



# ICT usage in households and by individuals - EU benchmark

2016



**ICT usage  
in households and by  
individuals  
– EU benchmark report  
2016**

## ICT usage in households and by individuals – EU benchmark report 2016

Issued by Statistics Denmark

May 2017

Photo cover: Colourbox

### Pdf-version

Available for download free of charge from

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ISBN 978-87-501-2258-6

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## Preface

Digitisation and the pervasiveness of information and communication technologies (ICT) have changed almost every aspect of our lives over just a couple of decades, including communication, social interaction, work life, leisure and everyday practical activities. This rapid development brings with it innumerable opportunities, but also creates challenges. The advance of digitisation creates a need to understand the implications of digitisation for our day-to-day behaviour.

In order to meet the demand for reliable and representative information, EU national statistics offices have been gathering statistics on ICT usage for many years. The Danish survey has a more comprehensive content, thanks to collaboration between Statistics Denmark, the Agency for Digitisation, the Danish senior citizen lobby (Ældre Sagen) and the Danish Agency for Culture and Palaces.

This publication focuses only on the results of the most recent harmonised EU questionnaire for 2016 facilitating comparisons across national borders. The full results of the Danish survey have been published in a separate annual publication (only in Danish), see [www.dst.dk/it](http://www.dst.dk/it).

Benchmarking the Danish results puts developments into perspective. This makes it easier to compare developments in Danes' use of new technologies with the situation in other countries.

At the end of this year's publication, there is an extended section on ICT security; a topic of strong focus in the latest EU survey. The section describes two main themes: sharing and protecting personal information. Which types of information are most frequently provided over the internet and in which countries? How good is our digital self-defence? How do we protect personal information on the internet from unauthorised access? How common is it to limit the access of others to profiles and content on social networking platforms? How many people know about cookies and how they work?

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Statistics Denmark, May 2017

Jørgen Elmeskov, Director General  
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## Summary

*Contents* This publication describes Europeans' usage of ICT in a broad perspective based on responses from a representative sample of citizens in Denmark and other EU Member States in 2016. Data was collected using a harmonised questionnaire that enables comparisons across countries.

*Focus on comparison of Danish results with figures from other countries* The survey includes the pervasiveness and usage of ICT, including access to and use of the internet, e-commerce, social media, use of internet banking as well as online self-service. Various questions on ICT security and protection of personal information are dealt with in the last section of the publication.

*Denmark is a digital front-runner in the EU* The statistics confirm the conclusion reached in other studies that Denmark is still among the EU front-runners in terms of ICT usage by its citizens. This applies to e.g. online self-service, online shopping, use of internet banking and social networking services.

*Key results* Highlights from this year's survey:

- Danes provide personal information online on a large scale compared to people in other EU Member States.
- Furthermore, Danish internet users are better at digital self-defence and protect themselves on the internet, for example by restricting access to their geographical location or profile etc. on social media.
- Three out of five Danish internet users restrict access to their profile and their own content on social networking platforms. The EU average is 40 per cent of internet users.
- Denmark leads the EU with regard to online self-service. A total of 88 per cent of Danes have visited public-authority websites, as against 48 per cent of EU citizens.
- The percentage of Danes who submit completed forms to public authorities has doubled since 2008.
- At 83 per cent, the United Kingdom has the largest percentage of people who shop online, closely followed by Denmark in second place at 82 per cent. On average, 55 per cent of Europeans bought or sold goods and services online in 2016.
- Online shopping in the EU is generally more common for men. The situation in Denmark is opposite. Danish women have overtaken men in shopping online.
- About seven out of ten European e-shoppers experience no problems when buying goods or services online. The share is the same in Denmark.
- Norway is the European country where the highest number of people 'go to the bank' online. 91 per cent of all Norwegians and 88 per cent of Danes aged 16-74 use internet banking.
- The percentage of 16-74-year-olds in the EU linked to one or more social networking services is increasing. In 2011, 38 per cent had a profile on e.g. Facebook or Instagram, whereas in 2016, this had grown to 52 per cent.
- A total of 74 per cent of Danes are linked to at least one social network service.
- Mobile telephones are the most common devices used for internet access in Europe. Almost four out of five internet users surf the internet via their mobile phones. Laptops are the second most popular device for internet access (64 per cent), followed by desktop computers (54 per cent) and tablets (44 per cent).
- 14 per cent of Europeans aged 16-74 are not online. This corresponds to around 53 million people. 71 per cent of EU citizens are on the internet daily. The figure is 89 per cent in Denmark.

**Denmark is one of the countries with the lowest share of people who are never on the internet (2 per cent).**

#### **Facts about the survey**

This publication is based on information in the survey of ICT usage in households and by individuals 2016. The survey is based on a common EU questionnaire (ICT usage by individuals and in households 2016).

The Danish survey was prepared on the basis of 4,271 responses from respondents between 16 and 74 years residing in Denmark. The Danish survey was extended with regard to who was asked and the questions they were asked. In addition to the harmonised group of respondents between 16 and 74 years and the harmonised list of questions, the Danish survey included respondents between 15 and 89 years as well as a series of additional questions. The Danish statistics are based on a total of 5,922 responses from people between 15 and 89 years.

The data collection was conducted in the spring 2016 using telephone interviews or web-based questionnaires.

The results have been grossed up, i.e. weighted on the basis of background variables corresponding to 100 per cent coverage of the population groups surveyed. This means that the results take account of the differences in the number of responses from the individual groups.

#### **Other figures on the information society**

The statistics on the information society also include the *ICT usage in enterprises* survey.

Both surveys as well as results from previous years are available at [www.dst.dk/en/Statistik/emner/uddannelse-og-viden](http://www.dst.dk/en/Statistik/emner/uddannelse-og-viden).

Information on ICT usage in other EU Member States is available at the [Eurostat website](#).



## 1 Access to the internet

### 1.1 Introduction

#### *International comparisons*

This publication compares the outcomes of the Danish 2016 survey of ICT usage in households and by individuals with results from selected European countries. The data basis is, as always, individuals between 16 and 74 years; i.e. the scope used by every EU Member State. Note that, in this publication, figures for the EU refer to figures for all of the 28 countries that were members as at 31 December 2016, regardless of the year of the statistics.

The publication provides information about internet usage measured as share of the population between 16 and 74 years – except for section two, which provides information about internet access by households. In this section, figures are stated as 'percentage of households'. Selected indicators concerning e-commerce and ICT security are based on the share of e-shoppers and internet users, respectively.

#### Definitions

E-shoppers or online shoppers are individuals aged 16-74 who shopped online within the 12 months preceding the time of the data collection (spring 2016).  
See figures in Table 3.1.

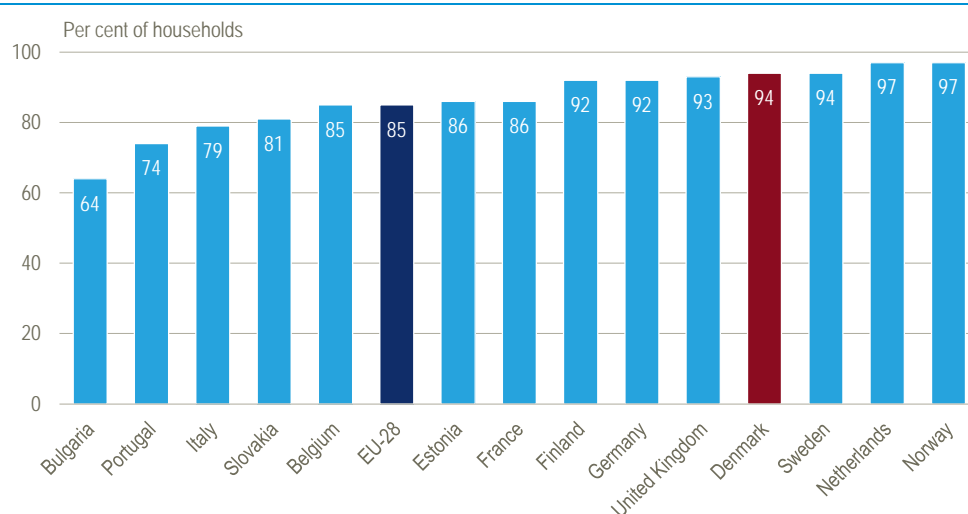
Internet users are individuals aged 16-74 who used the internet within the last 12 months preceding the time of the data collection (spring 2016).  
See the figures in Table 2.2.

### 1.2 Household internet access and broadband

*The Netherlands and Norway have the highest share of households with internet connection*

A total of 94 per cent of all Danish households have internet access. The Netherlands and Norway top the list of households with internet connection. In both of these countries, as many as 97 per cent of households are connected to the internet. An average of 85 per cent of all European households has internet access at home. In 2010, 70 per cent of all households in the EU could access the internet at home.

Figure 1.1 Access to the internet in selected countries. 2016

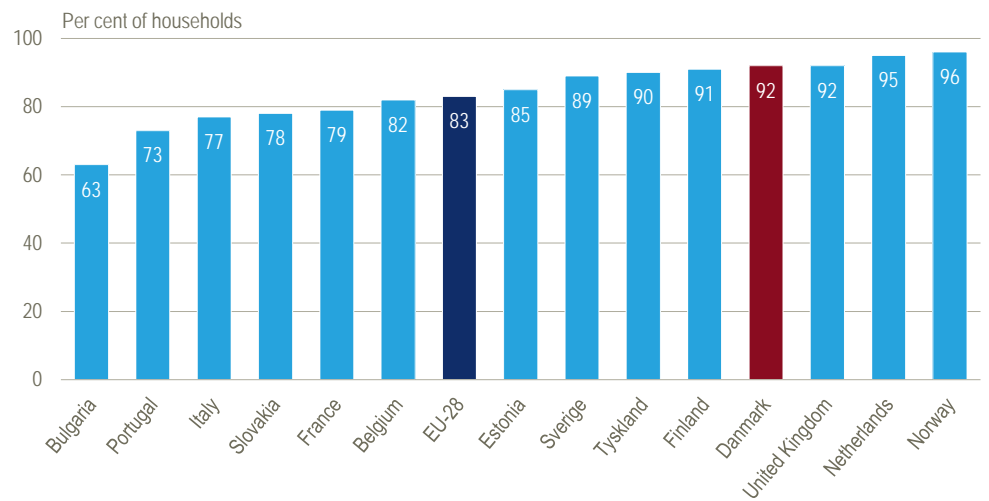


*Four out of five households in the EU have broadband*

Broadband is most widespread in Norway and the Netherlands, followed by the United Kingdom and Denmark. In Denmark, 92 per cent of households have broadband access to the internet, which means that the number of households with

broadband in Denmark is 9 percentage points above the EU average. The EU average was 83 per cent in 2016; i.e. 22 percentage points higher than the average in 2010. The EU average for 2015 was 80 per cent.

Figure 1.2 Broadband in households - selected countries. 2016



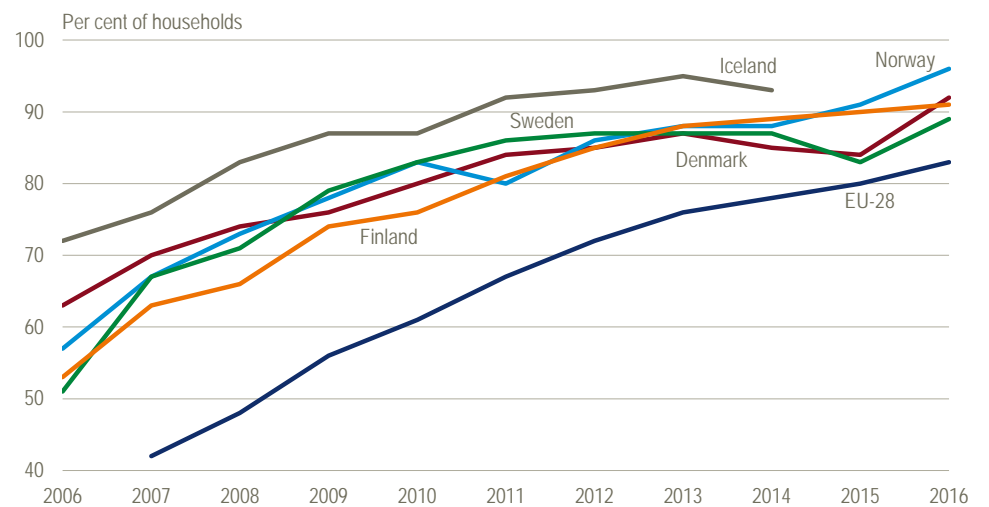
*Bulgaria has the lowest number of households with broadband*

The number of households with broadband is lowest in Bulgaria (63 per cent), Greece (68 per cent) and Romania (70 per cent). However, the period from 2010 to 2016 has seen a large increase in broadband penetration in these three countries, with increases of 37, 27 and 47 percentage points, respectively. This makes Romania the EU Member State that has experienced the greatest uptake of broadband over the last six years.

*The growth of broadband is generally waning*

In most countries, there has been a sharp increase in broadband deployment over the past ten years. Many countries saw significant increases from 2004 to 2009 and less significant increases in the following three to four years. Notwithstanding this general trend, several Nordic countries, including Denmark, experienced more significant increases from 2015 to 2016 than from 2014 to 2015. In many countries, the number of households with broadband internet access has tripled or quadrupled since 2005.

Figure 1.3 Broadband in households - Nordic countries

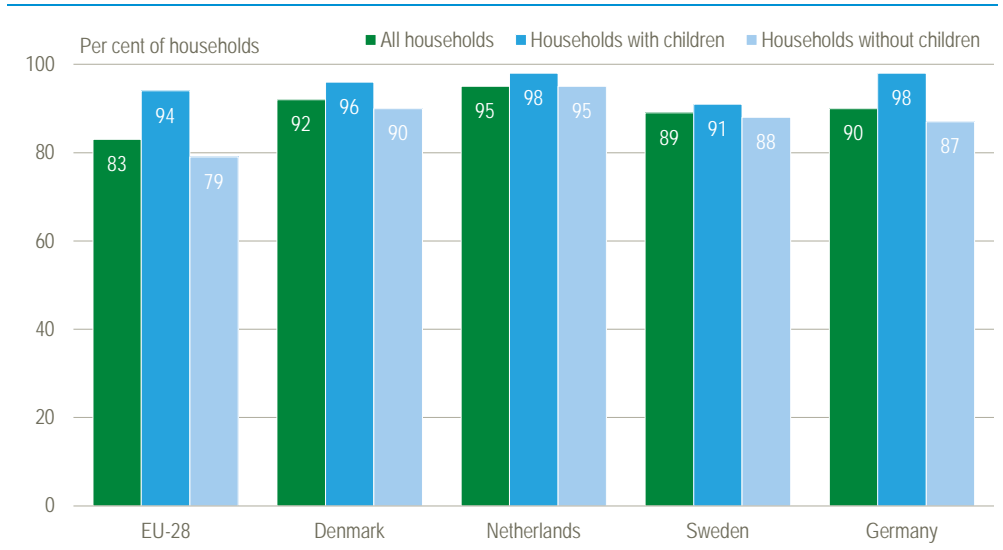


Note: There is no data available for Iceland for the years 2015 and 2016.

*Children make a difference*

For all countries, it can be observed that households with children are more likely to have access to broadband at home. The share of European homes with broadband is 94 per cent of households with children. Broadband internet access at home is less widespread among households without children.

Figure 1.4 Broadband access, households with and without children in selected countries. 2016



*As few as 2 per cent of German and Dutch households with children do not have broadband at home.*

The same trend is seen in Denmark, where one in ten households without children does not have broadband access to the internet. This figure is as low as 4 per cent for Danish households *with* children. This difference is also evident in other countries, although it fades over time. As few as 2 per cent of German and Dutch households with children do not have broadband at home.

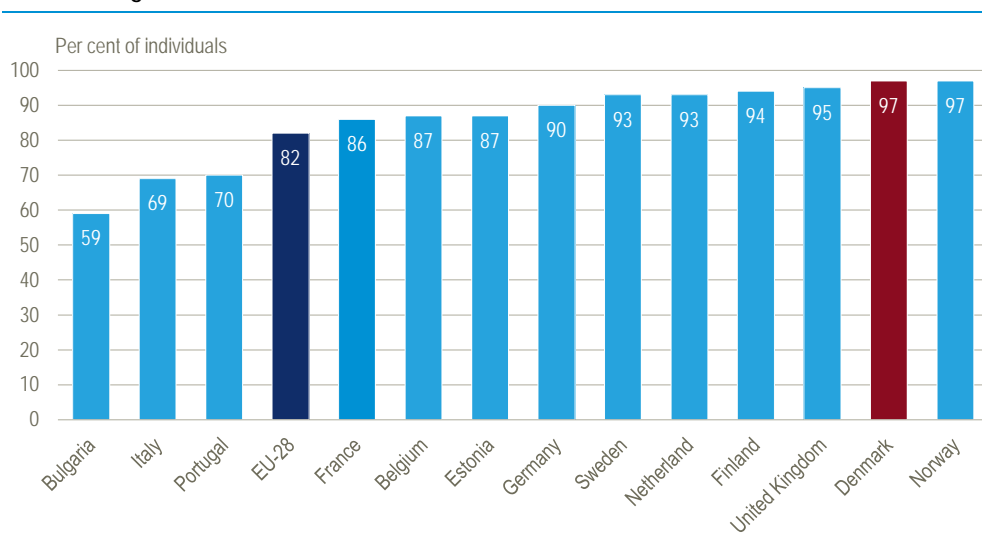
## 2 Internet usage

### 2.1 Different devices for internet access

*Eight in ten are online in the EU-28*

Eight out of ten Europeans between 16 and 74 years used the internet in 2016, often on several devices, e.g. smartphones, desktop computers or tablets. The share of internet users is nearing 100 per cent, and Norway and Denmark have the highest shares.

Figure 2.1 Internet usage, 2016



*Mobile phones are popular devices for accessing the internet*

Mobile telephones and smartphones are the most common devices used for internet access in Europe. Almost four out of five internet users surf the internet via their mobile phones. Laptops are the second most popular device for internet access (64 per cent), followed by desktop computers (54 per cent) and tablets (44 per cent).

*Internet access via mobile phones most common in Spain*

A total of 85 per cent of Danish internet users surf the internet via their mobile phones. The Spaniards top Europe in accessing the internet via mobile phones: as many as 93 per cent of Spanish internet users do so. The corresponding percentages for Norway and the Netherlands are 89 per cent and 88 per cent, respectively.

*Internet access via smart TV and smartwatch*

Around 15 per cent of internet users connect to the internet via their smart TVs. The proportionate share is twice as high in Norway (30 per cent), while it is around 23 per cent in Denmark. Around 14 per cent of Danish internet users have accessed the internet via their games consoles, e-book readers or smartwatches.

*Widespread use of portable devices for internet access*

For Danish internet users, the desktop computer is the only device used to connect to the internet by a smaller percentage than the EU average. Mobile phones, laptops, tablets, smart TVs and other portable or handheld devices are more popular for internet access in Denmark than the EU on average.

Figure 2.2 Devices used for internet access. 2016

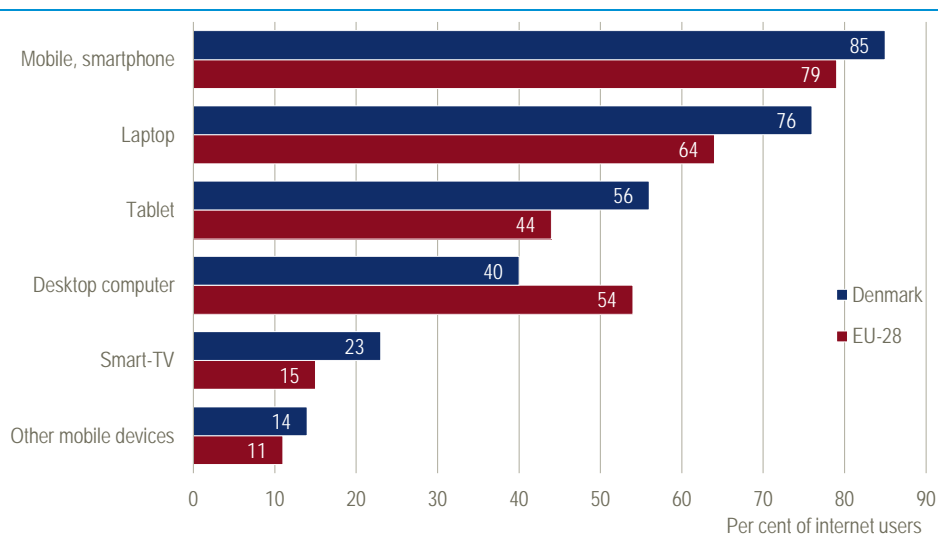


Table 2.1 Devices used for internet access. 2016

	Desktop computer	Laptop	Tablet	Mobile phone or smartphone	Other portable device (games console, e-book reader, smartwatch)	Smart TV
per cent of internet users, aged 16-74						
Belgium	53	78	49	78	7	11
Bulgaria	58	51	19	71	2	6
<b>Denmark</b>	<b>40</b>	<b>76</b>	<b>56</b>	<b>85</b>	<b>14</b>	<b>23</b>
<b>EU-28</b>	<b>54</b>	<b>64</b>	<b>44</b>	<b>79</b>	<b>11</b>	<b>15</b>
Finland	51	78	52	81	8	20
France	60	63	46	71	10	9
Greece	49	62	31	66	3	7
Ireland	25	67	37	84	5	8
Italy	50	31	29	79	6	7
Netherlands	64	80	66	88	14	26
Norway	33	84	66	89	22	30
Romania	68	37	26	70	1	5
Spain	45	58	42	93	12	16
United Kingdom	45	70	61	86	21	25
Sweden	43	70	49	84	6	27
Germany	67	71	55	82	17	20

## 2.2 Recent internet usage and frequency of internet usage

*14 per cent of the EU population has never been on the internet*

In 2016, 14 per cent of the population had never used the internet. Together with Norway and Luxembourg, Denmark ranks highest in Europe with regard to the percentage of online users.

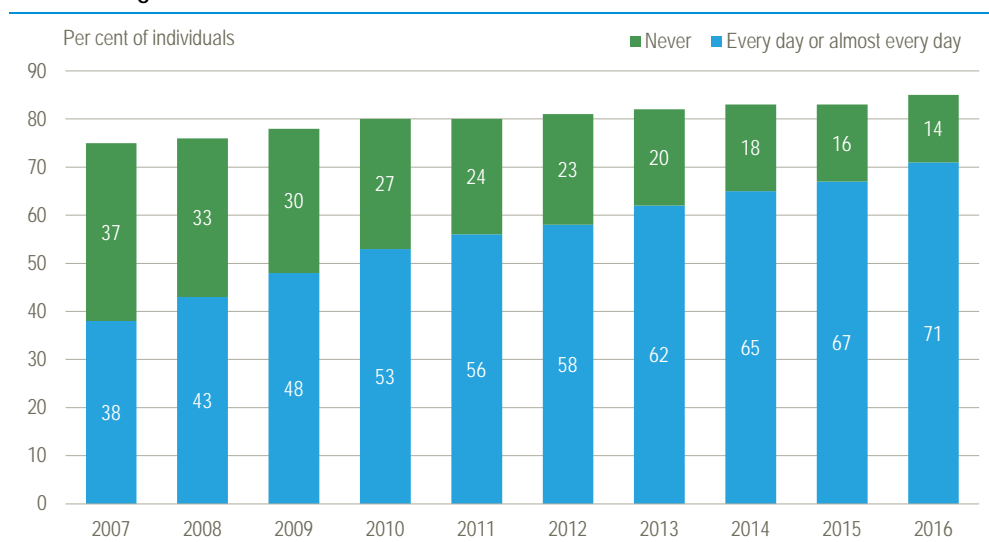
*Definition of internet users*

Internet users in this publication (e.g. see Part 4) are defined as people who have used the internet within the past year.

Table 2.2 When did you last use the internet? 2016

	Last used the internet			
	Last 3 months	3-12 months	Last 12 months	Never
	per cent of the population, aged 16-74			
Belgium	87	1	87	11
Bulgaria	59	3	62	33
Denmark	97	0	97	2
Estonia	87	1	88	10
EU-28	82	2	84	14
Finland	94	0	94	4
France	86	2	88	10
Greece	69	1	70	28
Ireland	82	1	83	15
Italy	69	2	71	25
Croatia	73	1	74	23
Latvia	80	1	81	17
Lithuania	74	1	75	22
Luxembourg	97	0	98	2
Netherlands	93	1	94	5
Norway	97	1	98	2
Poland	73	2	75	22
Portugal	70	1	71	26
Romania	60	7	66	30
Slovakia	80	2	83	15
Slovenia	75	1	76	22
Spain	81	1	81	17
United Kingdom	95	1	95	4
Sweden	93	2	95	3
Czech Republic	82	1	83	13
Germany	90	1	91	8
Hungary	79	1	81	19
Austria	84	1	85	13

Figure 2.3 Internet usage in the EU



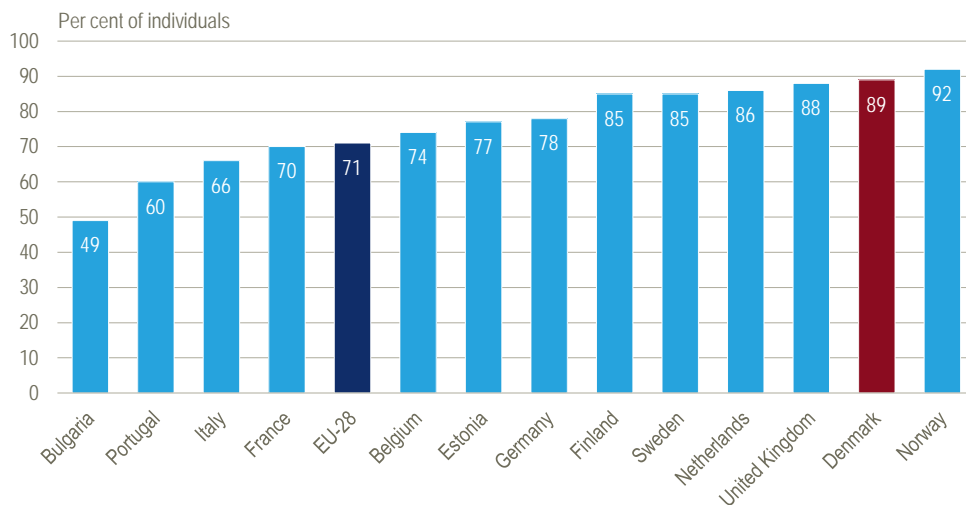
*Internet usage.  
every day or almost  
every day*

Norwegians rank highest with regard to daily use of the internet. In 2016, 92 per cent of Norwegians used the internet on a daily or almost daily basis. In Denmark, the share is 89 per cent. A total of 71 per cent of the population in the EU as a whole uses the internet every day or almost every day.

*More frequent use of the internet in the Nordic countries*

Compared with the EU as a whole, a high percentage of the population uses the internet daily or almost daily in the Nordic countries, the United Kingdom and the Netherlands.

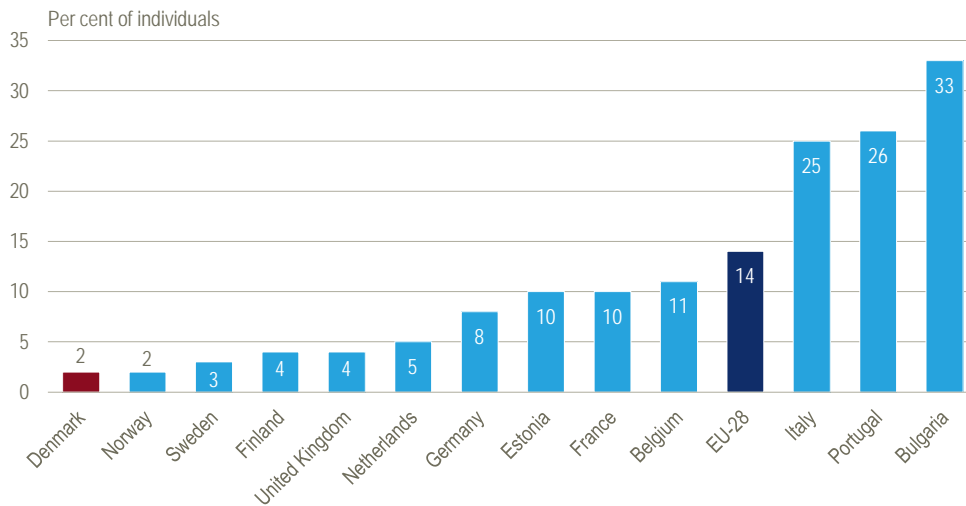
Figure 2.4 Daily internet usage in selected EU Member States. 2016



*Most widespread use of the internet in Denmark and Norway*

The percentage of the population that never uses the internet is lowest in the Nordic countries, the Netherlands and in the United Kingdom. In Bulgaria, one in three people has never used the internet. The corresponding figure is only 2 per cent in Denmark.

Figure 2.5 Percentage of the population that has never used the internet, in selected countries. 2016



*53m Europeans have never been online*

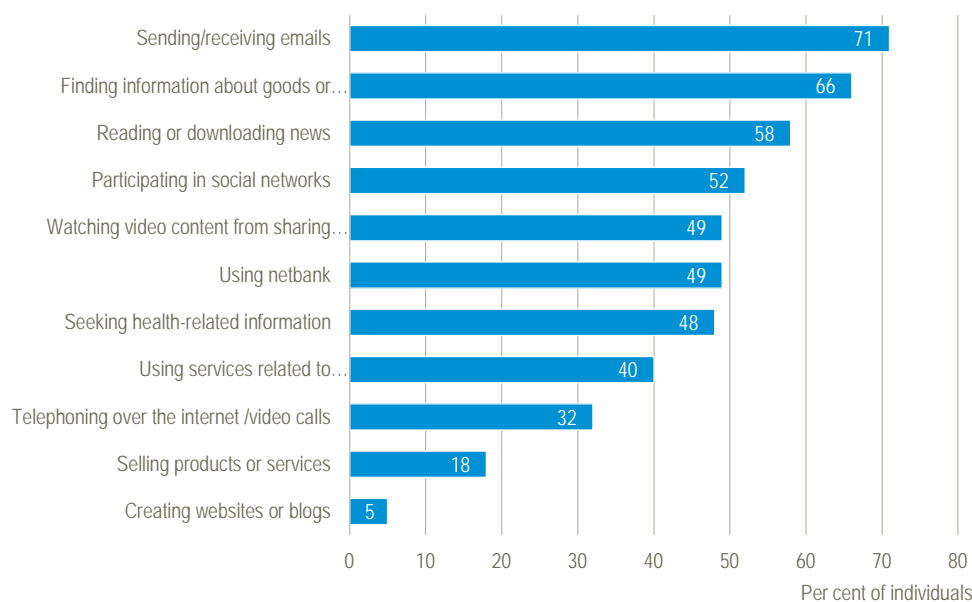
In 2016, about 14 per cent of the population aged 16-74 (a total of around 53m citizens in the EU-28) had never used the internet. Of the total number of Europeans that had never been online, around 100,000 were Danes aged 16-74.

### 3 ICT activity

*The internet is being used for a large number of activities*

The internet is being used for a number of purposes, e.g. communication, searching for information, e-commerce, interaction with public authorities, etc. The internet can be used for an increasing number of activities as technological development and internet usage becomes an ever more integrated part of everyday life for more and more people.

Figure 3.1 Selected internet activities in the EU. 2016



#### 3.1 Communication

*Emails is still the most widespread internet activity*

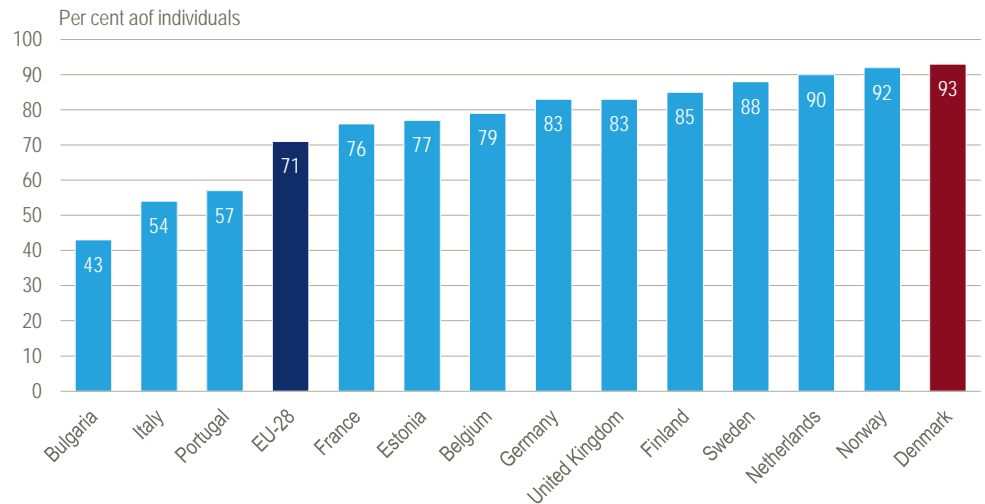
The most widespread internet activity in the EU is still sending and receiving emails. Sending and receiving emails has been at the top of the list of internet activities for many years, and 71 per cent of individuals in the 2016 EU survey responded that they use the internet for this method of communication.

*Use of emails most widespread in Denmark*

Denmark is the EU country with the highest percentage of email users in the population. In 2016, 93 per cent of Danes aged 16-74 used emails. Danes were quick to take on this digital method of communication; 74 per cent of Danes were using email as early as in 2007.



Figure 3.2 Use of email. 2016

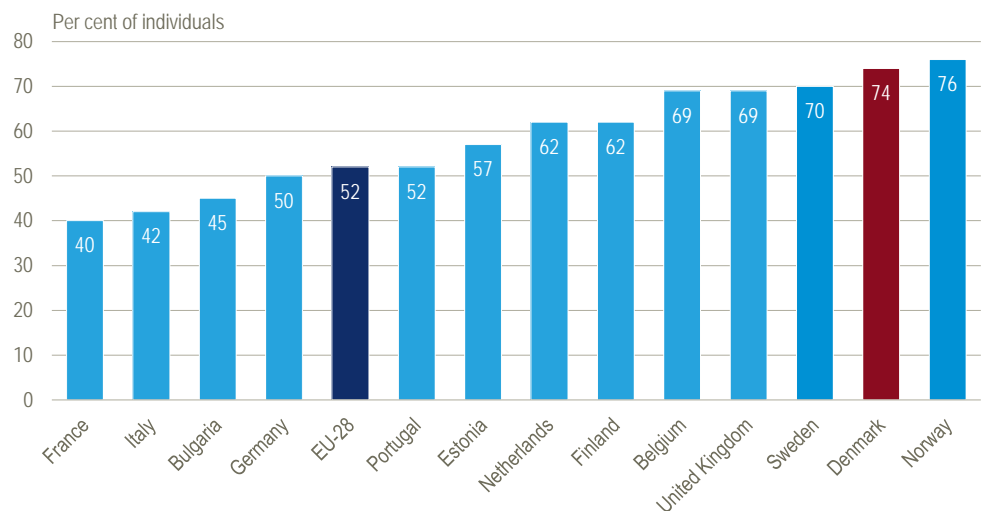


### 3.2 Social networking services

*One in two uses social networking services*

Every other European is linked to one or more online social networking services. In Denmark, the percentage share is 74, which means Denmark is only outranked by Norway, where 76 per cent of internet users use social networking services. The EU average is 52 per cent.

Figure 3.3 Use of social networking services. 2016



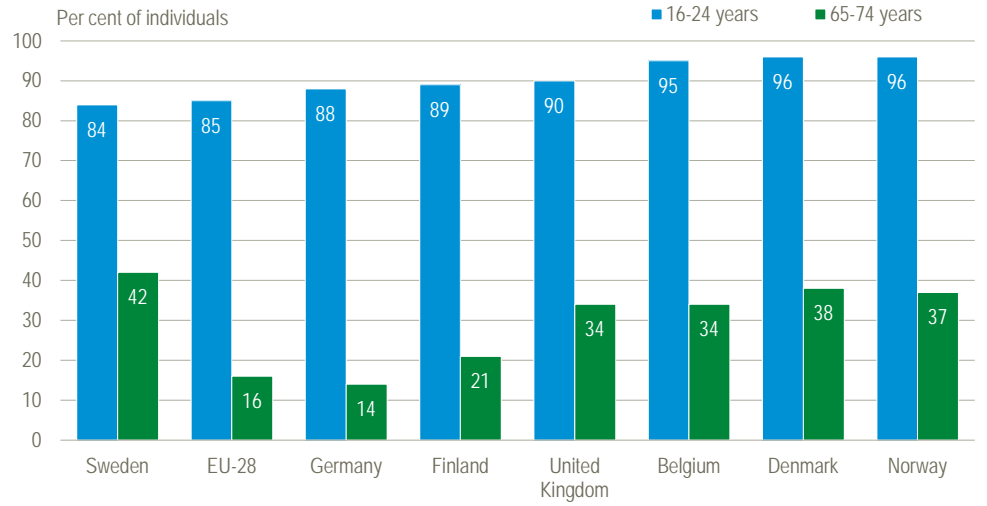
*Almost every young person uses Facebook or similar services*

There is a strong correlation between age and the use of social networking services. The younger you are, the more likely it is that your friends will be using one or more online networking services, regardless in which EU country you live.

*Senior citizens in the Nordic countries are more active on social networking platforms*

Only 16 per cent of Europeans aged between 65 and 74 use online social networking services as opposed to 85 per cent of 16-24-year-olds. In Denmark, the percentage of senior-citizen users is 38 per cent. Sweden has the largest percentage of senior citizens active on Facebook and other social networking services.

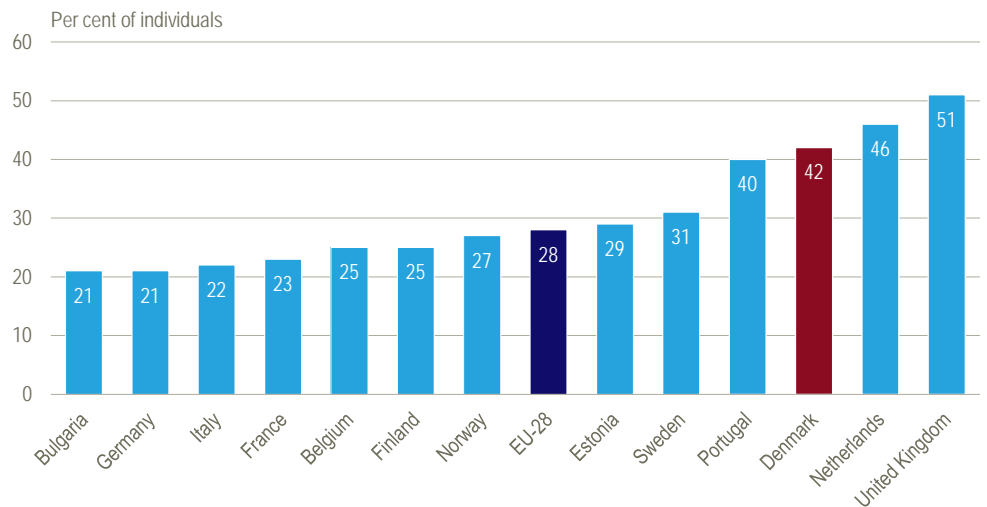
Figure 3.4 Social networking services by age in selected countries. 2016



*One in two UK citizens shares photos and thoughts online*

UK citizens are the most active with regard to sharing self-created content online, such as photos, videos, comments, blog posts, etc. One in two UK citizens uploads their 'own' content for the purpose of sharing it with others. Thus, sharing own content is more widespread in the United Kingdom than in any other country in Europe. In 2016, 42 per cent of Danes shared self-created content online, e.g. sharing photos with others. For the EU-28 as a whole, the figure was 28 per cent.

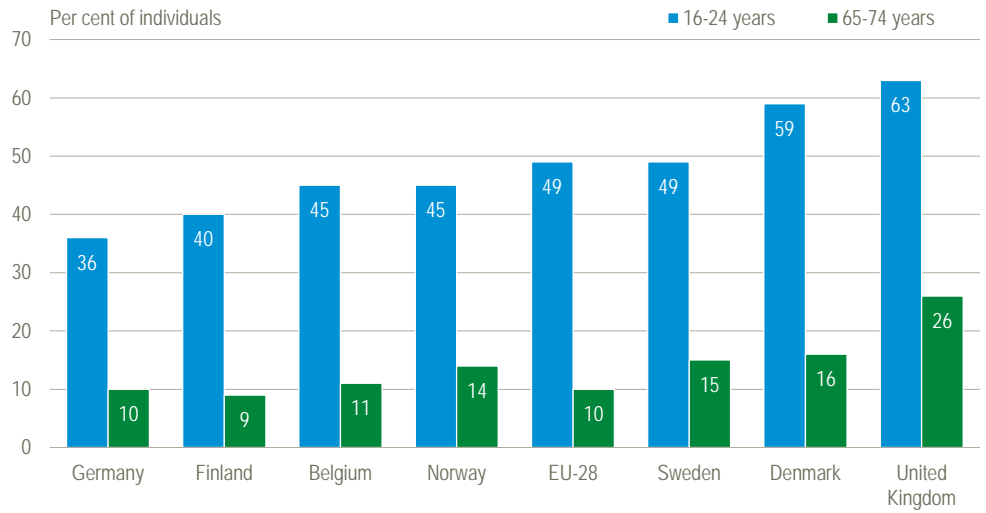
Figure 3.5 Upload of photos and other self-created content for the purpose of sharing it with others. 2016



*Elderly internet users share less content online*

Regardless of country, younger people are considerably more willing to share self-created content online than other age groups. Three in five Danes aged 16-24 share content, as opposed to only around 16 per cent of 65-74-year-olds. The age gap is less significant in Germany and Finland with regard to sharing own content online.

Figure 3.6 Upload of photos and other self-created content for the purpose of sharing it with others. 2016



### 3.3 Searching for information

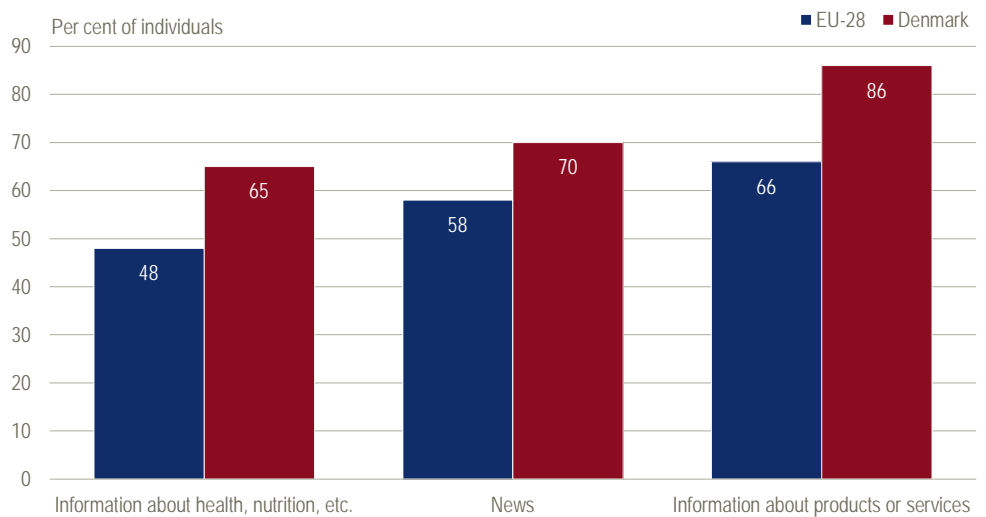
*Information about goods or services*

Searching for information about goods and services is one of the most popular internet activities. Nine in ten Danes and seven in ten EU citizens use the internet to find information about goods and services or to compare prices.

*Popular to search for health-related information*

Almost as many find health-related information online or read the news online. Around half of all EU citizens use the internet as their source of health-related information, while the same applies for two out of three Danes. Two out of three Danes also find news online.

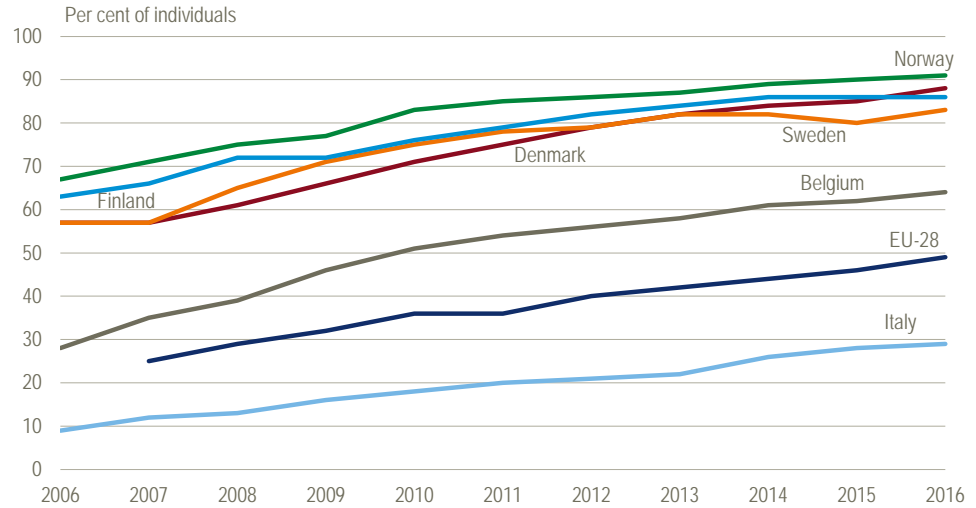
Figure 3.7 Searching for information on the internet 2016



### 3.4 Internet banking

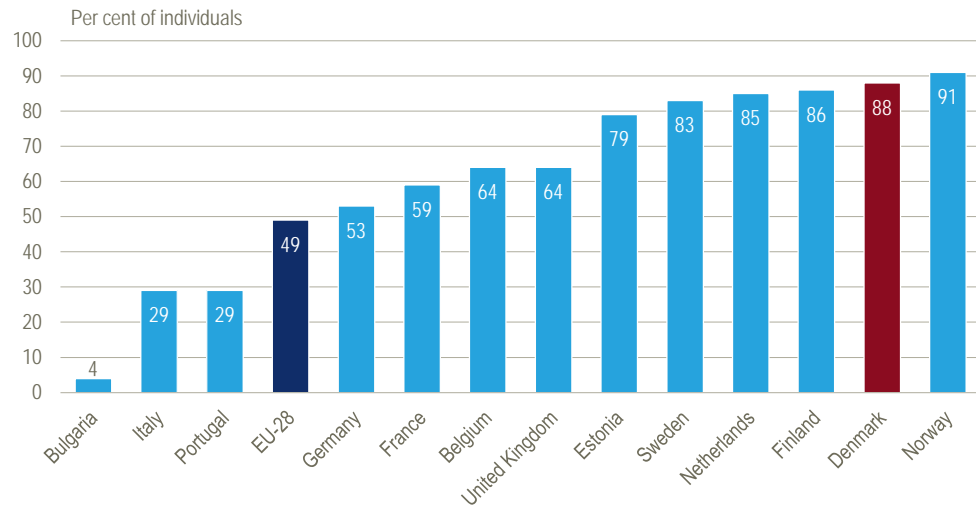
*Continued growth* The percentage of citizens in the EU using internet banking has almost doubled over the past nine years. In 2016, the share was 49 per cent, as against 25 per cent in 2007.

Figure 3.8 Trend in the use of internet banking in selected countries



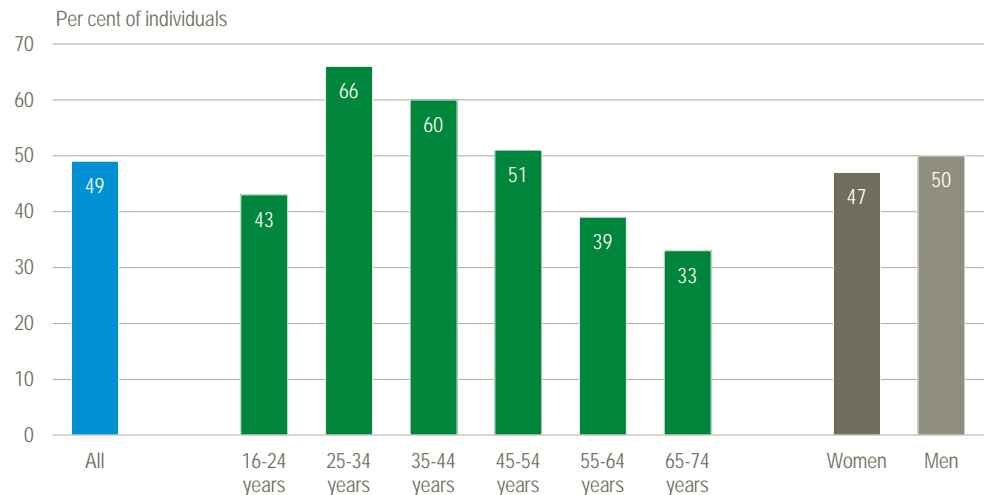
*Highest share of internet-banking users in Norway* Norway tops the list with regard to the percentage of internet-banking users. As many as 91 per cent of Norwegians go to the bank online. In Finland, Denmark and the Netherlands, the use of internet banking is at least 85 per cent.

Figure 3.9 Use of internet banking in selected countries. 2016



*Gender makes no difference, but age does* Internet-banking users in the EU are distributed fairly evenly across the two sexes. Age, however, is a differentiating factor with regard to internet banking penetration. Internet banking is used most widely by 25-34-year-olds (66 per cent) and 35-44-year-olds (60 per cent).

Figure 3.10 Use of internet banking in the EU-28 by age and gender. 2016

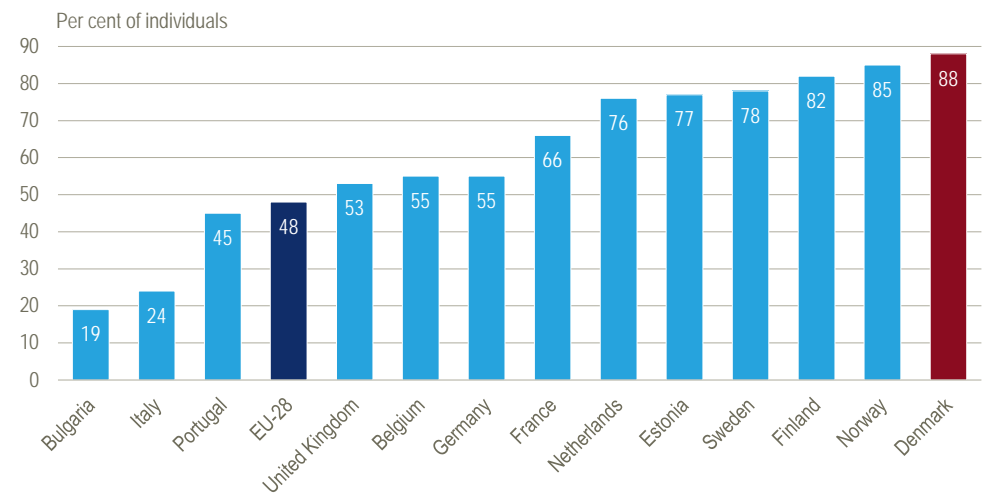


### 3.5 Interaction with public authorities

*Online self-service most widespread in Denmark*

Online self-service is most widespread in the Nordic countries and in the Netherlands. In these countries, at least three in four citizens use the internet for their interaction with public authorities.

Figure 3.11 Online self-service in selected countries. 2016



*Danes best in the EU at online self-service*

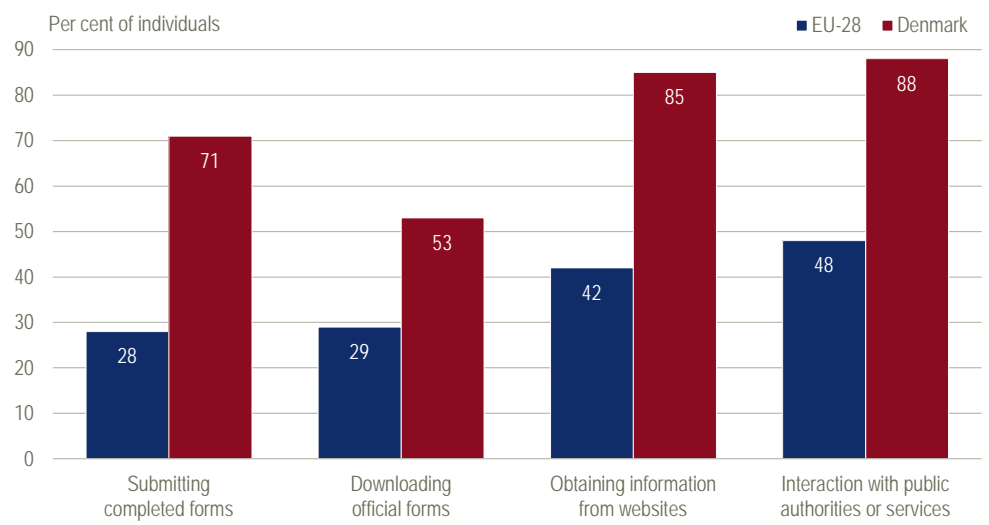
A total of 85 per cent of Danes have searched for information on the websites of public authorities, downloaded forms or submitted data electronically in the past 12 months. A total of 53 per cent have downloaded forms or similar from local government websites and 71 per cent have sent information, e.g. completed forms, to government agencies or local government via websites. In all three areas, Danes have a considerably higher level of interaction with public authorities than the EU average.

**Mandatory self-service in Denmark**

As a step in realising the common public-sector Digital Strategy 2011-2015, the Danish Parliament adopted four acts on mandatory online self-service in 2012, 2013, 2014 and 2015. With these acts, it has become mandatory for Danes to use digital solutions in their written communication with the authorities. Citizens have been allocated a digital mailbox, allowing them since 2014 to receive all their letters from public authorities.

Citizens who are unable to use the online self-service solutions, are still entitled to submit applications, notifications, etc. through non-digital channels. The individual public authority will instruct such citizens in how they can submit an application, notification, etc. if the public authority assesses, on a case-by-case basis, that there are special circumstances preventing the citizen from using the relevant online self-service solution. Special circumstances include certain disabilities, lack of digital skills, certain socially marginalised citizens, language difficulties, etc., which prevent the citizen from interacting digitally with the authorities.

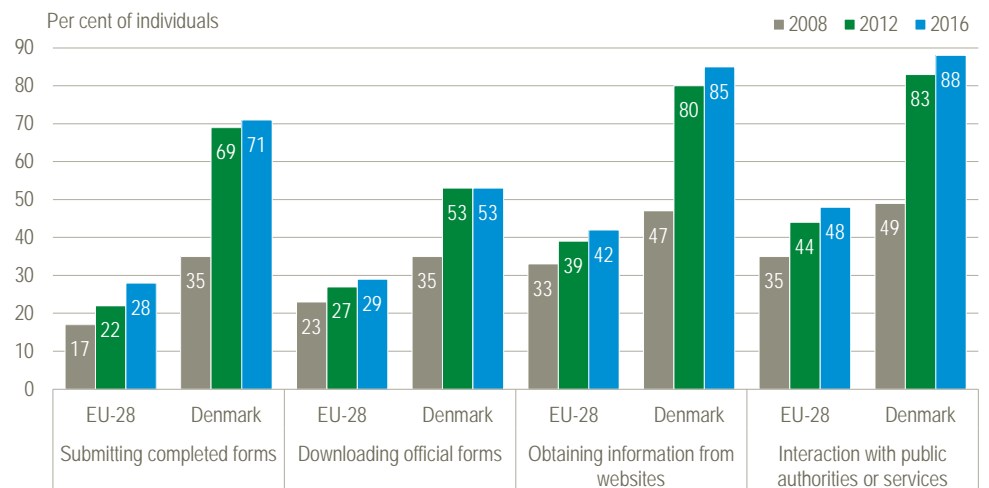
Figure 3.12 Online self-service in the past 12 months. 2016



*Online self-service solutions in rapid growth*

The use of online self-service solutions in Denmark increased significantly between 2008 and 2016. The percentage of Danes who submit completed forms to public authorities has doubled since 2008 - from 35 per cent to 71 per cent. The growth in the use of online self-service solutions has been less significant in the EU as a whole.

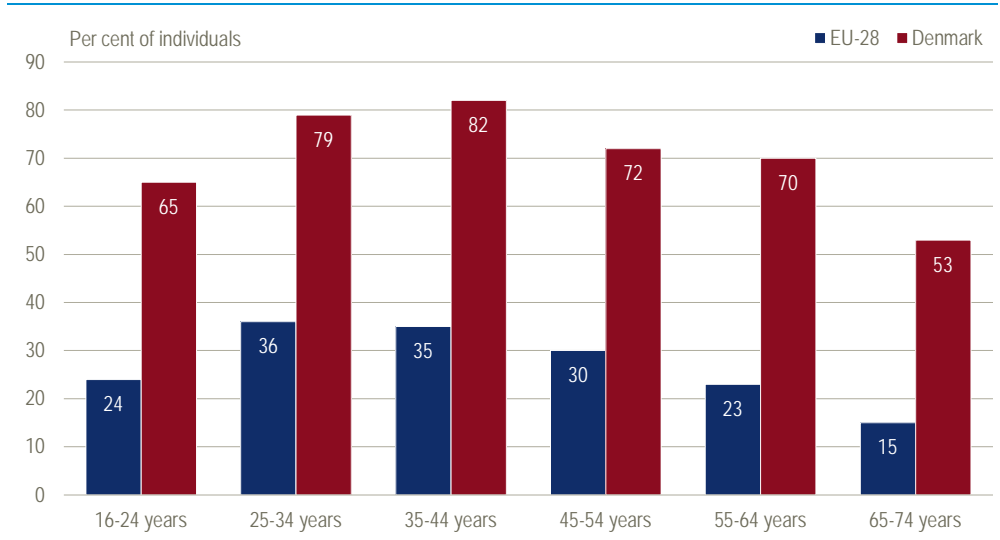
Figure 3.13 Interaction with public authorities, EU and Denmark



*Young people and the elderly lag behind the 25-54-year-olds*

Although there is a large difference between Denmark and the EU, the same pattern with regard to age groups emerges across different countries. Online self-service is most widespread among 25-54-year-olds throughout Europe while young people aged 16-24 and senior citizens aged 65-74 rank lower than all the other age groups.

Figure 3.14 Submission of completed forms, etc. to public authorities 2016

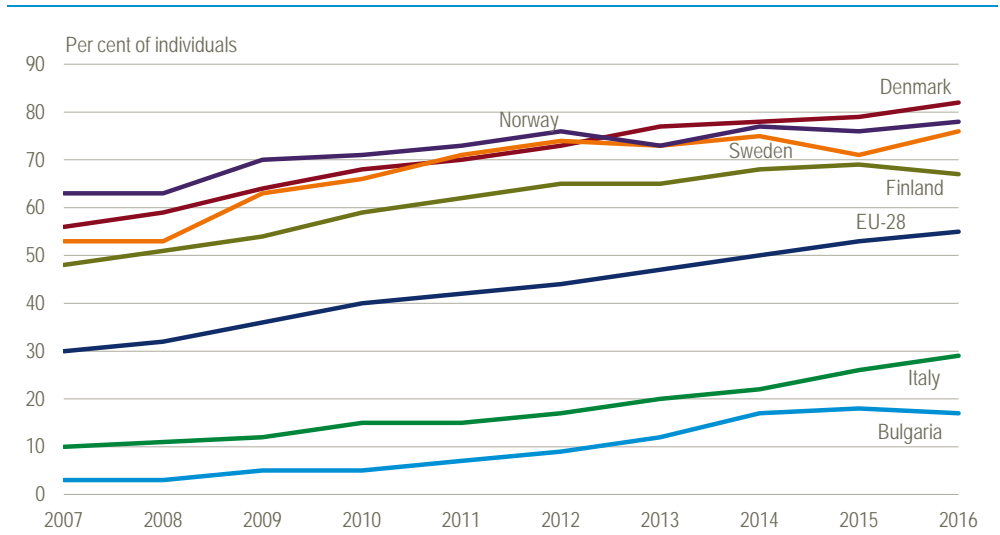


### 3.6 Online shopping

*Large increase in share of e-shoppers in the EU*

Online shopping is becoming ever more common in the EU. In 2007, only 30 per cent of the population aged 16-74 shopped online, as against 55 per cent in 2016. In some countries, the percentage of e-shoppers more than tripled from 2004 to 2016.

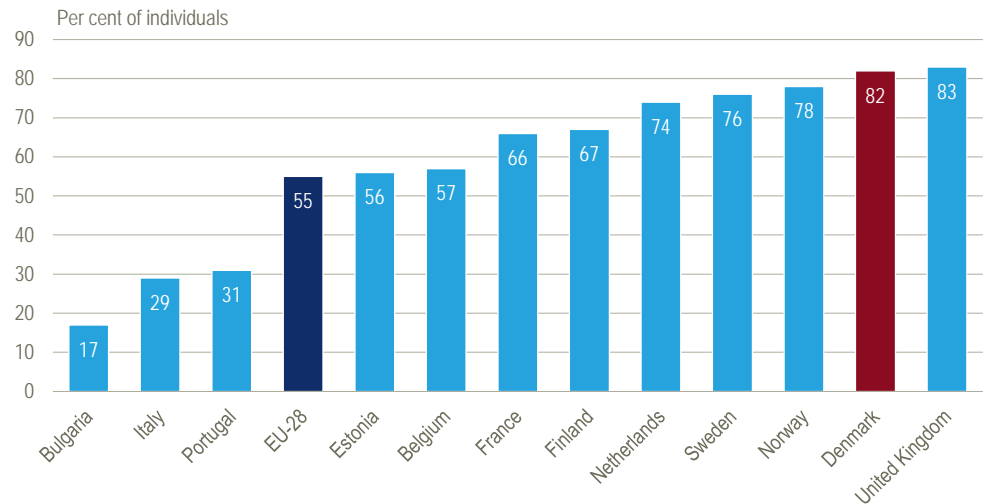
Figure 3.15 Development in online purchases in selected countries



*Denmark has one of the highest percentages of people who shop on the internet.*

In 2016, the percentage of online shoppers was highest in the United Kingdom (83 per cent) and Denmark (82 per cent). In Romania, still only one out of six citizens buys goods online.

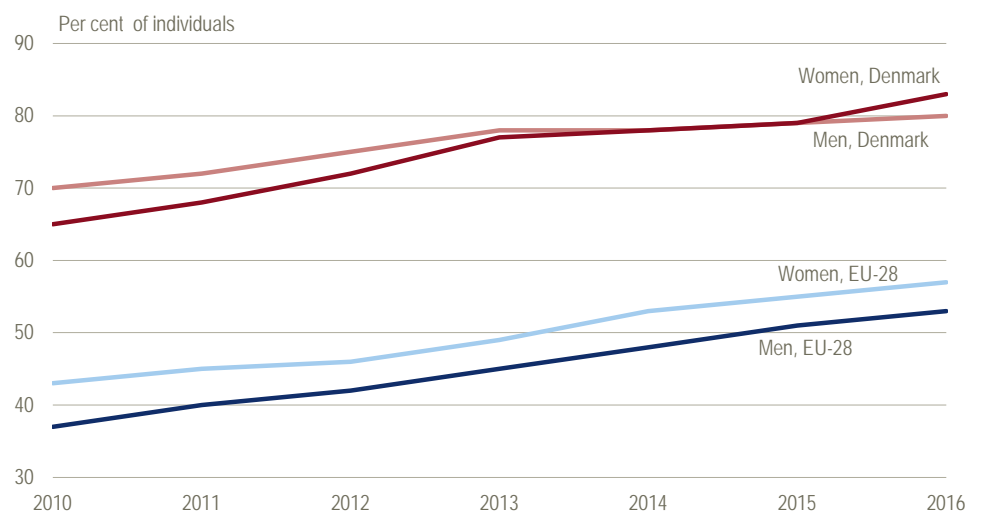
Figure 3.16 Goods purchases via the internet, in selected countries. 2016



*More men shop online in the EU*

More men than women shop online in the EU. This has been the trend throughout the period. In 2016, 57 per cent of men and 53 per cent of women reported they had shopped online. The difference is therefore only four percentage points; which is slightly down from 2010, when the difference was 6 percentage points.

Figure 3.17 Online purchases in Denmark and in the EU-28, by gender



*The gender difference is reversed in Denmark relative to the EU*

In Denmark, a smaller share of men than women reported having purchased goods or services online in the 12 months prior to the survey. The shares for women and men are 83 per cent and 80 per cent, respectively. Until 2014, e-commerce was more widespread among men, but in 2014 the difference between men and women with regard to online shopping was gone. In 2016, there were more Danish women shopping online than men.

*Definition of e-shoppers*

Citizens who bought online within the past 12 months prior to the survey are referred to as e-shoppers in the following section, which describes various factors relating to online purchases.



Table 3.1 When did you last buy or order goods or services for private use over the internet? 2016

	Most recent online purchase			
	Last 3 months	3-12 months	Last 12 months	Never
	per cent of the population, aged 16-74			
Belgium	46	10	57	24
Bulgaria	11	6	17	42
<b>Denmark</b>	<b>71</b>	<b>10</b>	<b>82</b>	<b>10</b>
Estonia	45	11	56	25
<b>EU-28</b>	<b>45</b>	<b>10</b>	<b>55</b>	<b>24</b>
Finland	48	20	67	21
France	52	13	66	20
Greece	23	8	31	35
Ireland	41	18	59	17
Italy	20	9	29	37
Croatia	25	8	33	36
Latvia	31	13	44	28
Lithuania	24	9	33	35
Luxembourg	69	10	78	14
Netherlands	63	11	74	12
Norway	61	17	78	12
Poland	31	11	42	25
Portugal	23	8	31	36
Romania	8	4	12	46
Slovakia	41	15	56	21
Slovenia	30	11	40	30
Spain	35	9	44	33
United Kingdom	78	5	83	11
Sweden	63	13	76	13
Czech Republic	29	18	47	23
Germany	64	10	74	12
Hungary	27	12	39	38
Austria	48	10	58	23

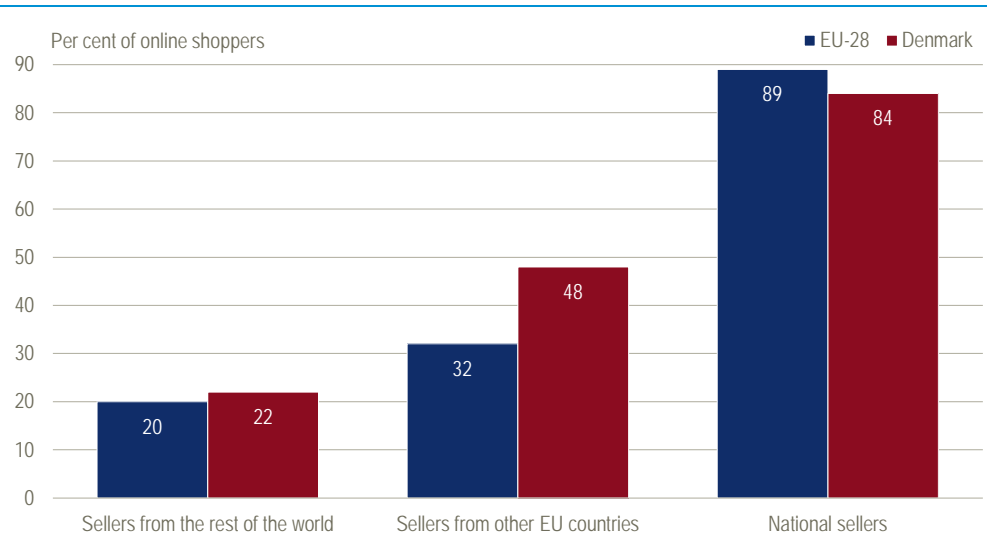
*One in two Danish e-shoppers buys goods and services in other EU Member States*

**When Danish consumers shop online, 48 per cent find their goods in online shops in other EU Member States. This corresponds to 1.65m Danes. In 2008, just below 800,000 Danes bought goods from online shops in other EU Member States. In the EU, three out of ten e-shoppers buy goods from online shops in other EU Member States. A total of 84 per cent of Danish e-shoppers buy goods from Danish online shops, while 89 per cent of citizens in the EU buy goods from national online shops.**

*Goods bought in online shops outside the EU*

**Slightly more than one in five Danish e-shoppers buy goods sold by online shops outside of the EU. The share is almost the same for the EU-28.**

Figure 3.18 Cross-border e-commerce. 2016



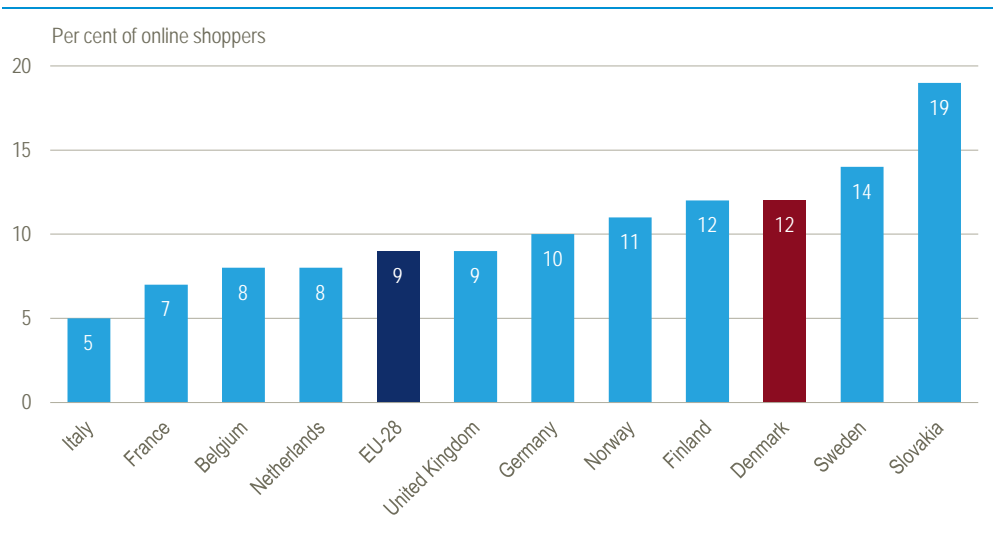
Every other EU citizen uses social networking services

The share of Europeans who use social networking services continues to rise and was 52 per cent in 2016. For this reason, it is relevant to estimate how many citizens buy goods or services by clicking directly on an advertisement on a social media website.

Online purchases when using social media

On average, one in ten e-shoppers in the EU bought goods etc. by clicking on an advertisement on social media such as Facebook. For Denmark, the figure is 12 per cent; i.e. slightly higher than the EU average. One in five Slovakian e-shoppers trades online by clicking on advertisements etc. on social media.

Figure 3.19 Online purchases by clicking on online advertisements. 2016



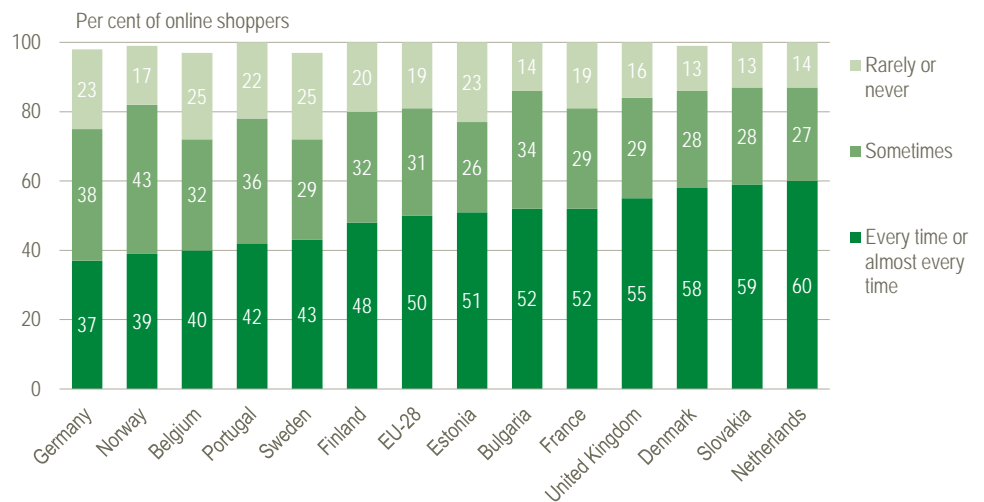
Searching for information before online purchases

Consumers often investigate the market before they shop online. There are several options available for learning more about the goods you plan to buy. Some people read information from retailers and manufacturers, study price comparisons, or read about the experience of others who have bought the same product.

Information from retailers and manufacturers

Half of European e-shoppers reported that they always read information on the websites of retailers etc. when shopping online. Danish e-shoppers are more inclined to read information available on the website in connection with their online purchase, and three out of five study this information before every online purchase. In comparison, only 37 per cent of German e-shoppers study this information.

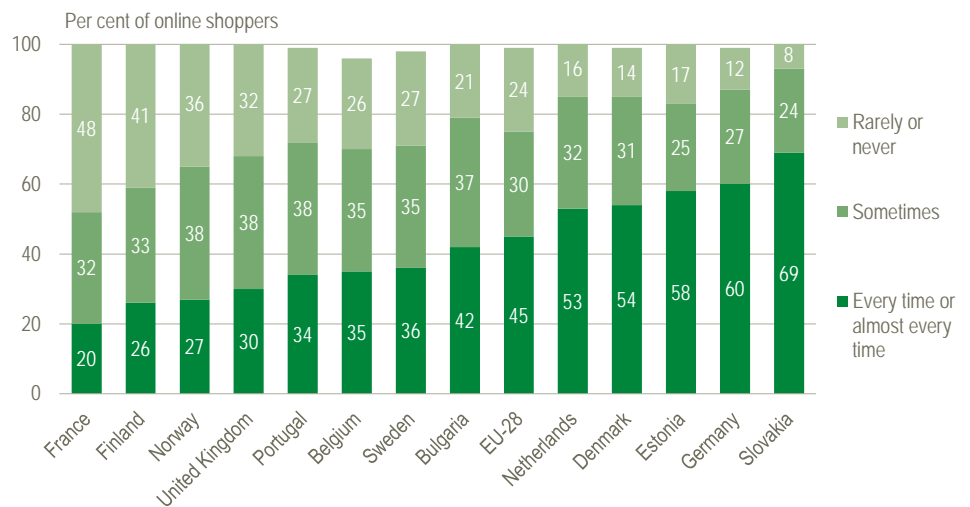
**Figure 3.20** How often do you read the information from retailers, manufacturers or service providers before you buy something online? 2016



**Price and product comparisons**

Danish e-shoppers compare the prices of different retailers and compare products to a greater extent than the EU average. French e-shoppers spend the least time comparing prices and products. Only one in five e-shoppers compares prices and products every time he or she shops online. For Germany, the figure is three-times higher.

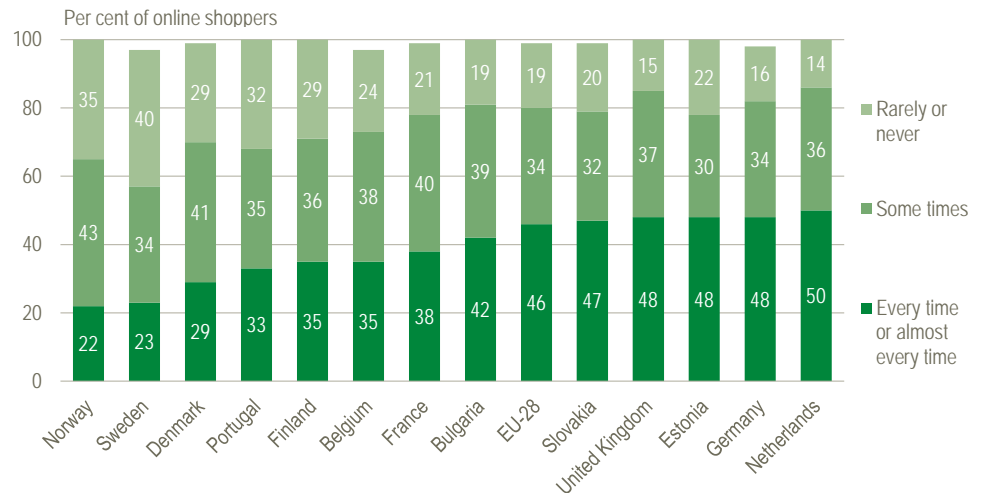
**Figure 3.21** How often do you read price and product comparisons before you shop online? 2016



**Consumer reviews**

Four in five e-shoppers in the EU read about other customers' experiences etc. sometimes or every time before they shop online. One in three Danish e-shoppers studies customer reviews every time they shop online. German and Dutch online shoppers are the most likely to examine what other customers think about the product or the retailer.

Figure 3.22 How often do you read customer reviews before you shop online? 2016



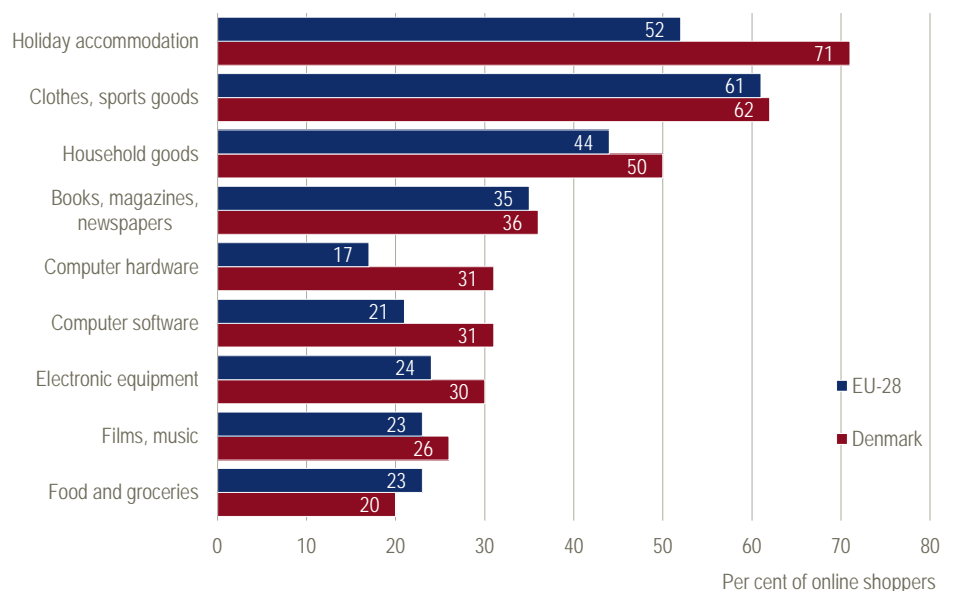
*Travel and cinema tickets are bought more online in Denmark*

Cultural experiences such as theatre, concert and cinema tickets and travel-related products such as hotel accommodation and plane, train and ferry tickets are bought most often by Danes online. When citizens within the EU shop online, they primarily shop for clothes, sports and leisure equipment as well as travel-related products.

*Clothes and leisure equipment are bought by equally many in the EU as in Denmark*

Clothes, sports and leisure equipment are bought by a little fewer than six out of ten e-shoppers in Denmark and in the EU. Compared to the average European e-shopper, a larger share of Danish e-shoppers click their way to new computer hardware and software, electronics and household appliances. Online shopping is generally more widespread in Denmark, regardless of the mix of goods in the e-basket.

Figure 3.23 Goods or services bought over the internet. 2016



*Online purchases of groceries are less common in Denmark*

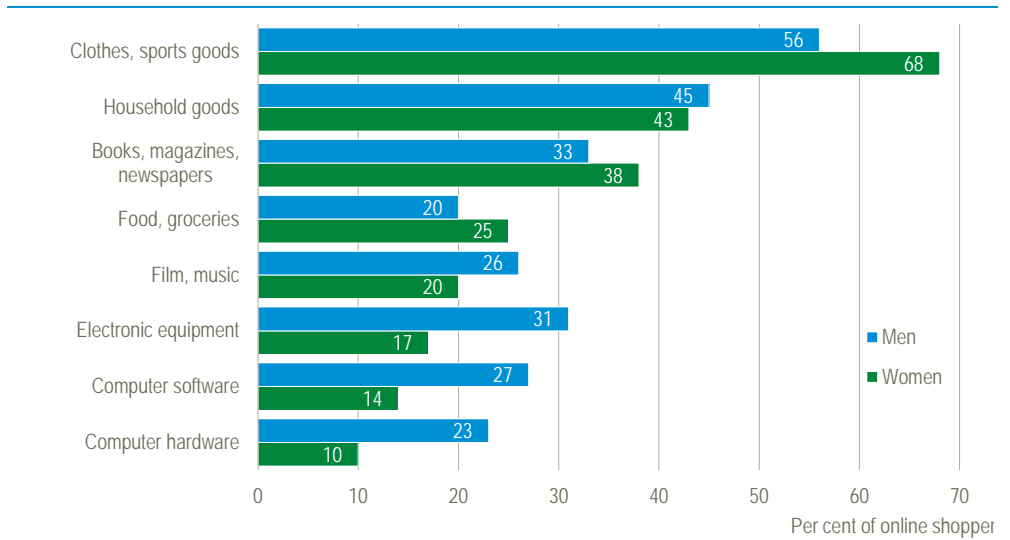
20 per cent of e-shoppers in Denmark buy groceries. The EU-28 average is 23 per cent. This means that groceries are the only product group for which Denmark ranks below the EU average for online shopping within the past 12 months.

*Women and men e-shop differently*

A more detailed analysis of the results of the statistics reveals a difference in what men and women shop online. A significantly larger number of male e-shoppers add

technology such as computer hardware and electronics to their e-basket, while more women than men click their way to online purchases of clothes, books and groceries. Household goods are widely bought by both men and women.

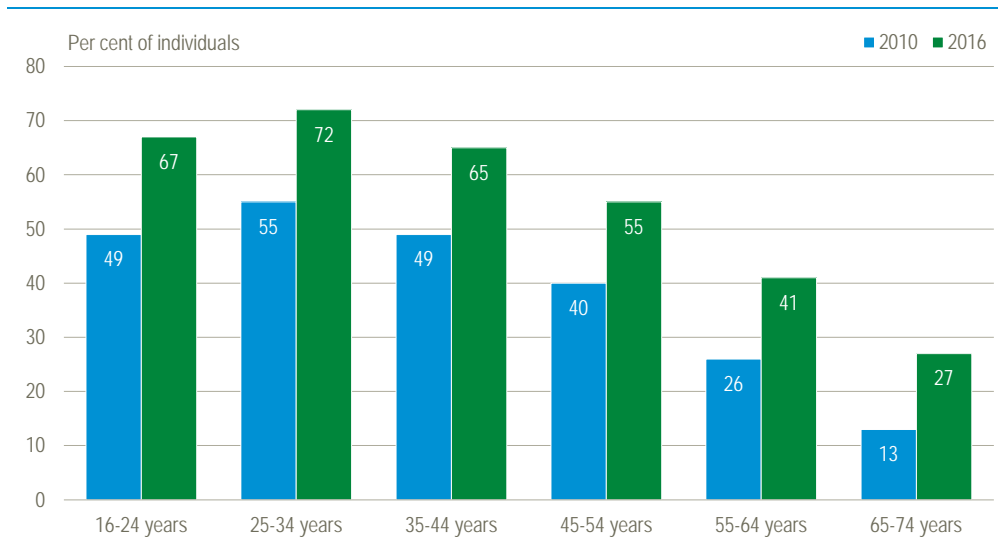
Figure 3.24 Goods or services bought over the internet in the EU, by gender. 2016



*Continued growth in online shopping for all age groups*

The 25-34-year-olds make extensive use of the internet to buy goods or services. A total of 72 per cent of this age group had shopped online within the last 12 months. Citizens over 65 years are also represented. About one in four of the 65-74-year-olds shops on the internet. Online shopping is becoming ever more common in all age groups. In the oldest age group, the percentage of e-shoppers has more than doubled over a six-year period.

Figure 3.25 Purchases of goods over the internet in the EU



*Half of older internet users shop online*

Online shopping is less common among the older EU citizens. Only 27 per cent of Europeans aged 65-74 shop online as against 67 per cent of 16-24-year-olds and 72 per cent of 25-34-year-olds. The difference between the two age groups can be explained by a considerably lower proportion of internet users among the elderly. Considering only the internet-using group of senior citizens, the percentage of e-shoppers is 53 per cent. The corresponding figure for Danes aged 65-74 is 68 per cent.

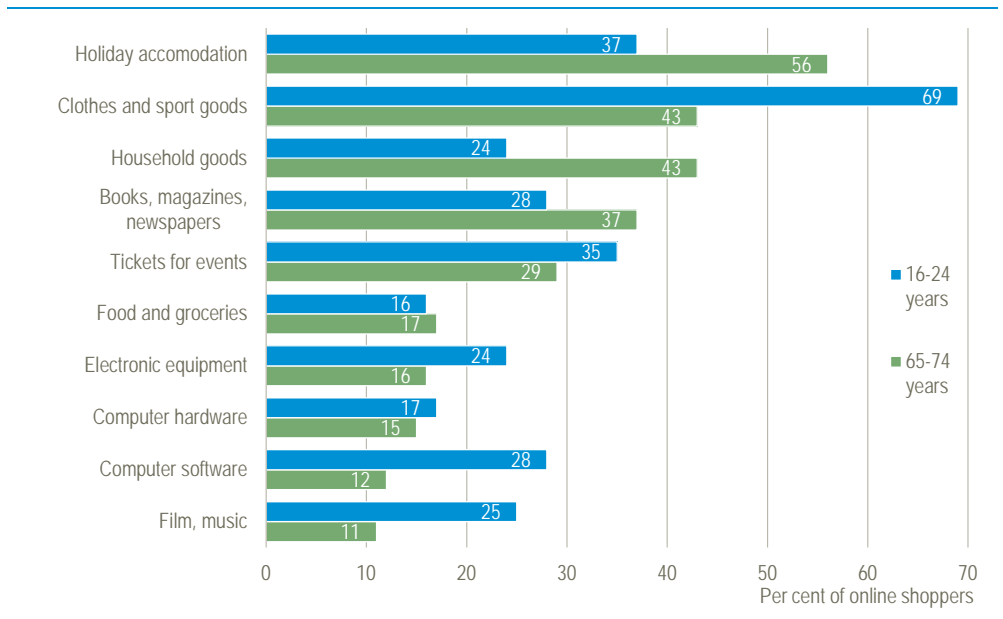
*Age has less significance in Denmark*

Young people in Denmark are also more enthusiastic e-shoppers than their grandparents. However, the difference is much smaller in Denmark, where 59 per cent of 65-74-year-olds buy goods and services online as against 90 per cent of younger citizens aged 16-24.

*Large differences in shopping patterns between young and elderly e-shoppers*

There are large differences with regard to how the youngest and the oldest e-shoppers choose to fill their e-baskets. While 16-24-year-olds buy clothes and sports equipment, the elderly are more inclined to buy holidays. Thus, 69 per cent of young e-shoppers bought clothes and leisure equipment, while this only applies for 43 per cent of the elderly. For travel and hotel stays, the picture is different, with 56 per cent of the elderly having bought these products online, while the figure is only 37 per cent for young people.

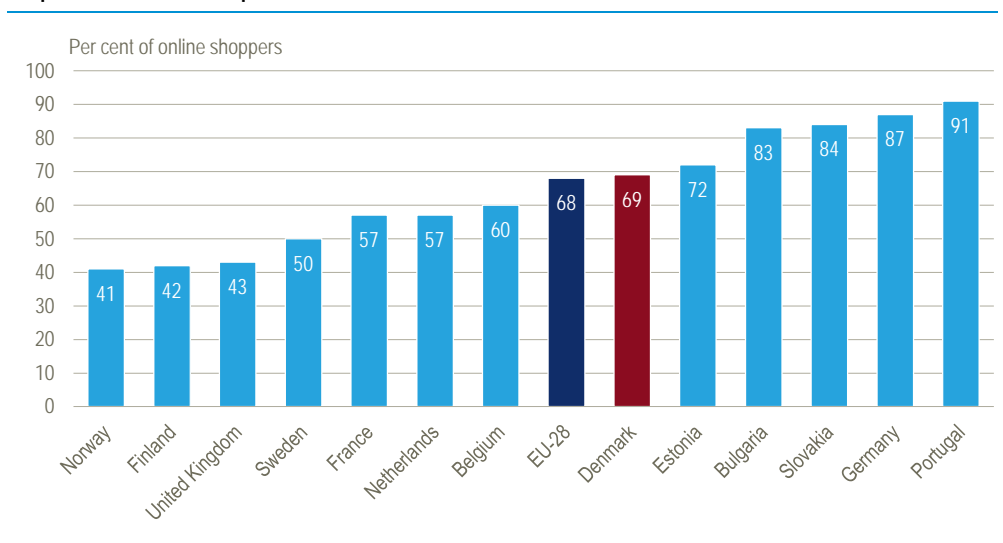
Figure 3.26 Goods or services bought over the internet in the EU. 2016



*Most e-commerce transactions are unproblematic*

Most e-shoppers experience no problems in connection with their purchases. A total of 68 per cent of those who shop online in the EU have never experienced problems in connection with purchases or with receiving the goods or services they ordered. The figure is almost the same for Denmark, i.e. 69 per cent.

Figure 3.27 Unproblematic online purchases. 2016



*Norwegians experience more problems*

The percentage of e-shoppers who experience problems when they buy online is highest in Norway. Two out of five e-shoppers in Norway reported not having experienced any problems in connection with their online purchases within the past 12 months. e-shoppers in Portugal experienced the least problems with their online purchases in 2016. Nine out of ten Portuguese responded not having had any problems.

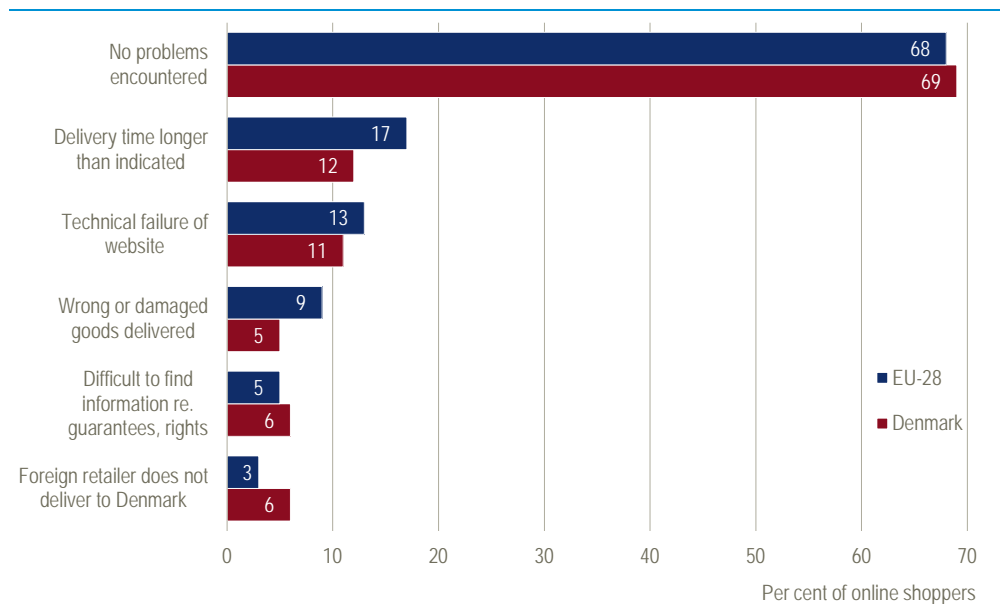
*Dissatisfaction with delivery*

It often takes longer to receive goods than expected. A total of 17 per cent of European e-shoppers experience problems with delivery time. Technical problems during the order or payment process often annoy e-shoppers. A total of 13 per cent of e-shoppers in the EU stated problems of a technical nature when asked about their negative experiences from online purchases.

*When foreign retailers do not deliver to Denmark*

A total of 6 per cent of Danish e-shoppers experience that the goods they want to buy cannot be delivered to Denmark. This share corresponds to around 200,000 Danes, who experience not being able to buy goods that are sold online, because there is no delivery to Denmark. European e-shoppers experience this less often, only 3 per cent as opposed to 6 per cent of Danes.

Figure 3.28 Barriers to e-commerce. 2016



## 4 Information security

### 4.1 Personal information on the internet

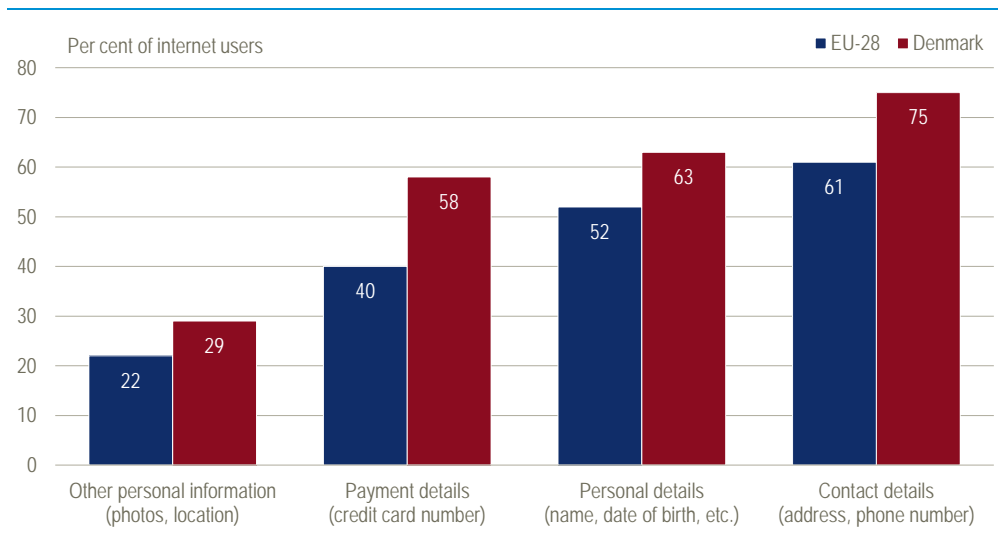
*Growing cybercrime* As internet and computer usage increases, so does the risk of attacks and loss of security, confidentiality, time or money. New types of cybercrime are emerging all the time and often target private citizens.

*Focus on protection of personal information* In this survey, respondents were asked what type of information they provide online and how they protect their information from unauthorised access.

*Four types of personal information* Respondents were asked about four types of information: personal details, e.g. name, date of birth or identity card number; contact details, e.g. home address, phone number or email; payment details, e.g. debit card number; and other personal information, e.g. photos, tags, location, health information, employment, etc.

*Danes are very likely to share* Regardless of the type of information, a generally larger percentage of Danes than other Europeans share their data online. Three in four Danish internet users provide contact details online, e.g. private address, phone number or email address. Personal details, e.g. name, date of birth or civil registration number are also often shared by many; i.e. around 63 per cent of internet users.

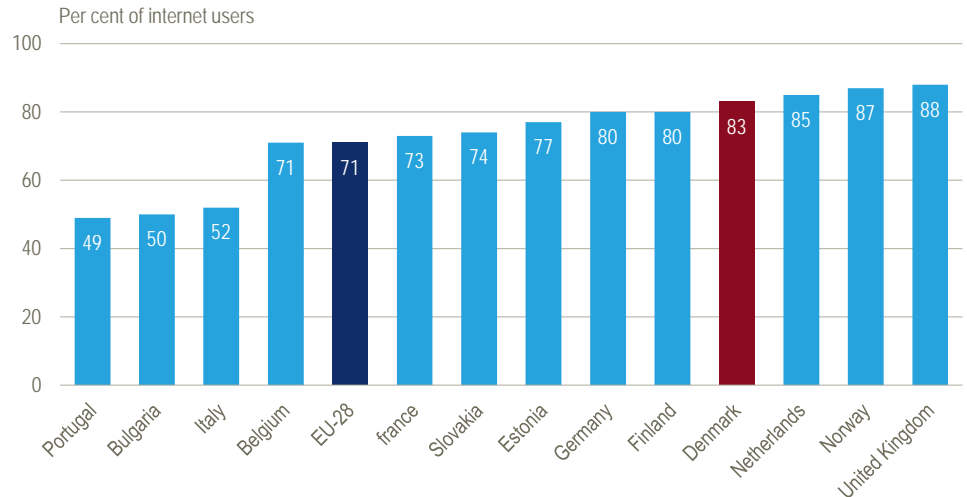
Figure 4.1 Types of information provided over the internet, EU-28 and Denmark. 2016



*Less sharing of personal information in Southern Europe* A total of 83 per cent of Danish internet users (or around four out of five Danish internet users) provide personal information over the internet. The EU average is 71 per cent; i.e. 12 percentage points lower. The survey results seem to suggest that personal information is more widely shared in the northern European countries. Only one in two internet users provides personal information over the internet in Portugal. This difference could perhaps be attributed to fewer digital self-service solutions in Portugal.

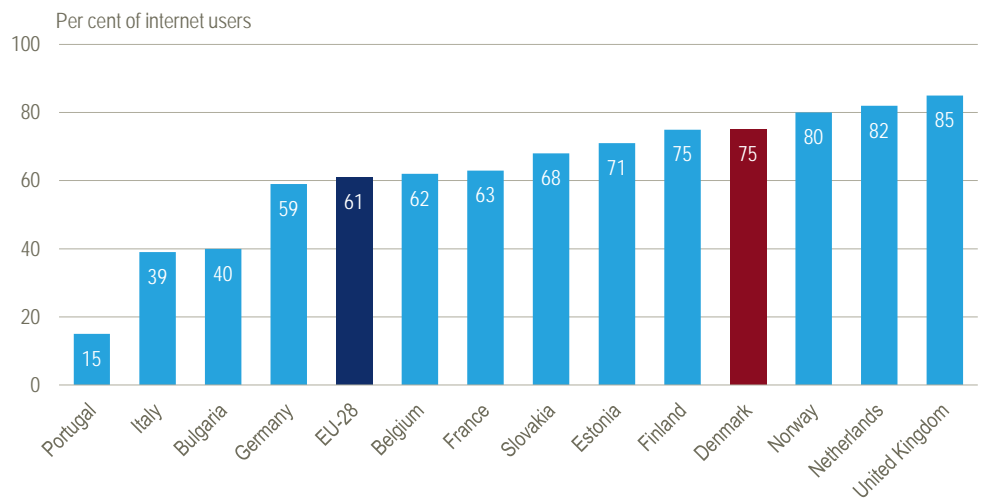


Figure 4.2 Share personal information over the internet. 2016

*Contact information*

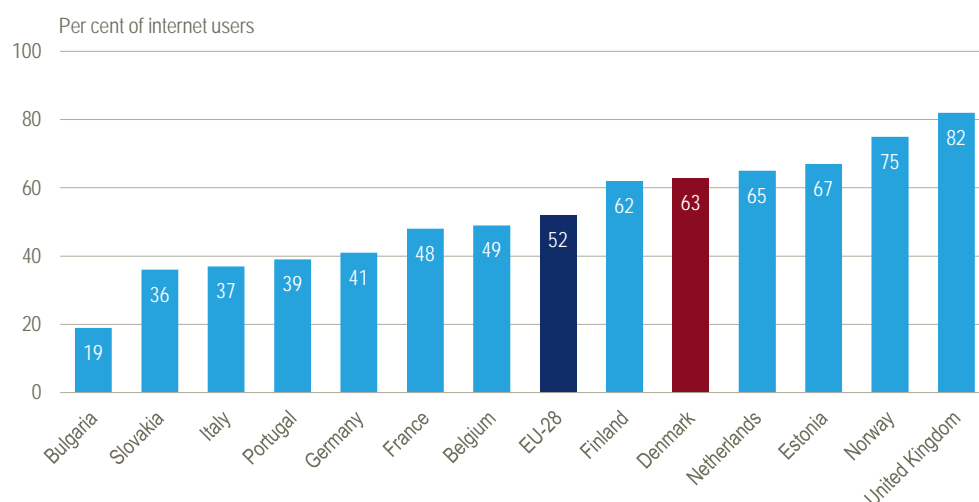
Sharing contact information such as private address, phone number and email address is most common in the United Kingdom, the Netherlands and Norway, followed by Denmark. Only 15 per cent of Portuguese internet users responded that they provide contact information over the internet.

Figure 4.3 Share contact information such as private address, phone number and email address over the internet. 2016

*Personal details such as civil registration number or date of birth*

On average, one in two European internet users shares personal details such as civil registration number or date of birth. The corresponding figure is 63 per cent in Denmark and 82 per cent in the United Kingdom. Only four out of ten German internet users provide date of birth, civil registration number or other personal details online.

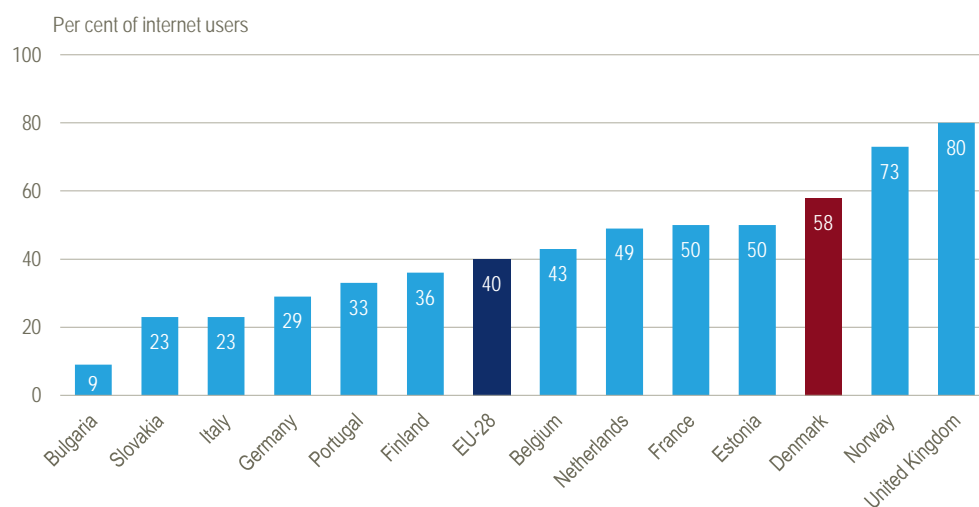
**Figure 4.4** Share personal details such as name, date of birth and civil registration number over the internet. 2016



*Payment details, e.g. credit card number*

People are more willing to share their payment details than their contact details and personal details. Not surprisingly, payment details are shared more widely in the countries with the highest percentages of e-shoppers; i.e. the United Kingdom, Norway and Denmark. On average, around four in ten European internet users provide payment details online.

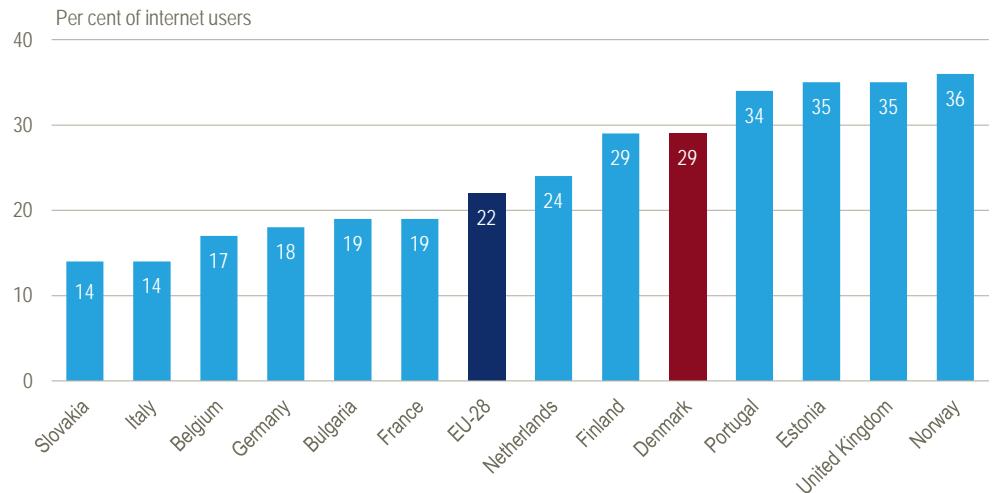
**Figure 4.5** Share payment details such as credit card number. 2016



*Other personal information such as photos, tags, location, etc.*

Other personal information such as photos, tags, location, health data, employment, etc. is shared less extensively than the types of personal information mentioned above. The EU average is 22 per cent; i.e. 7 percentage points lower than the 29 per cent for Denmark.

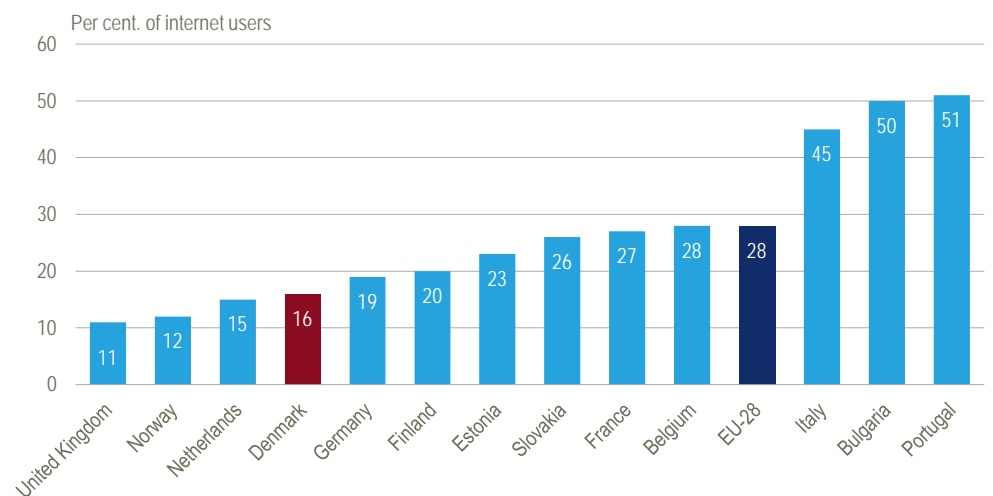
Figure 4.6 Share other personal information such as photos/tags. 2016



*More people share personal information in Northern Europe*

Southern Europe has the highest percentage of individuals who do not share any type of personal information online. The EU average is 28 per cent of internet users. Around 16 per cent of Danish internet users responded that they do not share personal information online. For Norway and the United Kingdom the figures are 12 per cent and 11 per cent, respectively.

Figure 4.7 Share no information online. 2016



## 4.2 Digital self-defence

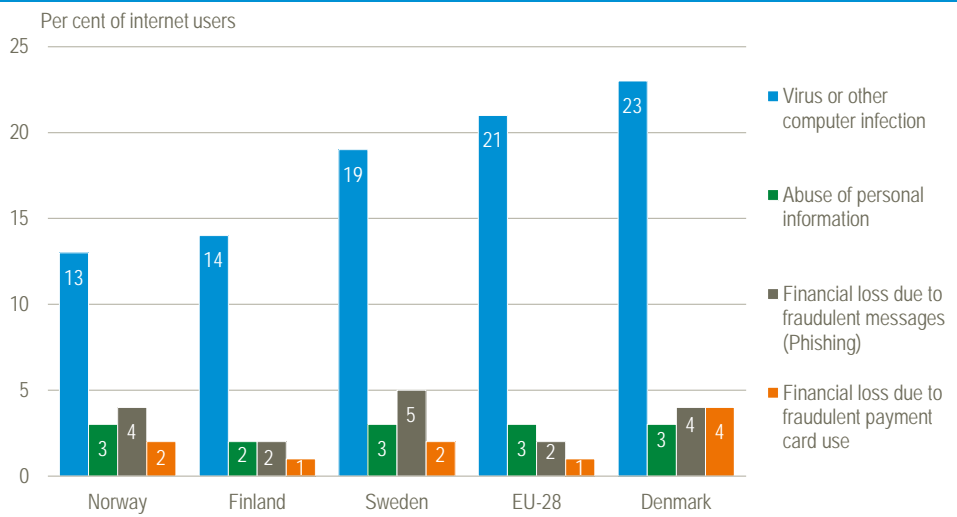
*A total of 25 per cent experience security issues*

One in four European internet users experienced security issues in 2015. Security issues include computer virus attacks; abuse of personal information, photos, etc.; and financial loss after responding to fake emails or due to credit card abuse. The Danish share of internet users with security issues in 2015 was 29 per cent; i.e. just above the EU average of 25 per cent.

*Virus attacks most common*

Abuse of sensitive personal data and financial loss can have dire consequences. Fortunately, this type of security issue is much less widespread than virus attacks.

Figure 4.8 Loss of time, information or money when using the internet for private purposes. 2015



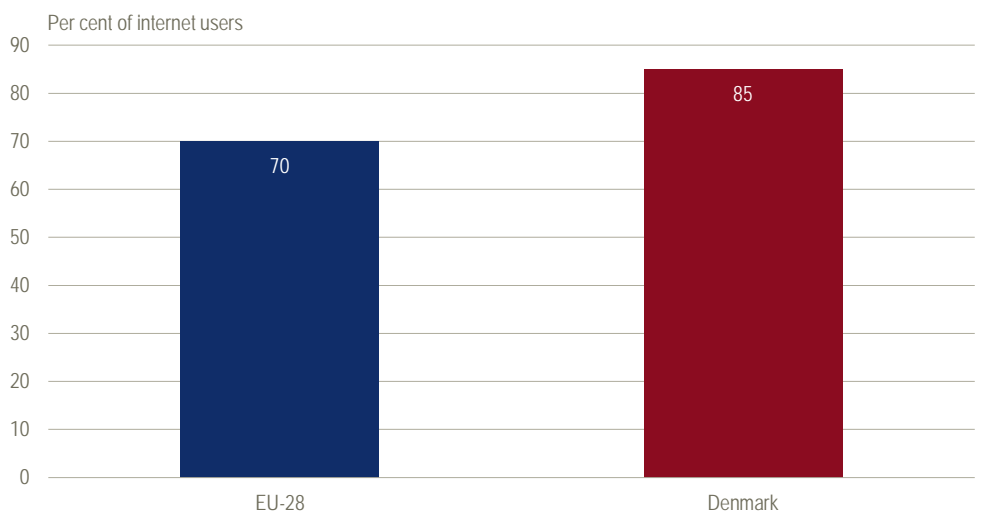
*Managing other people's access to your personal information on the internet*

This section describes a number of factors relating to the protection of personal information in connection with internet activities. There are a number of steps you can take to manage other people's access to your personal, and often private, information online. How citizens manage unauthorised access to their data on the internet differs significantly across EU Member States.

*Differences in privacy measures across Member States*

The preferred measure among Europeans to manage other people's access to their personal information on the internet is to refuse permission to use the information for advertising purposes. This is the most widely used privacy measure in 12 EU Member States. In nine EU Member States, citizens primarily protect their privacy by reading statements on the processing of personal data before providing sensitive information. Restricting the access of others to one's profile or content on social media is also a popular method of protection and this is the most widely used security measure in six Member States. One in two internet users in the EU checks that websites where they need to provide personal information are secure, e.g. that they are https sites or have security certificates (e.g. the Danish e-commerce certificate, the e-mark).

Figure 4.9 Have taken steps to protect online personal information from unauthorised access. 2016



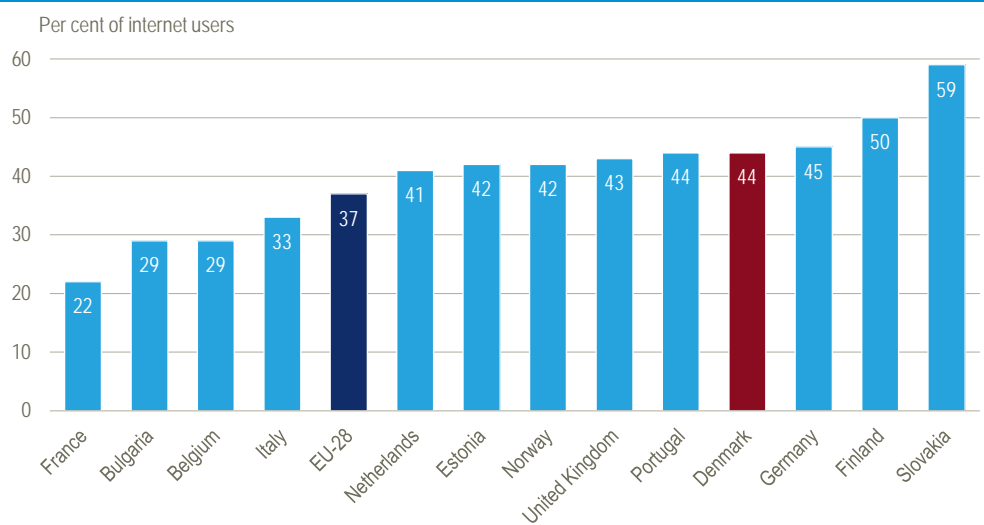
*15 per cent have no digital self-defence in Denmark*

A large proportion of Danish internet users (85 per cent) practice digital self-defence by managing who can access their personal information online. This leaves 15 per cent of Danes without digital self-defence, which is half the EU average.

*Use of security measures in selected EU Member States*

The following section describes the popularity of the individual security measures in selected EU Member States. Danish internet users apply all of the different security measures more widely than the EU average.

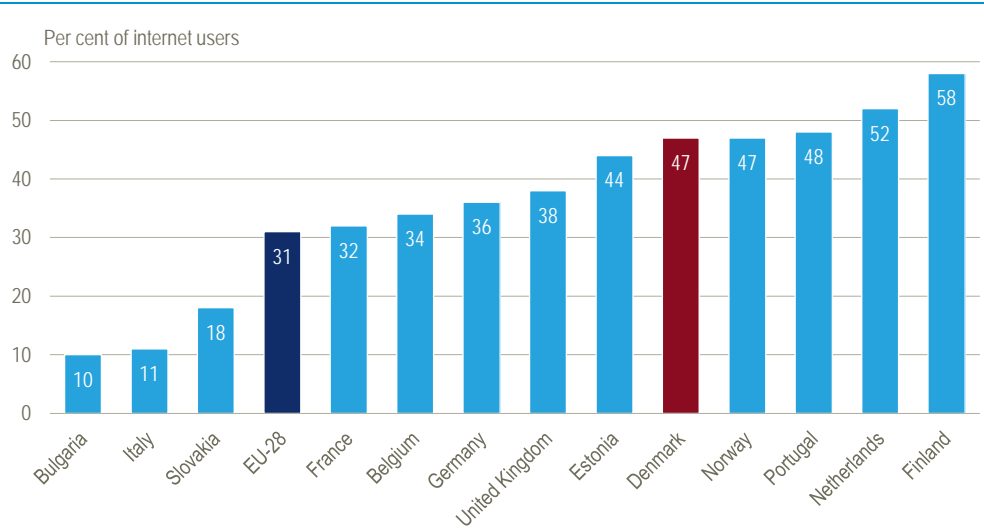
**Figure 4.10** Have read the privacy policy statement. 2016



*Privacy policy statement*

It is always a good idea to read the privacy policy statement before providing sensitive data on the internet. Around 37 per cent of European internet users reported having read the privacy policy statement before sharing personal information on the internet within the past 12 months. For Denmark this figure is 44 per cent.

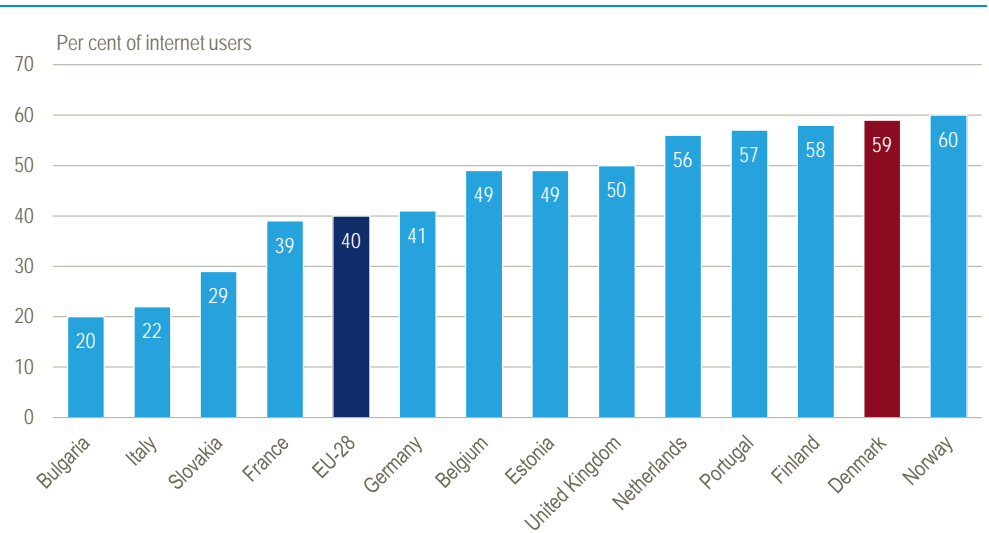
**Figure 4.11** Restricted access to geographical location. 2016



*Restricted access to geographical location.*

Restricting unauthorised access to one's geographical location is another way to protect against cybercrime. A total of 47 per cent of Danish internet users reported that they restrict unauthorised access to their geographical location. The EU average is 31 per cent; i.e. 16 percentage points lower.

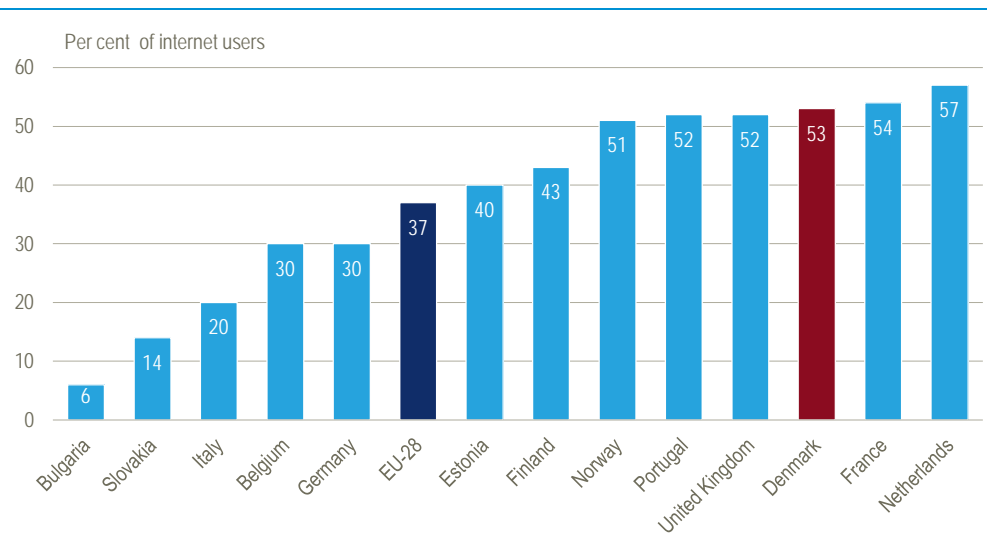
Figure 4.12 Restricted access to profile etc. on social media. 2016



Privacy protection on social media

More than half of Danes restrict access to their profile or other content on social media. This corresponds to 59 per cent of Danish internet users. Citizens in the Nordic countries spend more time on social media and are better at restricting unauthorised access to their profiles on social media. On average, four out of ten European internet users restrict access to their information on social media.

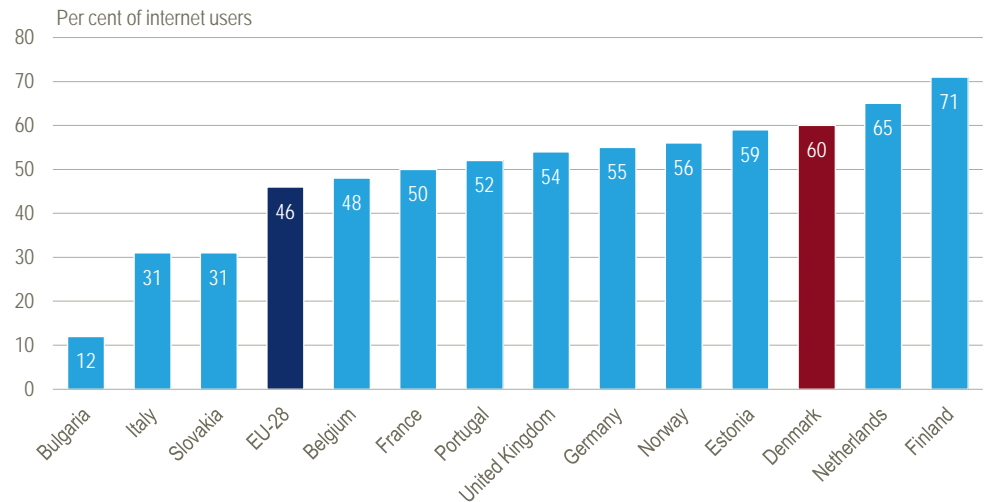
Figure 4.13 Checked security of websites. 2016



The majority of people do not check the security of websites

It may be a good idea to check the security of websites, e.g. in connection with online shopping. For example, you can check that the address in the address field starts with "https" and not "http". The "s" stands for "secure". Security certificates and logos (such as the Danish e-mark) are also a sign that the e-shop meets current legislation and numerous requirements aimed to protect consumers. About one in two Danish internet users checks whether the website through which they are about to provide personal information is secure. The average figure for the EU is only 37 per cent.

Figure 4.14 Have refused advertising. 2016

**Blocking advertisements**

A total of 46 per cent of internet users in the EU have refused to give third parties permission to use their information for advertising purposes. Refusal to allow information to be used for marketing purposes is most widespread in Finland - 71 per cent of Finnish internet users have refused to allow their information to be used for advertising. The corresponding figure for the Netherlands is 65 per cent and for Denmark 60 per cent.

**Cookies**

A cookie is a small text file which makes it possible to store information or access information already stored on the user's pc, smartphone, tablet or similar for the purpose of collecting data about the user. Cookies have many applications but are primarily used for storing information about the online behaviour of users, or to ensure the functioning of a page or solution. A cookie is a passive file, which cannot distribute computer viruses or other malware. Cookies help analyse how users use a website, so that the owner of the website can improve the user experience. In many cases, cookies may be required in order to deliver a certain service.

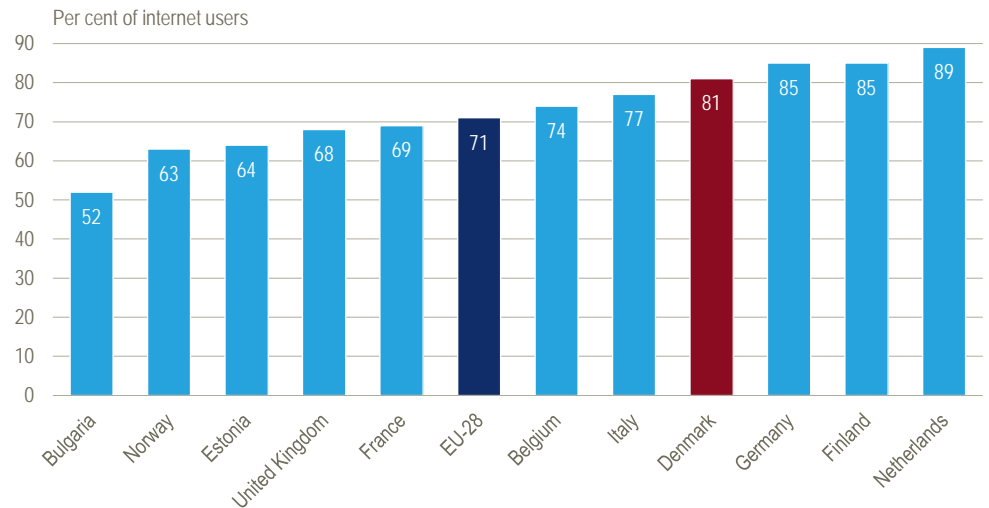
**Cookies can be limited**

Individual cookies or all cookies that the browser has saved can be deleted by changing the browser's internet settings. You can also add websites from which you want to block cookies.

**Knowledge about cookies**

The Dutch and the Finnish lead the list of countries with the highest share of internet users who know that cookies can be used to track how people navigate the internet. It has been estimated that 71 per cent of European internet users know what cookies are.

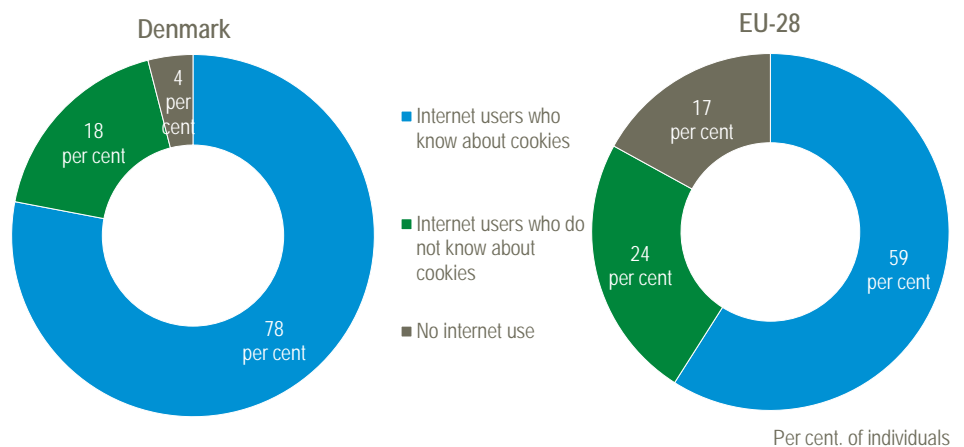
Figure 4.15 Know that cookies can be used to track how people navigate the internet. 2016



Three out of five EU citizens know what cookies are

It is interesting to look at how many people know about cookies out of the total population aged 16-74. A total of 59 per cent of Europeans internet users know that cookies can be used to track their online behaviour. For Denmark, the figure is 78 per cent.

Figure 4.16 Knowledge about cookies. 2016

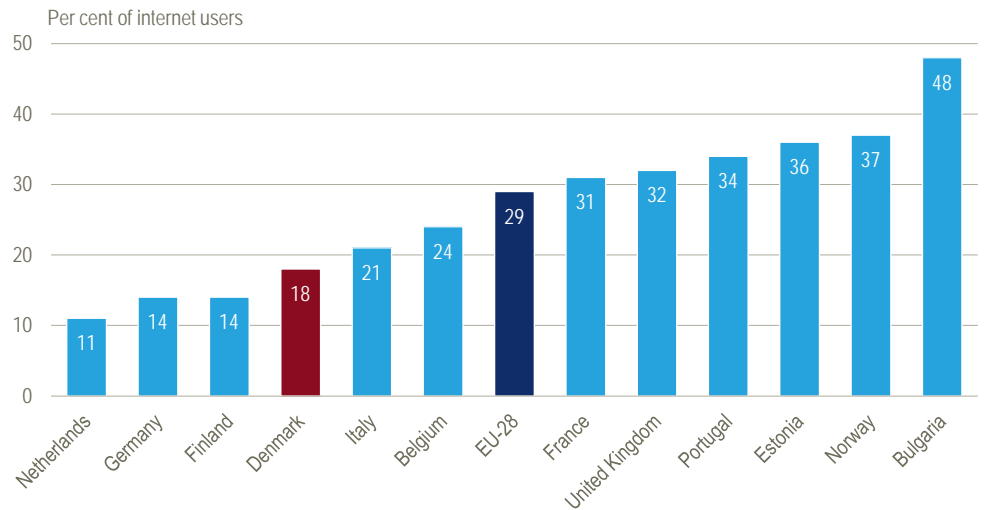


Lack of knowledge

The percentage of people who do not know that cookies can be used to track how people navigate the internet is lowest in the Netherlands and Germany. In Denmark, 18 per cent of internet users do not know that cookies save data on their online behaviour.



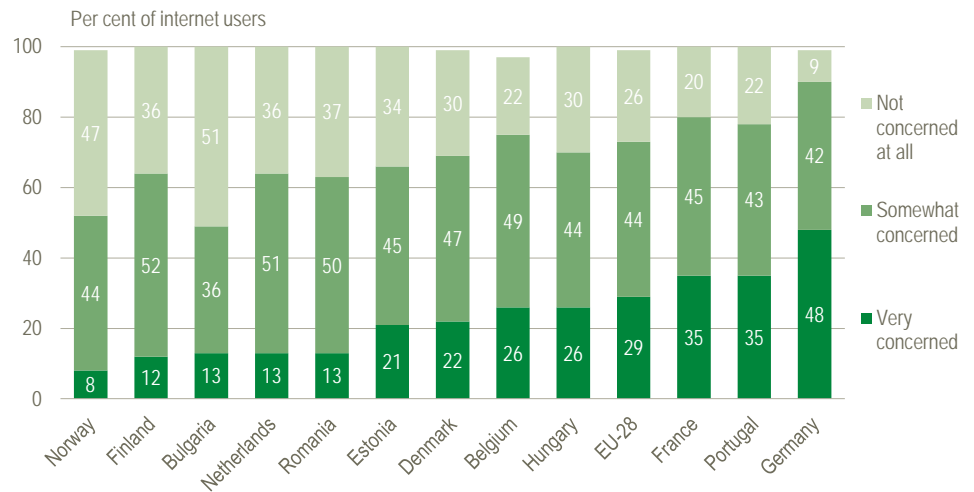
Figure 4.17 Do not know that cookies can be used to track how people navigate the internet. 2016



*Danes less concerned than other EU citizens*

Danes worried less about cookies than the rest of the EU. Looking at Danish internet users aged 16-74, one in three is not at all concerned about cookies. Looking at the average for the whole of the EU, a smaller share is not at all concerned. However, Danes have the greatest knowledge of cookies. As many as 81 per cent of Danish internet users know about cookies, whereas the figure is 71 per cent for all EU internet users.

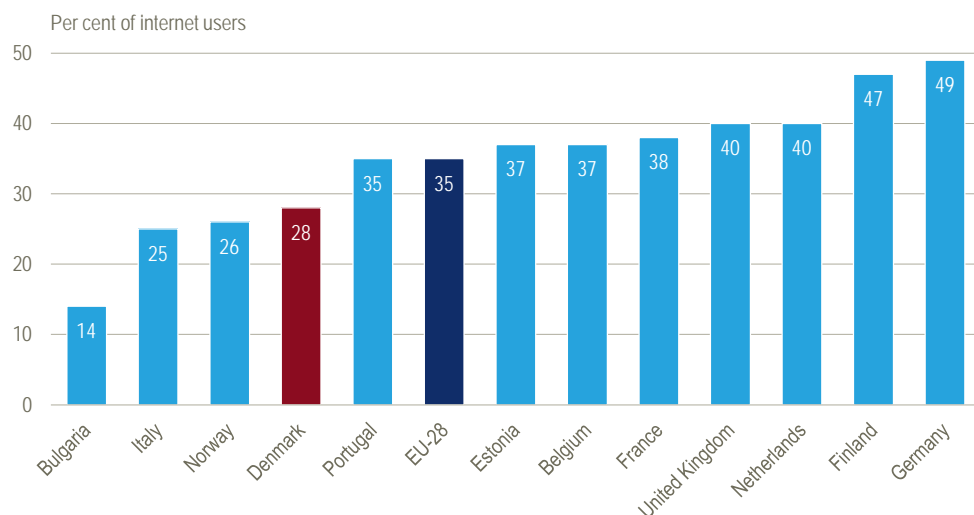
Figure 4.18 How concerned are you with your online activities being recorded to provide you with tailored advertising? 2016



*Changing internet settings*

Although most people are at least somewhat concerned that their online activities are recorded through cookies, only a small percentage change their settings to limit the effect of cookies. The share of internet users who limit cookies on their computer, etc. is only 28 per cent in Denmark and 35 per cent in the EU-28. However, the shares of those who are somewhat or very concerned about recording of their online activities are 69 per cent and 73 per cent in Denmark and in the EU-28, respectively.

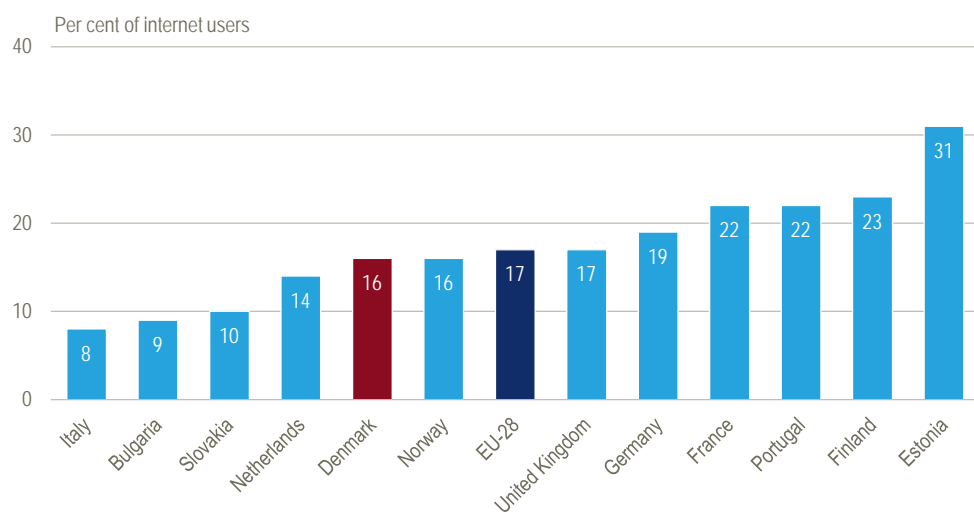
**Figure 4.19** Have you ever changed the settings in your internet browser to prevent or limit cookies on your computer? 2016



*Only few people use anti-tracking software*

A small share of internet users stated that they use anti-tracking software, i.e. software which limits the ability to track the user's activities on the internet. Here, the Danish percentage is just below the EU average of 17 per cent of internet users.

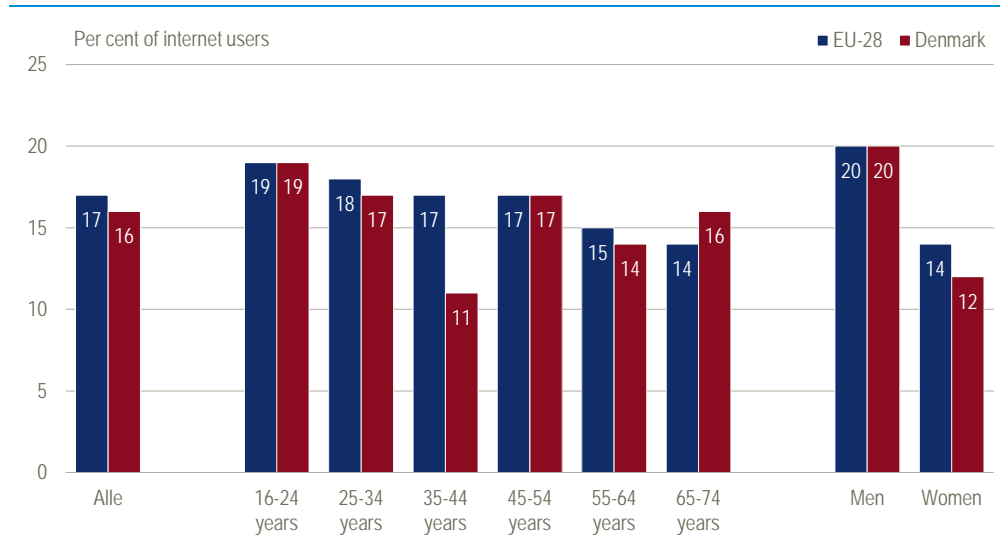
**Figure 4.20** Do you use anti-tracking software? 2016



*Gender and age make a difference*

The use of anti-tracking software drops slightly with age for European internet users. Furthermore, more men than women use anti-tracking software. This observation applies both inside and outside of Denmark.

Figure 4.21 Use of anti-tracking software broken down by age and gender. 2016



## 5 Facts about the survey

### 5.1 Sources and methodology

*Read more in the Documentation of statistics* At [www.dst.dk/en/Statistik/dokumentation/documentationofstatistics](http://www.dst.dk/en/Statistik/dokumentation/documentationofstatistics) you will find a more comprehensive description of sources and methodology.

*Data basis* The results are based on around 5,922 responses from telephone interviews or web forms in the period March to May 2016 among a representative sample of the Danish population aged 15-89. A total of 4,271 interviews were completed among 16-74-year-old respondents.

*Population* The population surveyed is people in Denmark aged 15-89 (excluding Greenland and the Faeroe Islands), as recorded in the Central Office of Civil Registration. People without an address registered in the Central Office of Civil Registration have not been included in the survey. The figures in the publication, which include international comparisons, focus on the subset of the population aged 16-74. The results for other EU Member States are only available for people aged 16-74.

*Comparability over time* In order to reflect the rapid development of the internet and ICT usage, each year, the questionnaire includes a number of questions that were not included in previous versions of the statistics. Furthermore, when comparing with previous versions, account must be taken of differences e.g. in the method of grossing up and in the reference period.

*Grossing up* The results of the survey were *grossed up* to ensure representativeness. After data collection, the sample was grouped according to a number of variables, including gender and age. Each response was added a weight to adjust for any non-response distortion relative to the sample. Calculation was performed as a regression estimate.

### 5.2 More information

*Special runs available* You can buy more detailed information from the *ICT usage in households and by individuals* survey.

*More information* See previous publications on ICT usage in households and by individuals at [www.dst.dk/en/Statistik/emner/uddannelse-og-viden/informationssamfundet](http://www.dst.dk/en/Statistik/emner/uddannelse-og-viden/informationssamfundet) Selected tables are also available in the StatBank.

International results can be downloaded from Eurostat's *Digital Economy and Society* thematic [website](#).

Guidelines on Eurostat's data bank and use of the Eurostat website are available here:

[ec.europa.eu/eurostat/web/digital-economy-and-society/data/comprehensive-database](http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/comprehensive-database)

*Most recent publication* The book entitled *It-anvendelse i befolkningen 2016* (ICT usage in households and by individuals) was published in November 2016. The book is available (in Danish) at [www.dst.dk/da/Statistik/Publikationer](http://www.dst.dk/da/Statistik/Publikationer).

The first results from the 2016 survey were published as brief articles (in Danish) in the Statistics Denmark news articles series *Nyt fra Danmarks Statistik*:

- [Kvindes internetkøb haler ind på mænds](#)
- [Især kvinder tjekker sundhed digitalt](#)
- [Brug af adskillige sociale medier hitter blandt unge](#)

Furthermore, the results of the survey have been mentioned in the following editions of the *Bag Tallene* (behind the figures) web magazine:

- [Vores tro digitale følgesvend fylder 20 år](#)
- [Hver anden ung bekymrer sig ikke om, at deres onlineaktiviteter registreres](#)
- [De fleste er tilfredse med det offentlige digitale selvbetjening](#)
- [Flere databedragerier stiller krav til brugernes it-sikkerhed](#)

This publication is available for download at [www.dst.dk/en/Statistik/emner/uddannelse-og-viden](http://www.dst.dk/en/Statistik/emner/uddannelse-og-viden).

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