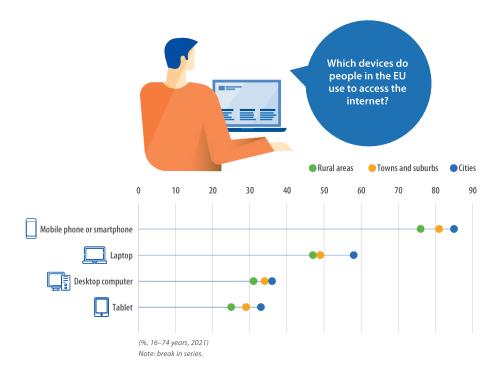
Urban-rural Europe - digital society

Statistics Explained

Data extracted: October 2022. Planned article update: December 2024. " By 2021, 9 out of every 10 households in the EU had a broadband internet connection; this figure was somewhat higher for households in cities (93 %) and slightly lower for households in rural areas (86 %), although this gap closed during the last decade. "

" The EU's digital divide between the share of people living in cities and in rural areas that used the internet for telephone calls was 13 percentage points (71 % of people living in cities and 58 % of those living in rural areas in 2021). "

Digital society and digital technologies bring with them new ways to learn, entertain, work and explore. This includes new freedoms and rights that give people living in the European Union (EU) the opportunity to reach out beyond physical communities, geographical locations, and social positions. However, there are also challenges associated with this digital transformation. For example, the EU seeks to increase its strategic autonomy in technology, while developing rules and technologies to protect citizens from counterfeit products, cybertheft, and disinformation.





Digital technologies were crucial to maintaining economic and social life through the COVID-19 crisis and it is likely they will be a key differentiating factor of economies that successfully transition to a sustainable, post-pandemic,

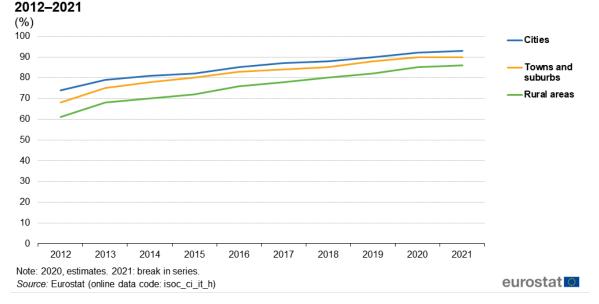
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social and economic model.

This article forms part of Eurostat 's sister publications on Rural Europe and Urban Europe .

Households connected to the internet

The number of households in the EU that are connected to broadband internet has risen steadily in recent years, to a point where the market is close to saturation. By 2021, 9 out of every 10 households in the EU had a broadband internet connection; this figure was somewhat higher for households in cities (93 %) and slightly lower for households in rural areas (86 %), although this gap closed during the last decade. To complete the picture, the share of households in the EU that had a broadband internet connection stood at 90 % for towns and suburbs in both 2020 and 2021.



Households with broadband internet by degree of urbanisation, EU,

Figure 1: Households with broadband internet by degree of urbanisation, EU, 2012–2021 (%) Source: Eurostat (isoc_ci_it_h)

In 2012, fixed broadband was the prevalent technology for connecting to the internet across the EU, while mobile broadband was in its relatively infancy. With the introduction of fourth and fifth generation (4G and 5G) technologies for broadband cellular networks, a growing proportion of EU households have started to make use of mobile broadband to connect to the internet. Figure 2 shows how the use of mobile broadband in the EU grew rapidly from a comparatively low base level during the period from 2012 to 2020; this development stopped in 2021 when the proportion of households connected to mobile broadband stag-

nated - in cities and in rural areas - and fell among households in towns and suburbs (note there is a break in series).

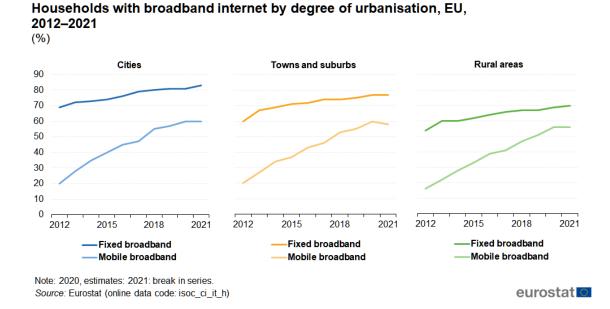


Figure 2: Households connected to the internet by type of connection and degree of urbanisation, EU, 2012–2021 (%) Source: Eurostat (isoc_ci_it_h)

Figure 3 shows the latest situation concerning broadband internet connections in the EU Member States. In 2021, a high proportion of households in cities had a broadband connection (fixed and/or mobile): the lowest shares were recorded in Greece and Portugal (both 89 %), rising to more than 95 % in Luxembourg, Slovenia, Spain, Finland, Ireland and the Netherlands (which had the highest share at 99 %). Compared with the situation in cities, broadband connectivity rates (fixed and/or mobile) were usually lower in rural areas. The lowest rates – within the range of 72–75 % were recorded in Bulgaria, Greece and Portugal – while more than four fifths of all households in rural areas of the remaining EU Member States had a broadband connection.

Households with broadband internet by type of connection and degree of urbanisation, 2021

(%)

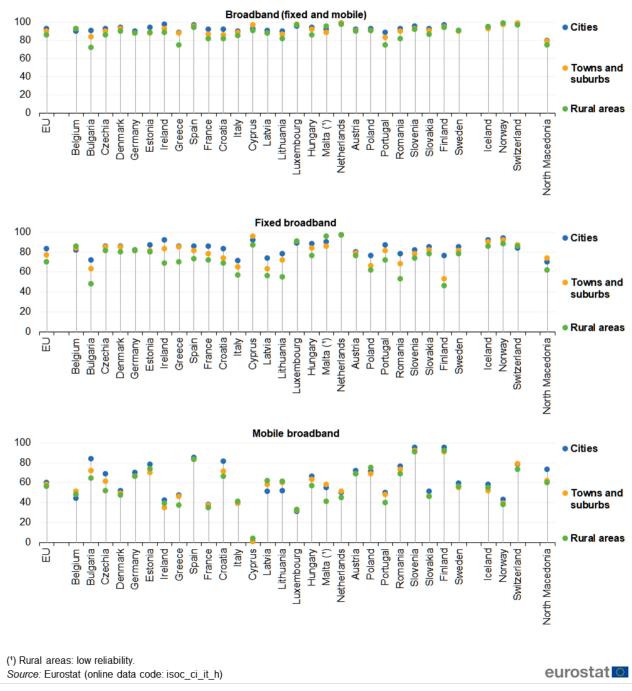
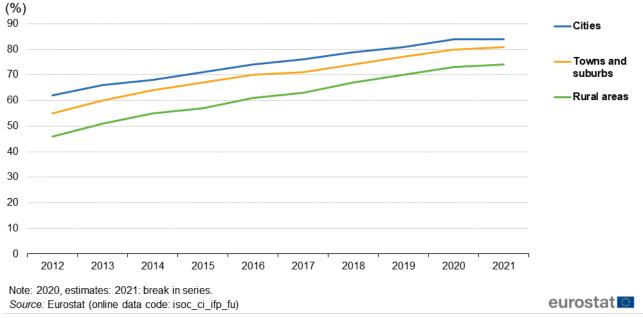


Figure 3: Households with broadband internet by type of connection and degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_it_h)

In most EU Member States, the share of households with a fixed broadband internet connection was higher than the share using a mobile connection; note that households may have both a fixed and a mobile internet connection. In 2021, this pattern was most apparent for households in cities, where Bulgaria, Slovenia and Finland were the only Member States to report a higher share of households making use of a mobile (rather than a fixed) broadband connection. By contrast, the situation in rural areas was somewhat different, as there were eight Member States that reported a higher share of households making use of a mobile broadband connection. These included the three Member States noted above – Bulgaria, Slovenia and Finland (where a higher share of households in cities also used a mobile broadband connection) – as well as Latvia, Lithuania, Spain, Poland and Romania.

Individuals - frequency of internet use

The focus of the information presented in the following sections changes from the household to individuals. More specifically, data are presented for people aged 16–74 years; as such, children below the age of 16 are not covered.



Individuals (16–74 years) with daily internet access by degree of urbanisation, EU, 2012–2021

Figure 4: Individuals (16–74 years) with daily internet access by degree of urbanisation, EU, 2012–2021 (%) Source: Eurostat (isoc_ci_ifp_fu)

A new legal basis for the collection of statistics on the digital society

For reference year 2021, the implementation of a new legal basis for the collection of statistics on the digital society (the framework regulation for the production of European statistics on persons and households (Integrated European Social Statistics – IESS)) resulted in a considerable level shift from one year to the next in relation to data provided by some EU Member States. As a result, data for Germany and Ireland are flagged with a break in series in the database.

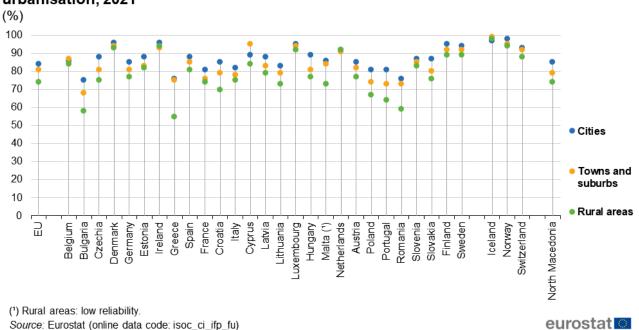
More generally, time series data may also be impacted by the COVID-19 pandemic. This led some EU Member States and EFTA countries to change their data collection procedures in 2020/21 to make use of computer assisted web interviews instead of paper and pen personal interviews, which may also lead to breaks in series.

In 2012, some 56 % of people aged 16–74 years accessed the internet on a daily basis. This share rose every year up to a peak of 80 % by 2020, where it remained in 2021. Figure 4 presents the same time series with an analysis by degree of urbanisation. The share of people aged 16–74 years in the EU who accessed the internet on a daily basis was higher for people living in cities than it was for those living in towns and suburbs or in rural areas; this pattern was repeated each year throughout the period from 2012 to 2021. However, the difference between the shares recorded for people living in cities and people living in rural areas narrowed gradually: having stood at 16 percentage points in 2012, it had fallen to 10 points by 2021.

As noted above, a higher proportion of people aged 16–74 years living in cities in the EU accessed the internet on a daily basis. This pattern was repeated in the vast majority of EU Member States in 2021, the only exceptions being Belgium and Cyprus (where the highest share of daily internet access was recorded for people living in towns and suburbs) and the Netherlands (where the shares for people living in cities and in rural areas were identical); see Figure 5.

In some of the EU Member States, a relatively low share of people aged 16-74 years living in rural areas accessed

the internet on a daily basis. In 2021, this was particularly apparent in Romania, Bulgaria and Greece, with shares of less than three fifths; the lowest proportion was observed in Greece (55 %).



Individuals (16–74 years) with daily internet access by degree of urbanisation, 2021

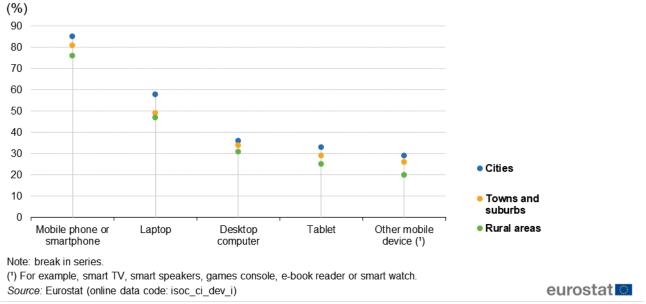
Figure 5: Individuals (16–74 years) with daily internet access by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_ifp_fu)

Individuals - devices used to access the internet

A vast array of devices can be web-enabled once equipped with appropriate connectivity. While most people use a mobile phone / smartphone, tablet, laptop or desktop computer to access the internet, there is an ever-growing range of alternative devices, including, among other devices, smart TVs, smart speakers, games consoles, e-book readers and smart watches.

More than four fifths (81 %) of people aged 16–74 years in the EU used a mobile phone or smartphone to access the internet in 2021. This share was somewhat higher for people living in cities (85 %) than it was for those living in towns and suburbs (81 %) or in rural areas (76 %). Figure 6 shows this pattern was repeated across a range of different devices, with people living in cites having a higher

propensity (than those living in towns and suburbs or in rural areas) to make use of each device to access the internet.

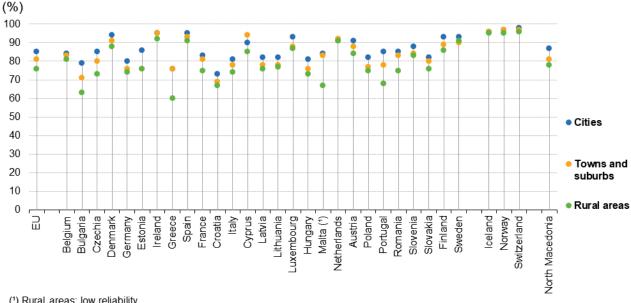


Individuals (16–74 years) using the internet on various devices by degree of urbanisation, EU, 2021

Figure 6: Individuals (16–74 years) using the internet on various devices by degree of urbanisation, EU, 2021 (%) Source: Eurostat (isoc_ci_dev_i)

Figure 7 provides information concerning the share of people (aged 16-74 years) using three specific devices – a mobile phone / smartphone, a laptop, or a tablet – to access the internet in 2021. As noted above for the EU as a whole, it was generally the case that people living in cities had a higher propensity to make use of these devices. There were however some exceptions.

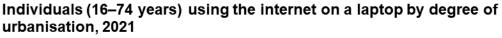
- The highest share of people using a mobile phone / smartphone to access the internet in Cyprus and the Netherlands was recorded for those living in towns and suburbs.
- The highest share of people using a laptop to access the internet in Belgium was recorded for those living in towns and suburbs.
- A somewhat different pattern was observed for using a tablet to access the internet. A lower proportion of people made use of this type of device compared with a mobile phone / smartphone or a laptop. While the highest share of people using a tablet to access the internet was also generally recorded for people living in cities, there was often little difference between the shares when analysed by degree of urbanisation.
 - The highest share of people using a tablet to access the internet in Belgium, Denmark, Cyprus, Malta, Austria and Slovenia was recorded for those living in towns and suburbs.
 - The highest share of people using a tablet to access the internet in Luxembourg, the Netherlands and Finland was recorded for those living in rural areas.



Individuals (16–74 years) using the internet on a mobile phone or smartphone by degree of urbanisation, 2021

(1) Rural areas: low reliability. Source: Eurostat (online data code: isoc_ci_dev_i)

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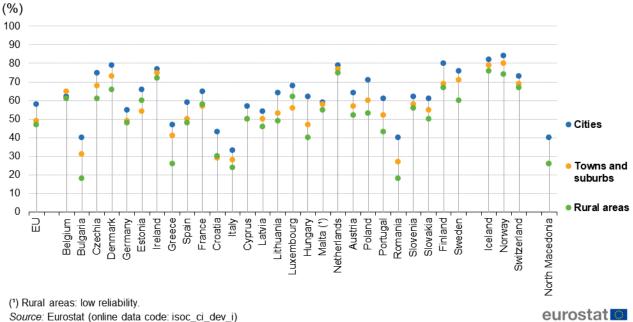
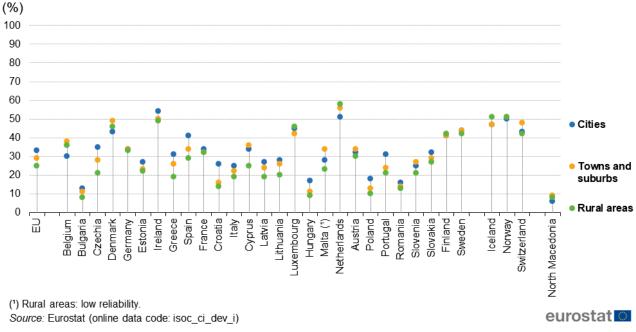


Figure 7 (part one): Individuals (16–74 years) using the internet on specific devices by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_dev_i)



Individuals (16–74 years) using the internet on a tablet by degree of urbanisation, 2021

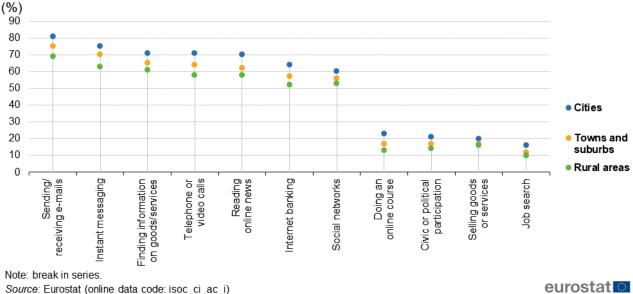
Figure 7 (part two): Individuals (16–74 years) using the internet on specific devices by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_dev_i)

Individuals - internet activities

As a higher proportion of people living in cities (compared with those living in towns and suburbs or in rural areas) used a variety of different devices to access the internet, it is perhaps unsurprising to find that the share of people using the internet for various activities was also higher among city-dwellers.

In 2021, the EU's digital divide between the share of people living in cities and the share of people living in rural areas that used the internet for various activities:

- peaked at 13 percentage points for telephone or video calls (71 % of people living in cities and 58 % of those living in rural areas);
- was more than 10 percentage points for sending/receiving e-mails, instant messaging (in other words, exchanging messages through applications such as Skype, Messenger, WhatsApp, Viber, Snapchat), reading online news and internet banking;
- was narrowest (4 percentage points) for selling goods or services (20 % of people living in cities and 16 % of those living in rural areas).

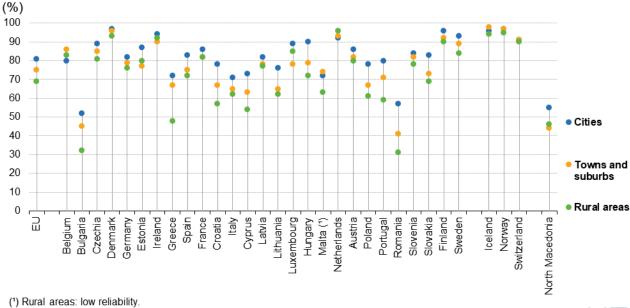


Individuals (16–74 years) using the internet for various activities by degree of urbanisation, EU, 2021

Figure 8: Individuals (16–74 years) using the internet for various activities by degree of urbanisation, EU, 2021 (%) Source: Eurostat (isoc_ci_ac_i)

Figure 9 provides information concerning the share of people (aged 16–74 years) using the internet for three specific activities: sending/receiving e-mails, instant messaging, and internet banking. It was generally the case that people living in cities had a higher propensity to use the internet for all three of these activities, although there were some exceptions.

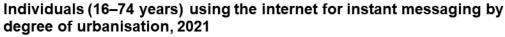
- For sending/receiving e-mails:
 - the highest shares in Belgium and Malta were recorded for people living in towns and suburbs;
 - the highest share in the Netherlands was recorded for those living in rural areas.
- For instant messaging, the highest shares in Greece, Cyprus and the Netherlands were recorded for people living in towns and suburbs.
- For internet banking, the highest shares in Belgium and Malta were recorded for people living in towns and suburbs.



Individuals (16–74 years) using the internet for sending/receiving emails by degree of urbanisation, 2021

(1) Rural areas: low reliability. Source: Eurostat (online data code: isoc_ci_ac_i)

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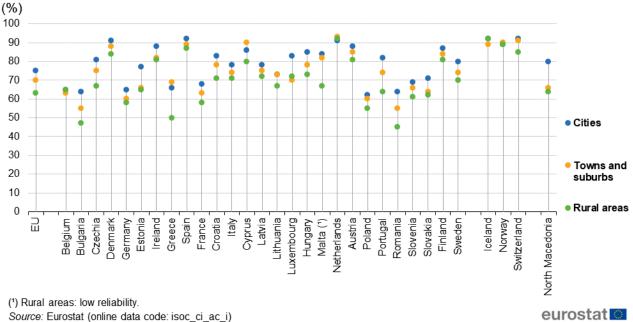
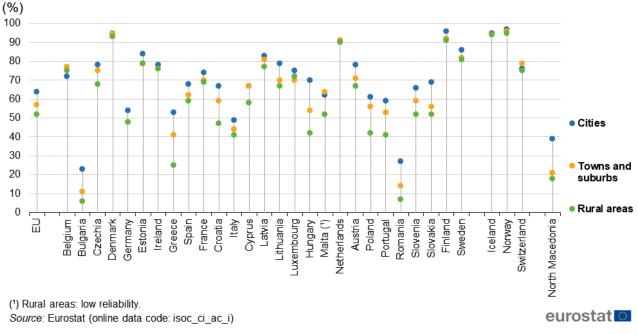


Figure 9 (part one): Individuals (16–74 years) using the internet for specific activities by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_ac_i)



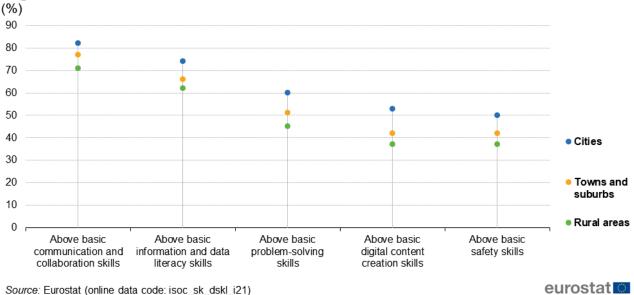
Individuals (16–74 years) using the internet for internet banking by degree of urbanisation, 2021

Figure 9 (part two): Individuals (16–74 years) using the internet for specific activities by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ci_ac_i)

Individuals' level of internet skills

Digital skills are increasingly important both for the job market and to participate in other aspects of life. EU policymakers seek to build a more inclusive digital society by equipping people with the necessary skills and capacities. To measure progress in this domain, a composite indicator has been created, based on a range of activities related to internet or software use in five specific areas: information and data literacy skills (for example, searching online); communication and collaboration skills (for example, communication via e-mail); digital content creation skills (for example, writing programming code); safety skills (for example, protecting personal data); and problem-solving skills (for example, installing software). The EU has set a benchmark target whereby at least 80 % of people aged 16–74 years should have at least basic digital skills by 2030.

Figure 10 shows an analysis for the five specific areas that are used to compile the composite indicator. In 2021, more than three quarters (77 %) of the EU population aged 16–74 years had above basic digital communication and collaboration skills. A higher share was recorded for people living in cities (82 %), while those living in rural areas had a lower share (71 %). This pattern – a higher share of people living in cities having above basic digital skills – was repeated for all five areas covered by the composite indicator, with the largest digital divide recorded for content creation skills (where there was a 16 percentage point gap in the share of people with above basic skills between those living in cities and those living in rural areas).



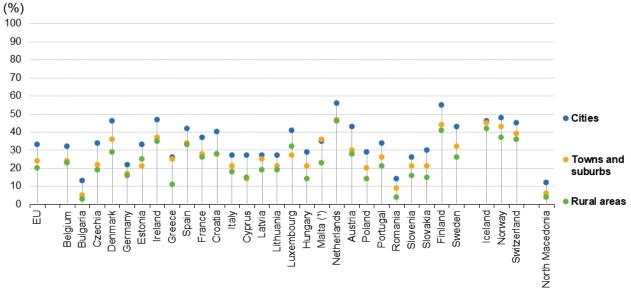
Individuals (age group 16–74) with above basic digital skills by degree of urbanisation, EU, 2021

Figure 10: Individuals (16–74 years) with above basic digital skills by degree of urbanisation, EU, 2021 (%) Source: Eurostat (isoc_sk_dskl_i21)

In 2021, just over one quarter (26 %) of the EU population aged 16–74 years reported above basic overall digital skills (whereby all five component indicators were at above basic level). This share was considerably higher for people living in cities (33 %), while a lower proportion of people living in towns and suburbs (24 %) and in rural areas (20 %) had above basic overall digital skills. Across 26 of the 27 EU Member States, the highest share of people with above basic overall digital skills was registered for those living in cities. The only exception was Malta, where a marginally higher share of people living in towns and suburbs reported above basic overall digital skills (1 percentage point higher than the share for people living in cities).

Figure 11 provides information concerning the share of people (aged 16–74 years) with above basic skills for three specific areas: information and data literacy skills, communication and collaboration skills, and digital content creation skills. Once again, it was generally the case that a higher proportion of people living in cities (compared with those living in towns and suburbs or in rural areas) had above basic skills, although there were some exceptions.

- For information and data literacy skills, the highest share in Belgium was recorded for people living in towns and suburbs.
- For communication and collaboration skills:
 - the highest share in Cyprus was recorded for people living in towns and suburbs;
 - the highest share in the Netherlands was recorded for people living in rural areas.
- For digital content creation skills, the highest share in Malta was recorded for people living in towns and suburbs.



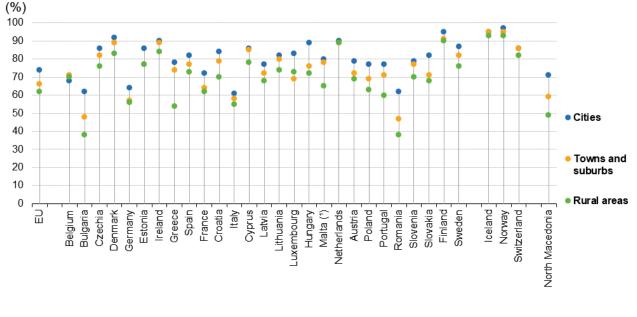
Individuals (16–74 years) with above basic overall digital skills by degree of urbanisation, 2021

Note: concerns those individuals with above basic level skills for information and data literacy skills, communication and collaboration skills, digital content creation skills, safety skills and problem-solving skills. (1) Rural areas: low reliability.

Source: Eurostat (online data code: isoc_sk_dskl_i21)



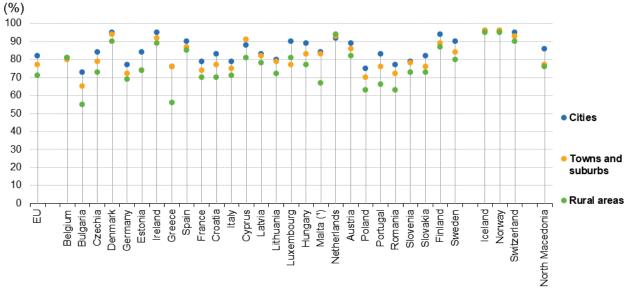
Individuals (16–74 years) with above basic information and data literacy skills by degree of urbanisation, 2021



(1) Rural areas: low reliability. Source: Eurostat (online data code: isoc_sk_dskl_i21)

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Figure 11 (part one): Individuals (16–74 years) with above basic digital skills by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_sk_dskl_i21)



Individuals (16–74 years) with above basic communication and collaboration skills by degree of urbanisation, 2021

(1) Rural areas: low reliability. Source: Eurostat (online data code: isoc_sk_dskl_i21)

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Individuals (16–74 years) with above basic digital content creation skills by degree of urbanisation, 2021

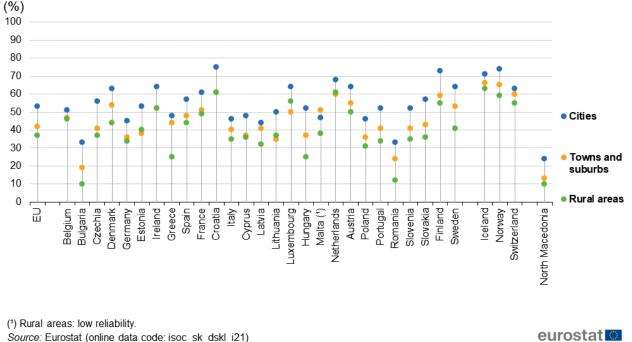
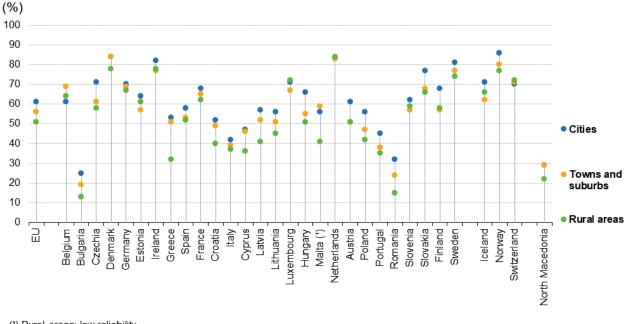


Figure 11 (part two): Individuals (16–74 years) using the internet for specific activities by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_sk_dskl_i21)

Internet purchases by individuals

E-commerce makes it easier for consumers to compare different retail offers. It has the potential to reconfigure the geography of consumption, for example, extending consumer choice and reducing prices in remote areas of the EU, while removing the burden of travelling considerable distances to shop for specific items.

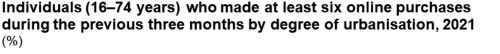
The vast majority of retail sales in the EU continue to take place in shops. However, the ability to shop 24 hours a day, coupled with the ease of making electronic payments, is gradually leading to a digital transformation of the EU's retail space, disrupting many aspects of shopping behaviour; this development was reinforced during the COVID-19 crisis.



Individuals (16–74 years) whose last online purchase was during the previous three months by degree of urbanisation, 2021

(1) Rural areas: low reliability. Source: Eurostat (online data code: isoc_ec_ib20)

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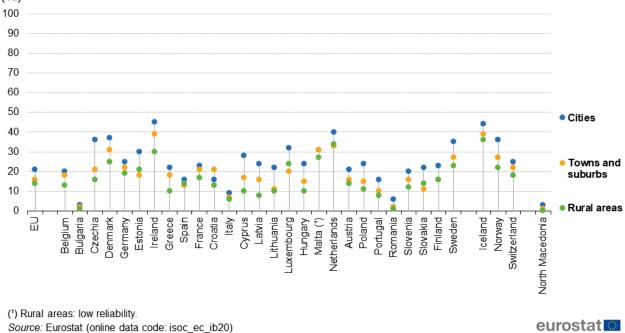
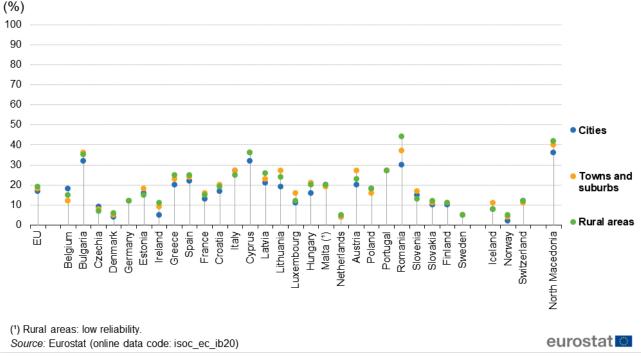


Figure 12 (part one): Individuals (16–74 years) online purchases by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ec_ib20)



Individuals (16–74 years) who never made an online purchase by degree of urbanisation, 2021

Figure 12 (part two): Individuals (16–74 years) online purchases by degree of urbanisation, 2021 (%) Source: Eurostat (isoc_ec_ib20)

In 2021, close to three fifths (57 %) of the EU's population aged 16–74 years reported that they had bought/ordered goods or services over the internet during the three months prior to the survey. This share was higher for people living in cities (61 %), although a majority of the people living in towns and suburbs (56 %) and in rural areas (51 %) also reported that their last online purchase was during the three months prior to the survey; see Figure 12.

In the vast majority of EU Member States, the highest share of people aged 16–74 years reporting that their last online purchase was during the three months prior to the survey was registered among those living in cities. Malta and the Benelux Member States were exceptions to this pattern: the highest share of people making their last online purchase during the three months prior to the survey was recorded for those living in rural areas of Luxembourg and the Netherlands, and for those living in towns and suburbs of Belgium and Malta.

Figure 12 also provides an analysis of the frequency of internet shopping patterns (use the dropdown list to change the indicator). In 2021, close to one fifth (18 %) of the EU population aged 16–74 years made at least six online purchases during the three months prior to the survey. The highest share was recorded for people living in cities (21 %), while the lowest was for people living in rural areas (14 %).

The share of people making at least six online purchases varied considerably across EU Member States and by degree of urbanisation. An individual's choice as to whether or not to use e-commerce may in part be related to trust, low levels of internet access/use, or relatively high numbers of people not possessing bank accounts and/or credit cards (thereby making it more difficult to pay online). The share of people who made at least six online purchases in the three months prior to the survey ranged from highs of at least 40 % for people living in the cities of Ireland and the Netherlands, down to 1 % for those living in rural areas of Bulgaria and Romania.

In 2021, almost one fifth (18 %) of the EU's population (aged 16–74 years) had never made an online purchase (see Figure 12; use the dropdown list to change the indicator). This share was relatively uniform when analysed by degree of urbanisation, ranging from 17 % for those living in cities up to 19 % for those living in rural areas. There was a mixed pattern across the EU Member States:

- in Belgium and Czechia, those living in cities recorded the highest share of people never having made an online purchase;
- in Bulgaria, Estonia, France, Croatia, Lithuania, Luxembourg, Hungary, Austria and Slovenia, those living in

towns and suburbs recorded the highest share of people never having made an online purchase;

- in Denmark, Ireland, Greece, Spain, Latvia, the Netherlands, Romania and Slovakia, those living in rural areas recorded the highest share of people never having made an online purchase;
- in Germany, Italy, Cyprus, Malta, Poland, Portugal, Finland and Sweden, the highest share of people never having made an online purchase was recorded jointly for at least two (sometimes all three) degrees of urbanisation.

Source data for tables and graphs

· Digital society: tables and figures

Context

In March 2021, the European Commission presented a vision for the digital transformation of Europe by 2030. This vision seeks to make the EU digitally sovereign in an open and interconnected world, through the pursuit of digital policies that empower people and businesses to seize a human-centred, sustainable and more prosperous digital future. EU rights and values are at the heart of this development, which is why the Commission proposed to develop a framework of digital principles, such as access to high quality connectivity, to sufficient digital skills, to public services, to fair and non-discriminatory online services – and more generally, to ensure that the same rights that apply offline can be fully exercised online.

A Communication 2030 Digital Compass: the European way for the Digital Decade (COM(2021) 118 final) highlights the programme through to 2030, setting out four clear goals:

- a digitally skilled population and highly-skilled digital professionals;
- · secure and sustainable digital infrastructures;
- the digital transformation of businesses;
- the digitalisation of public services.

To meet these challenges and support the transformation, the EU has provided resources dedicated to digital-related reforms and investments, as detailed in national recovery and resilience plans.

See also

Online publications

- · Eurostat regional yearbook
- Rural Europe
- Urban Europe

Methodological publications

- Applying the Degree of Urbanisation 2021 edition
- Methodological manual on territorial typologies 2018 edition

Background articles

• Geographical information system of the Commission (GISCO)

Publications

Statistical publications

- Digital economy and society in the EU A browse through our online world in figures 2018 edition
- Eurostat regional yearbook 2022 edition
- · Urban Europe statistics on cities, towns and suburbs 2016 edition

Methodological publications

- Applying the Degree of Urbanisation A methodological manual to define cities, towns and rural areas for international comparisons 2021 edition
- Methodological manual on territorial typologies 2018 edition

Database

- Degree of urbanisation (degurb)
- Digital economy and society (isoc)

Dedicated section

- Degree of urbanisation
- · Digital economy and society
- Rural development

Methodology

- Applying the degree of urbanisation A methodological manual to define cities, towns and rural areas for international comparisons 2021 edition
- Digital economy and society methodology
- Methodological manual on territorial typologies 2018 edition

Legislation

Statistical legislation

- Digital economy and society legislation
- Regulation (EU) 2017/2391 of the European Parliament and of the Council of 12 December 2017 amending Regulation (EC) No 1059/2003 as regards the territorial typologies (Tercet)
- Consolidated and amended version of Regulation (EC) No 1059/2003 of the European Parliament and of the Council on the establishment of a common classification of territorial units for statistics (NUTS)

Policy legislation

- Commission Delegated Regulation (EU) No 522/2014 of 11 March 2014 supplementing Regulation (EU) No 1301/2013 of the European Parliament and of the Council with regard to the detailed rules concerning the principles for the selection and management of innovative actions in the area of sustainable urban development to be supported by the European Regional Development Fund
- Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)
- Regulation (EU) No 1310/2013 of the European Parliament and of the Council of 17 December 2013 laying down certain transitional provisions on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)



Visualisations

• Regions and cities illustrated (RCI) – Degree of urbanisation

External links

• Urban Agenda for the EU

European Commission – Directorate-General Agriculture and rural development

- Rural development
- The new Common Agricultural Policy: 2023-27

European Commission – Directorate-General Regional and Urban Policy

- · Cities and urban development
- Cohesion in Europe towards 2050; eighth report on economic, social and territorial cohesion
- Territorial cohesion
- Urban-rural linkages

European Committee of the Regions

• European Committee of the Regions

European networks

- European Network for Rural Development
- European Urban Initiative

United Nations

- Habitat III The new Urban Agenda
- Sustainable development goals Rural development