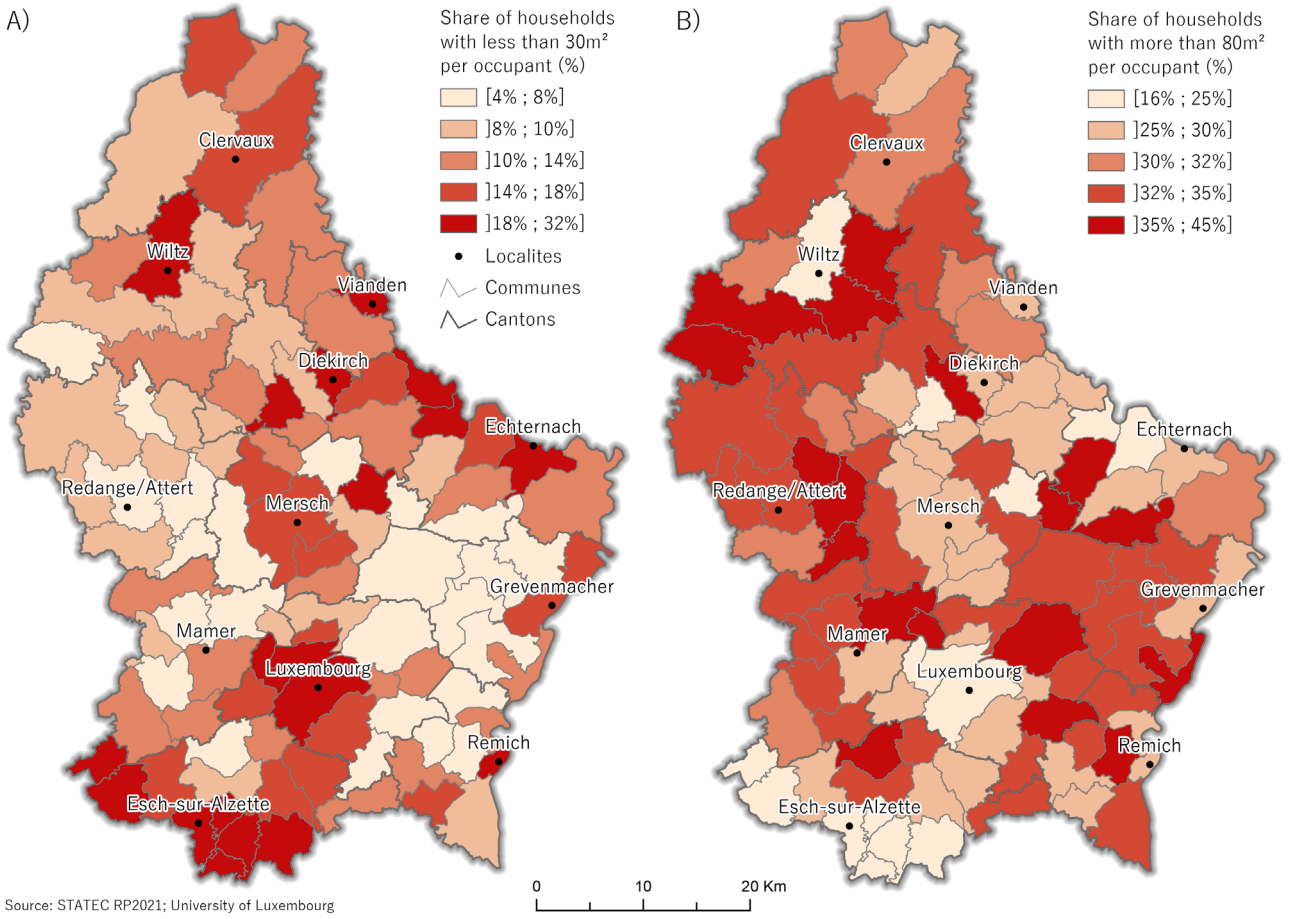
*Note: this table is based only on private households that answered the questions on housing tenure status and length of time since moving in. This cross-reference is possible for 186,350 households out of 250,296 (74.4% of households).*

*Note for the reader: 62% of owner respondents have been living in the same home since 2001 or later (i.e. they moved into their home in the last 20 years), 42% since 2011 or later and 27% since 2016 or later. This means that 38% of owners moved into their home before 2001.*

## 27% of private households have more than 80m$^2$ per occupant in their dwelling

This section looks at one measure of density: the usable floor space of the dwelling divided by the number of people in the household (adults and children counted equally). In Luxembourg, 27% of households have more than 80m$^2$ per occupant in their dwelling, while 17% have less than 30m$^2$. At municipal level (Map 5 below), this form of density is strongly correlated with the distribution of housing types (Map 1). Indeed**,** municipalities where a large proportion of households have less than 30m$^2$ per person (e.g. Luxembourg City and the southern municipalities) are characterised by a higher proportion of flats. Similarly, municipalities where the percentage of households with more than 80m$^2$ per person is highest are generally less populated and houses predominate.

**Map 5: Share of private households by dwelling density by municipality in 2021.**




Source: STATEC RP2021; University of Luxembourg

Table 16 below compares the surface area per occupant of dwellings occupied by private households with their tenure status. These results should be taken as a general indication due to a large number of non-responses for both variables. It does, however, show a significant difference between two groups: owners and households housed free of charge on the one hand, and tenants (paying normal or reduced rent) on the other. While the majority of households in the first group have more than 40m² per capita, in the renters' group the majority of households have between 20 and 60m² per capita. The most notable difference concerns households with more than 60m² per occupant: more than half of homeowners and those living rent-free are in this situation, compared with less than a quarter of tenants.

**Table 16. Dwelling occupancy density by tenure status of private households in 2021**

| | Owner | Free accommodation | Tenant standard rent | Tenant reduced rent |
|---|---|---|---|---|
| Less than 20 m² per occupant | 2% | 6% | 10% | 13% |
| From 20 m² to less than 30 m² per occupant | 9% | 8% | 22% | 24% |
| From 30 m² to less than 40 m² per occupant | 13% | 11% | 20% | 19% |
| From 40 m² to less than 60 m² per occupant | 25% | 21% | 24% | 21% |
| From 60 m² to less than 80 m² per occupant | 19% | 16% | 12% | 12% |
| 80 m² or more per occupant. | 32% | 38% | 12% | 11% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that responded to the questions on dwelling occupancy status and surface area, and that belonged to a private household. This table therefore only includes information from 184,297 households out of a total of 250,296, or 73.6% of households.*

With regard to floor space per occupant, table 17 below shows another dividing line between households residing in Luxembourg in 2021: that of migratory status. This status is identified in this table by cross-referencing the place of birth of the reference person's parents with their nationality. This cross-tabulation reveals four main categories, representing 99% of households surveyed in 2021[3]. In general, there is a significant difference in floor space per occupant between households where the reference person is of Luxembourg nationality (with, for the most part, more than 40m² per occupant) and other households (where the majority of occupancy densities are between 20 and 60m² per occupant).

But the place of birth of the parents also plays a role: among households in which the reference person had Luxembourg nationality,, at least one parent was born in Luxembourg live in dwellings with more floor space per occupant: 63% of them have more than 60m² per occupant, compared with 42% for those where both parents were born abroad. Similarly, for households where both parents of the reference person were born abroad and the reference person does not have Luxembourg nationality, differences appear according to the nationality of the reference person. Among these households, those whose reference person is a non-EU national are more often in situations where the dwelling offers less than 30m² per occupant (41% compared to 28% for those with an EU nationality outside Luxembourg) and less often in dwellings offering more than 40m² (39% compared to 52% for those with an EU nationality outside Luxembourg).

**Table 17. Dwelling occupancy density by place of birth of parents and nationality of reference person in 2021.**

| Parents' place of birth | Nationality | Less than 20 m² per occupant | From 20 m² to less than 30 m² per occupant | From 30 m² to less than 40 m² per occupant | From 40 m² to less than 60 m² per occupant | From 60 m² to less than 80 m² per occupant | 80 m² or more per occupant | Total |
|---|---|---|---|---|---|---|---|---|
| One or both parents born in Luxembourg | luxembourgoise | 1% | 4% | 9% | 23% | 22% | 41% | 100% |
| Two parents born abroad | luxembourgoise | 4% | 12% | 16% | 27% | 18% | 24% | 100% |
| Two parents born abroad | EU27 | 8% | 20% | 20% | 25% | 13% | 14% | 100% |
| Two parents born abroad | NO-EU27 | 14% | 27% | 20% | 21% | 9% | 9% | 100% |

Source: STATEC, RP2021

*Note: this table is only based on private households that answered the questions on surface area, nationality and parents' place of birth. This table therefore includes information from only 77.8% of households. As in publication no. 6, for people of foreign nationality and country of birth, if the country of birth of the parents is not indicated, it is considered to be foreign.*

3 For more information on these variables, see the publication RP 1ers résultats 2021, N°6, L'arrière-plan migratoire de la population du Grand-Duché de Luxembourg : https://statistiques.public.lu/dam-assets/recensement/publication-6/docs/rp06-version-fr-v6-131023.pdf

# More than half of renting households pay between €10 and €20 per m²

The 2021 census shows that of the tenants in Luxembourg who responded to the survey, 91.6% pay standard rent and 8.4% pay reduced-rate rent. This latter group includes people living in affordable rented accommodation, but also accommodation with a rent below the market price made available by individuals, companies or other types of private or public landlords. Table 18 below shows that more than half of tenants pay a rent of between €10 and €20/m². However, of those paying a reduced rent, over 70% pay less than €10/m², compared with only 12% of tenants paying a standard rent. By contrast, more than a quarter of tenants paying standard rent and only 5.4% of tenants paying reduced rent pay more than €20/m². The following analysis focuses on the distribution of tenants paying standard rent.

**Table 18. Share of tenants by standard or reduced rent level in 2021.**

| | Tenants paying a : | | All tenants |
|---|---|---|---|
| Rent classes | standard rent | reduced rent | |
| €4.9/m² and under | 2.1% | 26.9% | 4.2% |
| between €5 and €9.9/m² | 12.5% | 44.9% | 15.2% |
| between €10 and €14.9/m² | 29.8% | 17.4% | 28.7% |
| between €15 and €19.9/m² | 28.0% | 5.3% | 26.1% |
| between €20 and €24.9/m² | 16.0% | 2.2% | 14.9% |
| between €25 and €39.9/m² | 10.0% | 2.4% | 9.4% |
| €40/m² and more | 1.5% | 0.8% | 1.5% |
| Total | 100.0% | 100.0% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the question on rent.*

If we compare the standard rents for the two main types of accommodation (flats represent 85% and houses 14% of rented accommodation), the median rent for houses is €11/m² , while it is €18/m² for flats.

Furthermore, 73.3% of tenants in houses pay less than €15/m², while 67.5% of tenants in flats pay more than €15/m² (Table 19). These differences are directly linked to the surface area of the dwellings: houses are often larger and the rent per m² is cheaper than for flats, which are generally smaller.

**Table 19. Share of tenants by standard rent level and type of dwelling in 2021.**

| Rent classes | Houses | Flats |
|---|---|---|
| €4.9/m² and under | 6.5% | 1.0% |
| between €5 and €9.9/m² | 30.3% | 6.8% |
| between €10 and €14.9/m² | 36.5% | 24.8% |
| between €15 and €19.9/m² | 18.4% | 29.1% |
| between €20 and €24.9/m² | 5.8% | 19.8% |
| between €25 and €39.9/m² | 2.3% | 15.7% |
| €40/m² and more | 0.3% | 2.8% |
| Total | 100.0% | 100.0% |

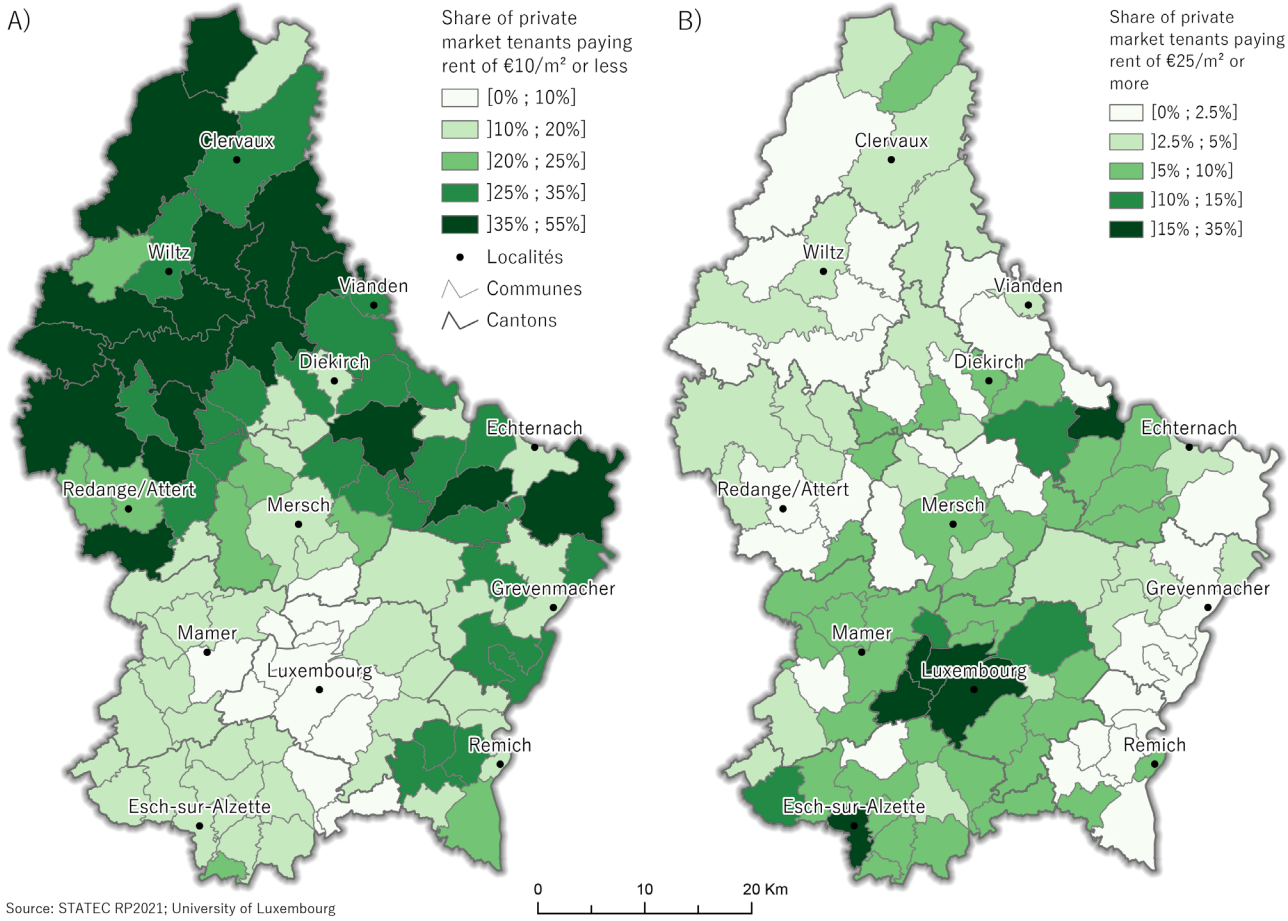
Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on rent and type of accommodation.*

Map 6 below shows the distribution at municipal level of two categories of tenant households paying a standard rent: on the left-hand map, those paying a low rent (10€/m² or less) and, on the right-hand map, those paying a high rent (25€/m² or more). These maps show a well-known fact in Luxembourg: the highest rents are charged in the capital and its inner suburbs, as well as in the south of the country. Conversely, a large proportion of tenant households pay relatively low rents in the northern half of the country.

It is important to note here that this analysis concerns the 44,076 tenant households paying normal rent who provided the rent they paid and the surface area of their dwelling; the 4,270 tenants of this type for whom one or both of these items of information were missing were excluded (i.e. a loss of 8.8% out of a total of 48,346 tenant households). However, an undoubtedly larger number of tenant households are also missing from this analysis: those who did not answer the question on their tenure status. As indicated in the appendix to this publication, these 'missing' households are more likely to be recent arrivals living in the country's largest cities. It is therefore likely that the number of renter households paying high rents is underestimated in the map on the right below, particularly in Luxembourg City and Esch-sur-Alzette.

**Map 6. Rent per m² paid by private renter households paying standard rent by municipality in 2021.**




Source: STATEC RP2021; University of Luxembourg

Table 20 below shows the same rent categories, but according to the country of birth of the household's reference person. The fact that households with a reference person born in Luxembourg more often pay a low rent (10€/m² or less) and less often a high rent (25€/m² or more) is due both to their lower concentration in urban centres and to the fact that rents during the lease are lower than those charged on new contracts. On the other hand, what is more surprising is the fact that there are significant differences between the rents charged on new contracts, which do not seem to belong to different migratory waves. Households with a reference person born in an Asian country are the most likely to pay high rents, followed by those with a reference person born in a country in the Caribbean, South or Central America. These variations may be due to different preferences (the size of the home or its location), or to differences in socio-economic profiles: people born in Asia are over-represented in specialised scientific and technical activities, finance and information, compared with those born in South and Central America[4].

4 See RP1ers Résultats n°12, Les résidents actifs. Dynamic and segmented employment.

**Table 20. Rent per m² paid by private households by country of birth of the reference person in 2021.**

| Country of birth | Percentage of households with a rent of €10/m² or less | Percentage of households paying more than €10/m² and less than €25/m² | Percentage of households with a rent of €25/m² or more | Total |
|---|---|---|---|---|
| Luxembourg | 20.1% | 72.9% | 7.0% | 100.0% |
| Other European Union country | 13.3% | 69% | 17.7% | 100.0% |
| Elsewhere in Europe | 11.4% | 69.7% | 18.9% | 100.0% |
| Africa | 11.4% | 69.1% | 19.5% | 100.0% |
| Caribbean, South or Central America | 7.2% | 68.2% | 24.6% | 100.0% |
| North America and Oceania | 7.0% | 71.0% | 22.0% | 100.0% |
| Asia | 8.5% | 61.8% | 29.7% | 100.0% |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the questions on rent, floor space and country of birth.*

Table 21 below shows the monthly rents paid in Luxembourg according to the 2021 census, for all types of dwellings combined, and without taking into account the surface area of the rented dwelling. These figures, which are undoubtedly underestimated due to the large number of "missing" households (see appendix), nevertheless allow us to establish the orders of magnitude. In total, the 44,076 households paying standard rent in 2021 transfer almost 60 million euros per month to their landlords, which is equivalent to almost 720 million euros per year. According to the results of the 2021 wave of the HFCS survey, 29.8% of households in Luxembourg own one or more properties that are not their main residence - this figure can therefore be taken as an estimate of the number of private landlords in the country, although it could include second homes or properties abroad. Roughly speaking, we can say that between 20% and 30% of the population (private market tenants) transfer €60 million each month to another group of the population representing 30% of households (landlords).

**Table 21. Rent paid by private households in 2021.**

| Monthly rent paid | Number of households | Total monthly rents (€) | Average monthly rent (€) |
|---|---|---|---|
| 3,000 and over | 1 354 | 4 945 868 | 3 653 |
| Between €1,500 and €2,999 | 13 210 | 24 707 332 | 1 870 |
| 1,500 and under | 29 512 | 30 315 892 | 1 027 |
| Total | 44 076 | 59 969 092 | 1 361 |

Source: STATEC, RP2021

*Note: this table is based only on private households that answered the question on rent.*

In monetary terms, it is the renter households paying 1,500 euros or less per month that contribute the most; relative to their number, it is the 3% of renter households paying more than 3,000 euros per month. Of the 60 million euros in rent paid each month in Luxembourg, 22.5 million (almost 38%) come from homes rented in Luxembourg City, 3 million (5%) from homes in Esch-sur-Alzette and 2.3 million from homes in Strassen (4%). The 7 other municipalities generating more than one million euros in monthly rent - Hesperange, Differdange, Dudelange, Pétange, Bertrange, Mamer and Walferdange (in descending order) - account for a total of 10.5 million euros (18% of the total). Ten municipalities therefore generate 64% of all rents paid in Luxembourg in 2021.

# Conclusions

The 'housing' variables in the 2021 population census make it possible to update information on the housing stock in Luxembourg and its characteristics, and provide information on the situation of households in their homes. Due to the particular health context at the time of the 2021 census, the overall response rate is lower than for previous editions. The presentation of the variables relating to housing in this census is therefore planned in two stages. In this publication, we have dealt in detail only with those variables for which the response rate is very high (type of dwelling, period of construction, type of fuel, renovation work carried out) or for which a sufficient response rate nevertheless allows us to see some major trends (rent paid, surface area occupied, age of dwelling, need for renovation). Therefore, in order to provide a more complete picture of the situation regarding household housing in Luxembourg, imputations will be carried out by LISER with the support of STATEC in the coming months, including on the overall number of owners and tenants.

# Appendix 1. Methodological insert

**Impact of the response rate on the proportion of tenants and owners in Luxembourg**

In view of the high proportion of households that did not answer the question on their tenure status (i.e. whether they own or rent their home) in the context of a population census, the question is whether the data collected on 76.4% of the population can be used to find out the overall proportion of homeowners in Luxembourg. This is a crucial statistic in the context of a significant rise in house prices between 2011 and 2021, and more recently in a crisis in access to property since the rise in interest rates. The role of the population census in capturing the proportion of homeowners in Luxembourg is also essential, given the large number of breaks in the EU-SILC series (in which the homeownership rate fluctuates between 67.6% and 74.7% between 2011 and 2023). The question is therefore whether the households that did not respond to the census question on their tenure status are representative of the general population: are as many of those who did not answer the question homeowners as compared to those who did answer it? Some cross-tabulations with variables that are virtually complete thanks to the use of administrative data (municipality of residence, country of birth and year of immigration) seem to indicate that there is a relatively large bias among those who did not provide information on their tenure status.

**Municipality of residence**. For tenure status, the response rate was 59% in Luxembourg City and 67% in Esch-sur-Alzette, compared with 94% in Steinsel and 89% in Niederanven. This means that half of the households that did not respond to this variable lived in the country's two most populous municipalities: 41% of them lived in Luxembourg City and 9% in Esch-sur-Alzette. The proportion of total households that did not fill in this variable residing in these two towns is therefore twice as high as the proportion of the total population residing there (25% in 2021). The over-representation of these two towns among the households that did not respond to the survey is particularly problematic for calculating the overall home ownership rate in the country. In fact, these municipalities are in a special situation compared to the rest of the country when it comes to housing: they are among the municipalities with the lowest rate of home ownership. At the time of the 2011 census, and for households that responded to this question, this rate was 48% in the capital and 58% in Esch-sur-Alzette (compared with 69% at national level). These rates are relatively stable in the 2021 census, with 47% of owners among those who answered the question in Luxembourg City and 60% in Esch-sur-Alzette. It is therefore likely that a significant proportion of households that did not respond to the variable did not own their home in 2021.

**Country of birth**. The trends are the same if we look at the individual's place of birth. At national level in 2021, 69% of individuals in 'non-respondent' households were born outside Luxembourg (45% in another EU country and 24% in another country), compared with 44% of those who answered this variable. In Luxembourg City, 84% of individuals who did not state whether they were homeowners were born outside Luxembourg (50% in another EU country and 23% elsewhere), compared with 65% of those who answered this variable. In Esch-sur-Alzette, the 66% of 'missing' people were born outside Luxembourg (38% in the EU, 28% elsewhere), compared with 52% of those who gave an answer. Once again, this over-representation of individuals born outside Luxembourg may influence the overall rate of home ownership, as households in which the reference person was born abroad are less likely to be homeowners. Among those answering this question at national level in 2021, the ownership rate is 60% for those born in an EU country and 46% for those born elsewhere. For Luxembourg City, these shares are 41% and 28% respectively, and in Esch-sur-Alzette they are 55% and 40%.

**Year of immigration to Luxembourg**. This variable only concerns people born outside the country, a group which represents almost half the population but accounts for almost 70% of the individuals who did not provide their occupation status. Among this population, the non-response rate on this variable is highest among households whose reference person arrived most recently in Luxembourg. It is 46% for those who arrived between 2019 and 2021, 38% for those who arrived between 2010 and 2018, 30% for those who arrived between 2000 and 2009 and 18% for those who arrived before 2000. As a reminder, the overall non-response rate for this variable is 23%. There is therefore once again an over-representation among the 'missing' individuals of those who have recently arrived in Luxembourg, for whom the rate of home ownership tends to be lower: it is 20% for households where the reference person has immigrated since 2019, 44% for those who arrived between 2010 and 2018, 62% for those who arrived between 2000 and 2009 and 79% for those who immigrated before 2000.

**Strategy for disseminating results in a context of potential bias due to the non-response rate**

These three cross-tabulations with the ownership rate variable - municipality of residence, country of birth and year of immigration - show that there is a bias among households that did not answer this question. This bias is always in the same direction: households that did not provide information on their tenure status are more likely to live in municipalities with a higher proportion of tenants, were more likely to have been born in countries whose nationals are less likely to own property in Luxembourg, and arrived in Luxembourg more recently than those who did answer this question. Calculating the overall ownership rate without taking into account the 'missing' households would therefore risk overestimating it. It is difficult to estimate the extent of this overvaluation, which appears to be structural. Already in 2011, the vast majority of households that did not respond to this variable lived in Luxembourg City. In this commune, the response rate for this variable in 2011 was 72%, compared with 96% for all the other communes. This structural shortfall in the number of households counted could be due to the practice of registering people in Luxembourg City, but the fact that Esch-sur-Alzette is experiencing the same problems (with a stricter practice of registering people) points more towards the role of 'gateway' to Luxembourg played by these two communes, a role highlighted in three recent studies:

- The ninth publication in this series[5], on the geographical distribution of immigrants in the 2021 census, highlights the role of the capital as a 'gateway' for newcomers to Luxembourg: 32% of its population is made up of immigrants who arrived less than 5 years ago.
- The first report from the Observatoire Social de la Ville de Luxembourg shows that, with 16,031 new residents in 2020, Luxembourg City accounted for just over half of all new arrivals in Luxembourg that year. But the same report shows that the capital also experienced 14,793 departures in the same year.
- The first report from the Esch-sur-Alzette Social Observatory shows that this phenomenon also exists in Esch-sur-Alzette: in 2020, the town saw 4,821 new arrivals (44% of whom came from abroad) and 4,099 departures.

It is therefore possible that the high non-response rate in Luxembourg City (and to a lesser extent in Esch-sur-Alzette) is due to the high turnover rate of its population: individuals who are only in Luxembourg for a short time, individuals who did not unregister when they left the country, etc. These populations, even if their stay is short, nevertheless occupy a dwelling and should therefore be counted in the statistics.

5 See RP1ers Résultats n°9, The geographical distribution of immigrants in Luxembourg: https://statistiques.public.lu/dam-assets/recensement/publication-9/docs/rp2021-repartition-geographique-des-immigres-au-luxembourg-fr.pdf

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