Telecommunications Markets in the Nordic and Baltic Countries 2022

15 September 2023

TRAFICOM
Finnish Transport and Communications Agency

Norwegian Communications Authority

PUBLIC UTILITIES COMMISSION

ECOI
Electronic Communications Office of Iceland

Agency for Data Supply and Infrastructure

PTS

Republic of Estonia
Consumer Protection and Technical Regulatory Authority

RRT

About the database

- The database was established in 2007 by the Nordic countries. The Baltic States are included since the spring of 2013.
- Consists of selected variables that are comparable between the countries.
- A dynamic database that will change as the telecom markets develop.
- The figures are collected and validated by the Nordic-Baltic working group on statistics and definitions.
- Unless otherwise stated, the sources for all figures are the national regulatory agencies and/or the national statistical agencies of each country.
- Graphs included in this publication cover the years 2017–2022. Previous years are available in the database only. The variables are stated as of the end of the year. Time series for each country are displayed from the year where data are available. Due to this, the length of time series may vary.
- Graphs include both private and business customers unless otherwise stated.
- The graphs are usually expressed as per capita or per household, which means the amount of each variable (both private and business) divided by the relevant country's population or number of households.
- For more information, see the PTS statistics portal: http://statistik.pts.se/nordic-baltic-telecom-market/

Population

Population (in thousands) as of year end in the Nordic and Baltic countries. As most of the graphs in this presentation are scaled based on the population in each country, it should be noticed that the population is growing in some countries while decreasing in others. In this publication only the population figures from 2017 to 2022 are shown.

Population	2017	2018	2019	2020	2021	2022	Change 2017 - 2022
Denmark	5 781	5 806	5 823	5 840	5 850	5 933	3%
Estonia	1 316	1 325	1 329	1 330	1 332	1 366	4%
Finland	5 510	5 518	5 525	5 534	5 548	5 566	1%
Iceland	348	357	364	369	376	388	11%
Latvia	1 934	1 920	1 908	1 893	1 876	1 883	-3%
Lithuania	2 809	2 794	2 794	2 796	2 806	2 860	2%
Norway	5 296	5 328	5 368	5 391	5 425	5 445	3%
Sweden	10 120	10 230	10 328	10 379	10 452	10 522	4%

1. Mobile services

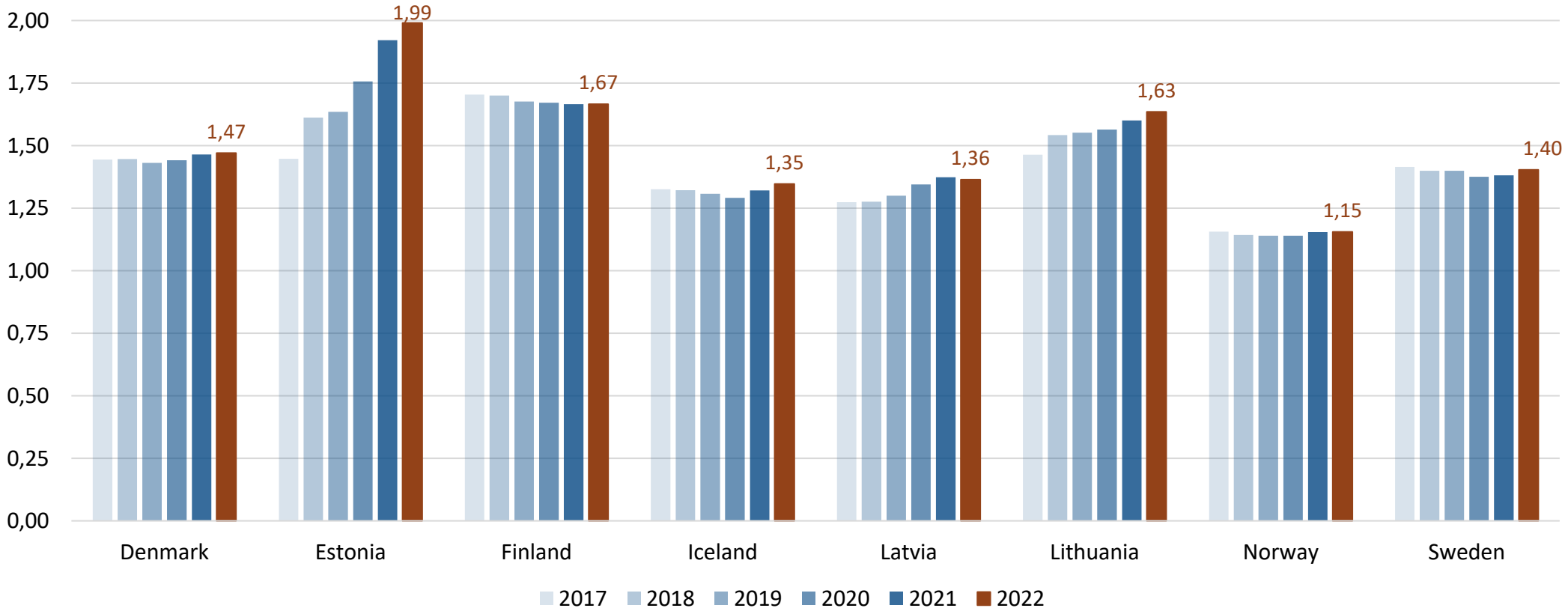
Mobile services

- The largest number of mobile SIM cards per capita was in Estonia - 1.99. Notably, this indicator increased significantly only in Estonia and Lithuania during the analyzed period. In other countries, it remained relatively constant.
- The countries' mobile voice and data subscriptions per capita increase yearly. The values of this indicator do not differ significantly between countries.
- The number of mobile call minutes grew significantly in all countries in 2020–2021 but decreased in 2022. This criterion highly reflected the effect of covid19 on the electronic communications sector and the way back to "normal life".
- Finland had by far the largest mobile data volumes, 63,3 Gbyte per capita a month. The popularity of subscriptions without data caps and the use of mobile subscriptions as household broadband are essential factors behind this development in Finland. Mobile data traffic grew fast in all countries, especially Latvia and Estonia.
- The number of machine-to-machine (M2M) SIM cards was growing in all the countries. M2M SIM cards per capita are highest in Norway, followed by Sweden. Most M2M SIM cards with Swedish and Icelandic numbers are used outside the country.

1.1 Mobile subscriptions per capita

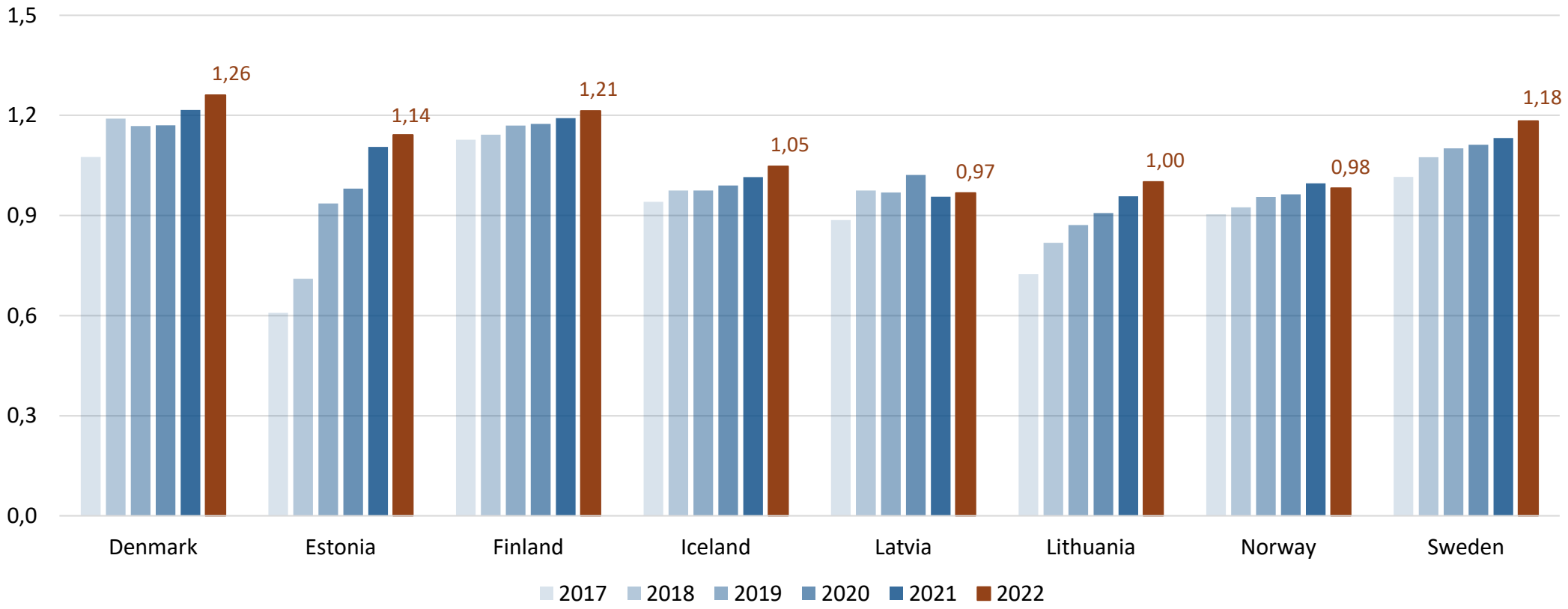
Number of mobile subscriptions (GSM/UMTS/LTE/5G) for voice and data divided by population.

Pre-paid subscriptions are included and must have been active within the last 3 months of the period. M2M subscriptions are not included.



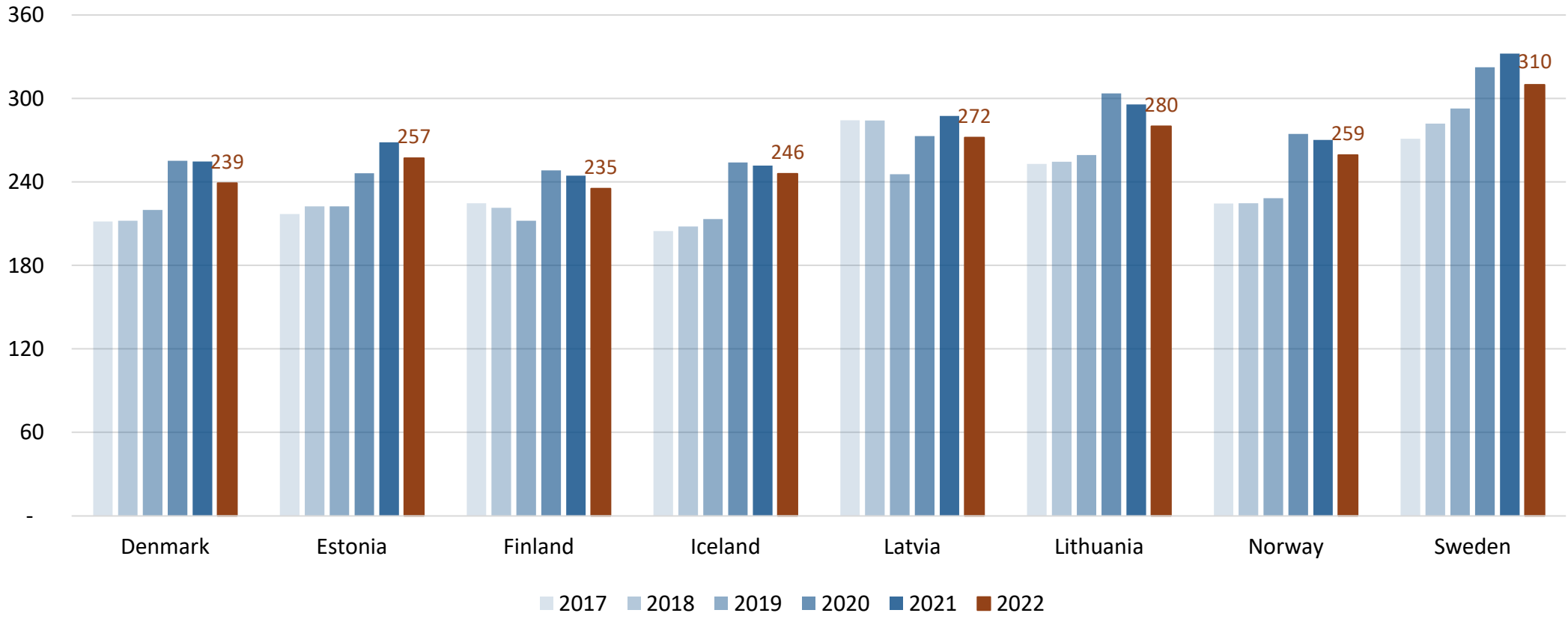
1.2 Number of mobile voice and data subscriptions per capita

Subscriptions where both mobile data and voice are included. Excludes data add-on subscriptions and dedicated mobile data subscriptions.



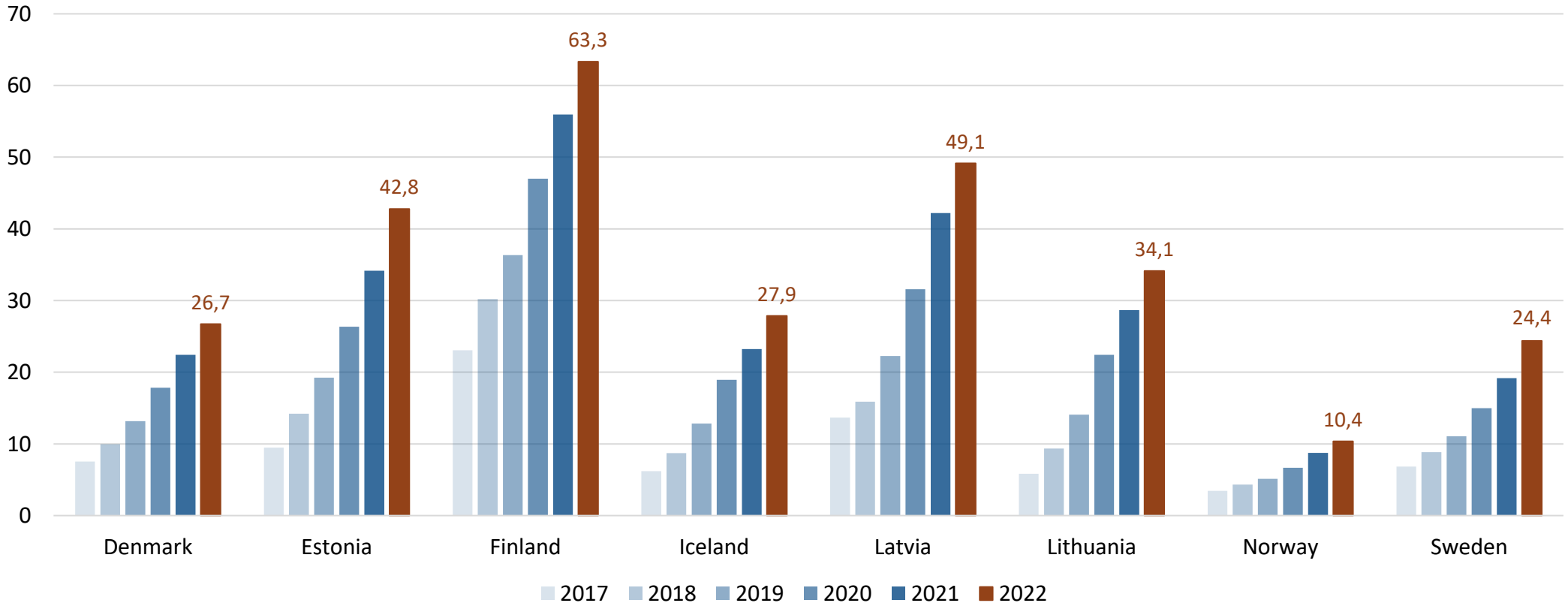
1.3 Mobile call minutes per capita in a month

Most of the mobile subscriptions today include unlimited minutes or at least a very large number of minutes. The figures exclude international roaming.



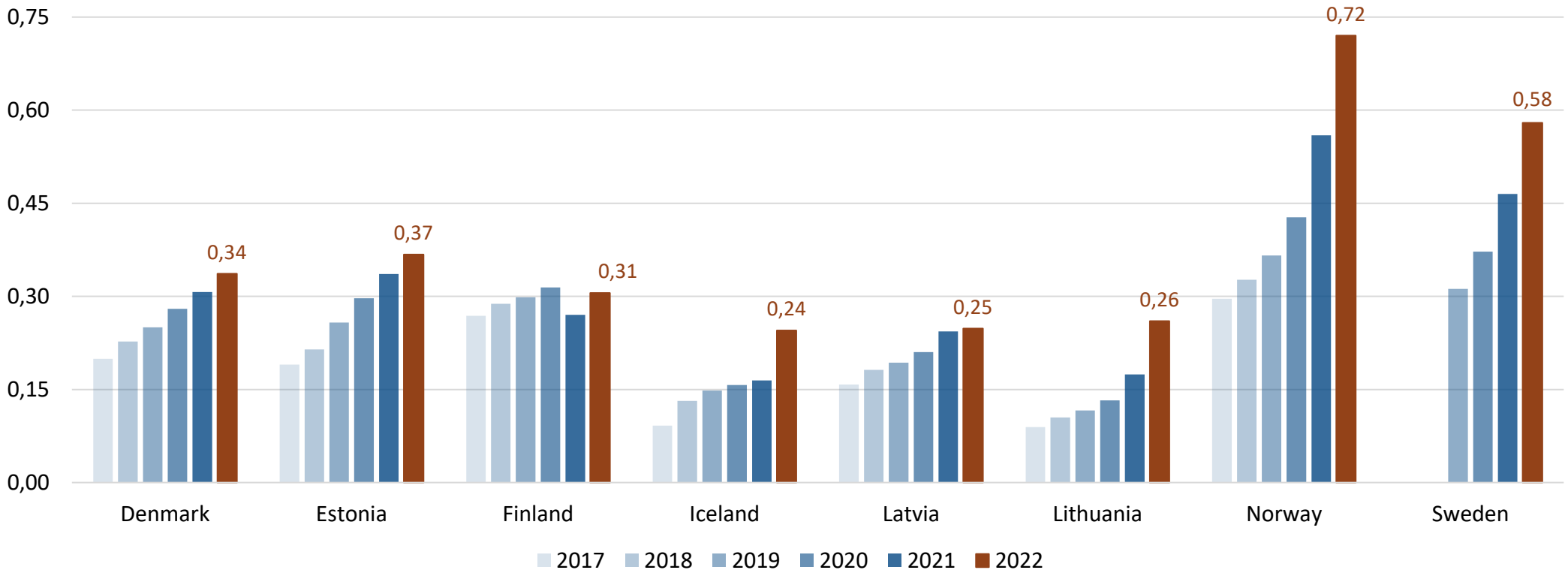
1.4 Data transferred over mobile networks per capita in a month (Gbytes)

Includes both uploaded and downloaded traffic. Data roaming is not included. Calculated by the binary system (1 GB = 1024^3 B).



1.5 Machine-to-machine (M2M) SIM cards per capita

Includes SIM cards sold specifically to be used with or between machines in, for example, energy consumption meters, cars and surveillance cameras. The 2019-2022 figure for Sweden and 2021-2022 for Iceland is based on the estimated number of M2M SIM cards used within the country.



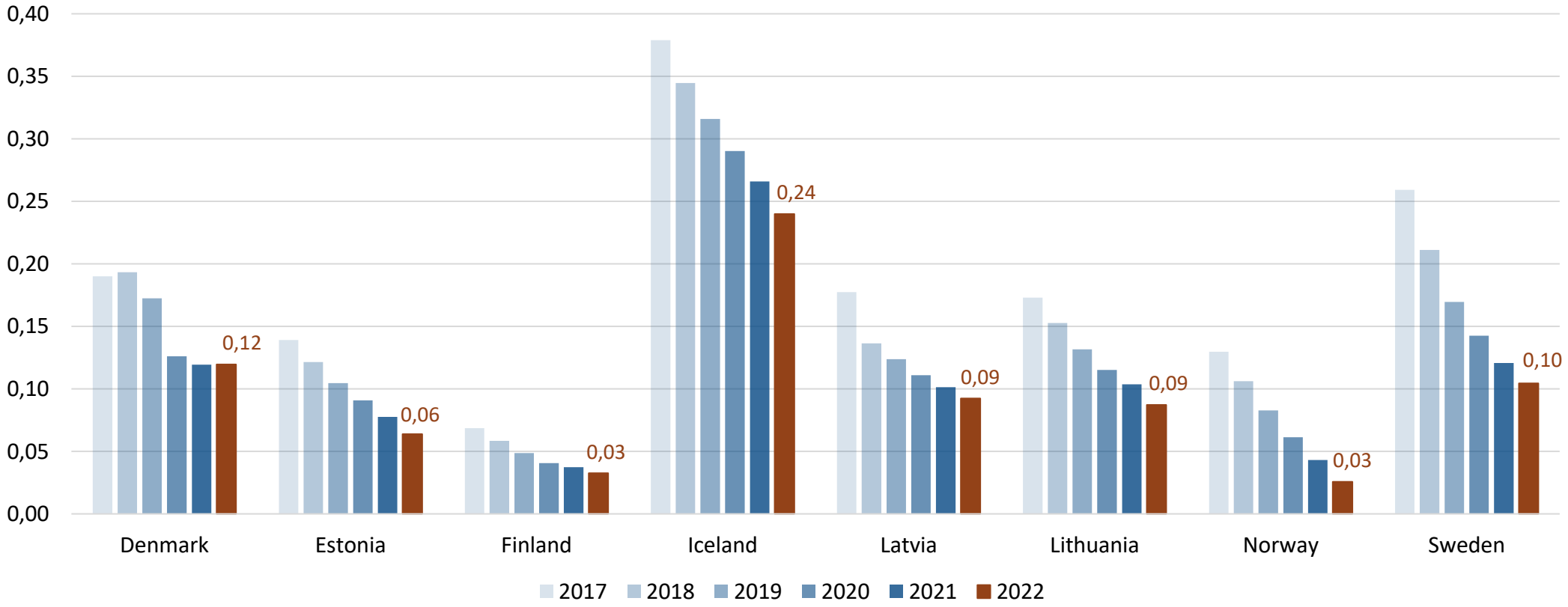
2. Fixed call services

Development of fixed call services

- Fixed telephony subscription per capita decreases every year in all of the countries. Even Covid19 did not have a significant effect on this trend.
- Covid19 slowed the decrease of the number of fixed call minutes in all countries. The value of this indicator even increased a little bit in Denmark and Lithuania in 2020 but continue decreasing in 2021 and 2022.
- The Latvian and Icelandic incumbents plan to gradually switch their entire fixed networks over to IP technology and eventually shut down the PSTN networks. IP telephony is often bundled with other services such as fixed broadband and TV. In those cases, the IP telephony part of the bundle may be inactive.

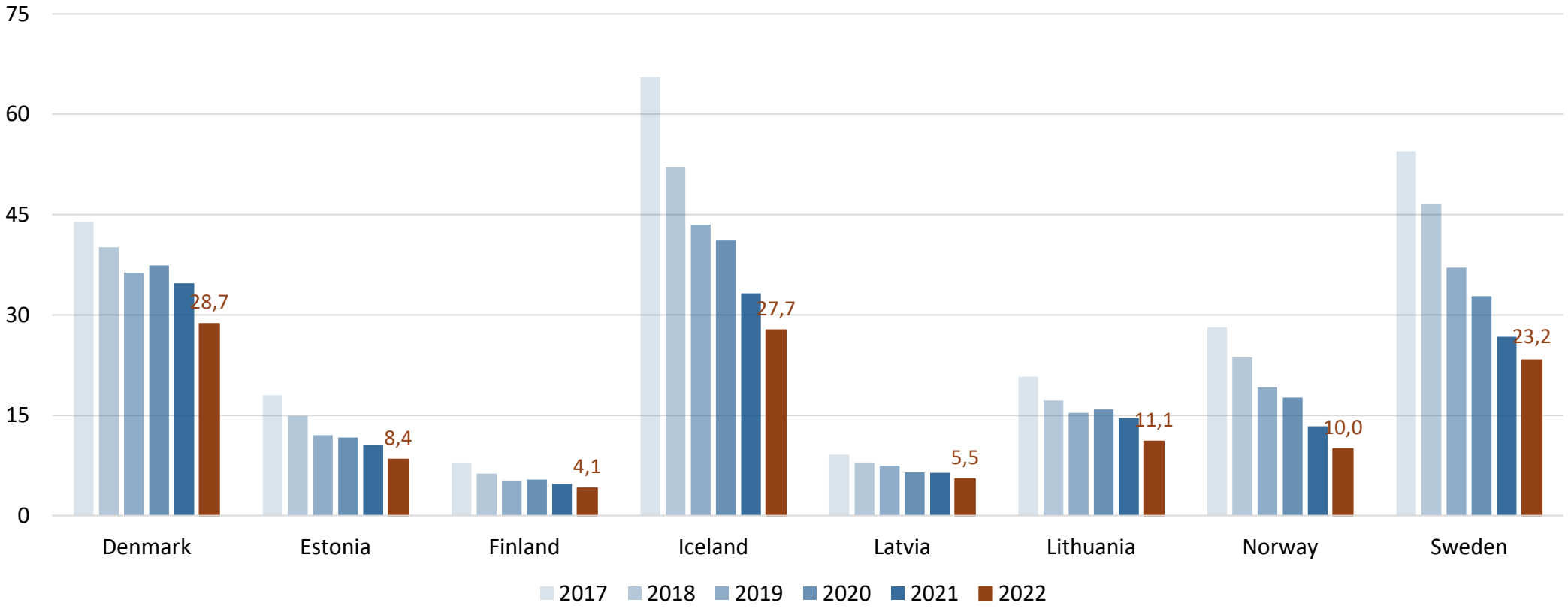
2.1 Fixed telephony subscriptions per capita

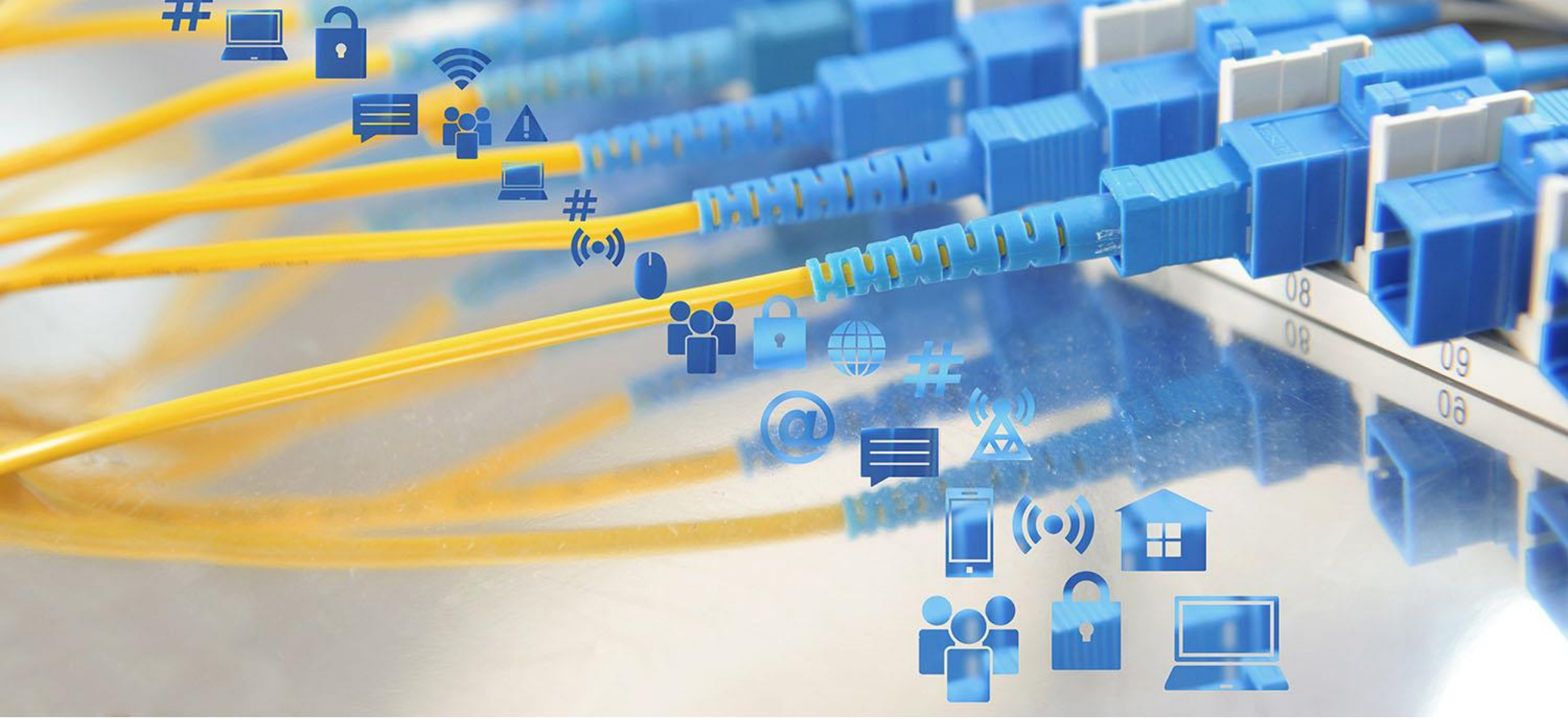
Includes PSTN, ISDN and IP telephony. The figures include both business and private subscriptions, which may differ significantly in terms of traffic generated, since a business customer may have many users of the same fixed telephony connection (e.g., ISDN).



2.2 Fixed call minutes per capita in a month

The Danish incumbent, TDC, had a change of definition from 2017 to 2018.





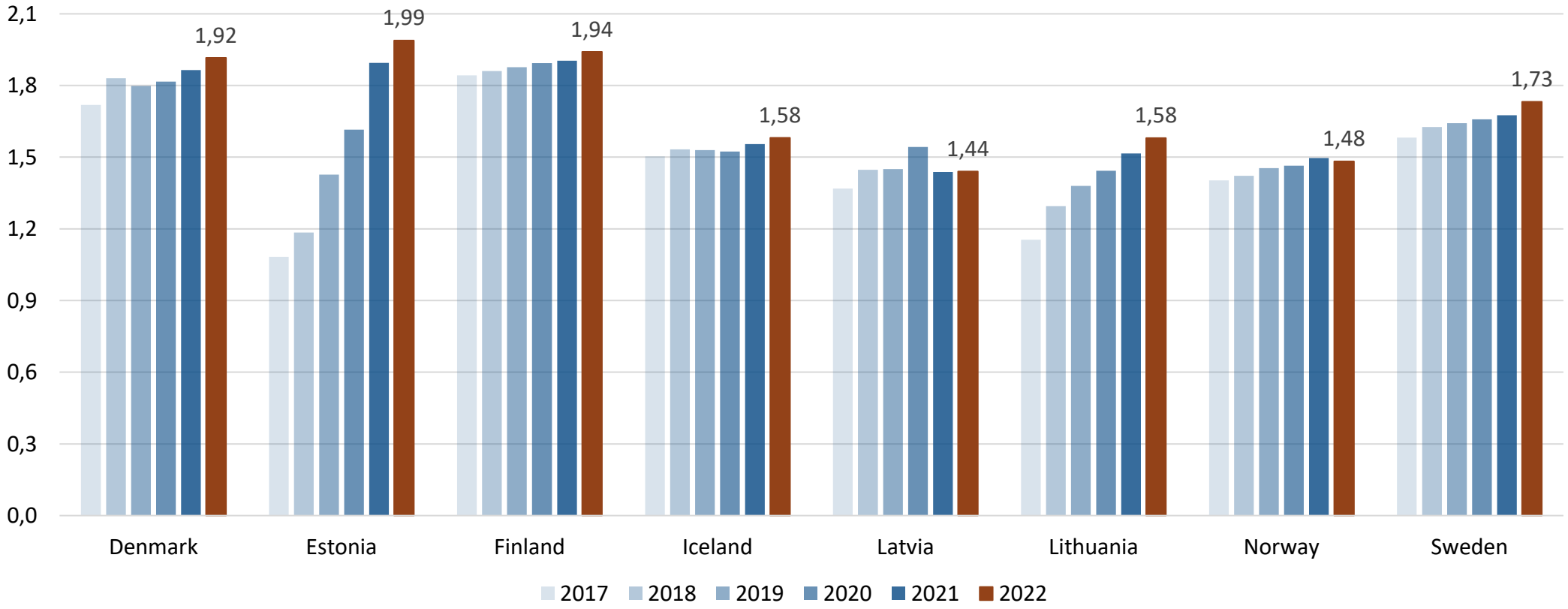
3. Broadband services

Development of broadband services

- Estonia, Finland, and Denmark had the highest numbers of total broadband subscriptions recalculated per capita in 2022. This indicator includes subscriptions of all kinds of fixed and mobile (e.g., mobile broadband in smartphones, dedicated data) broadband except M2M connection.
- Finland and Denmark showed the best results by subscriptions of broadband usually used at fixed locations – fixed broadband and mobile dedicated data broadband in 2022. The value of this indicator exceeded 0,7 subscriptions per capita in these countries.
- Norway gained a leading position talking about fixed broadband subscriptions per household in 2022, but Iceland remained a leading country by indicators of broadband subscriptions with data download speeds of 30, 100 Mbps, and 1 Gbps per household.
- The share of fiber subscriptions of all fixed broadband subscriptions was highest in Iceland and Sweden, exceeding 80 percent in 2022.
- When combining fiber and cable subscriptions per capita, Norway, Sweden, and Denmark had the highest penetration rate with relatively 0,41; 0,39, and 0,37. The combined penetration rate for cable and fiber was increasing in all countries, mostly due to growth in fiber subscriptions.

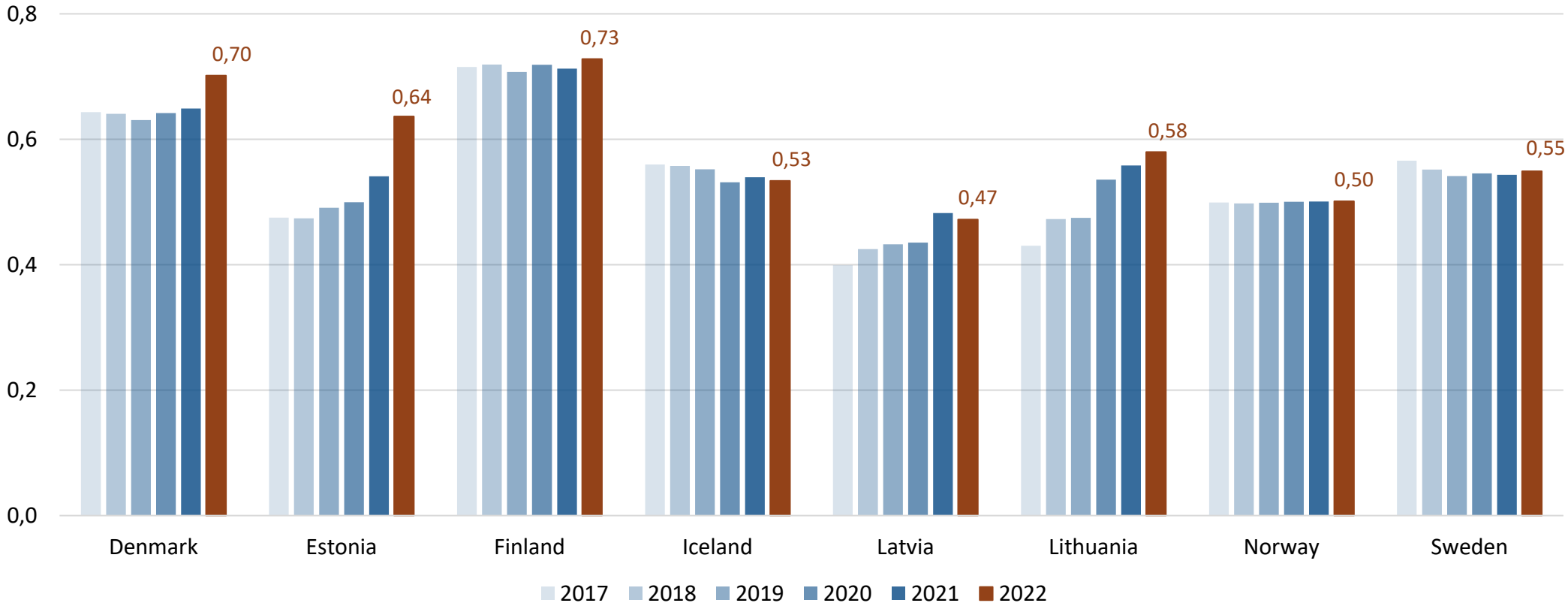
3.1 Number of total broadband subscription per capita

Includes mobile and fixed broadband subscription. M2M subscription is not included.



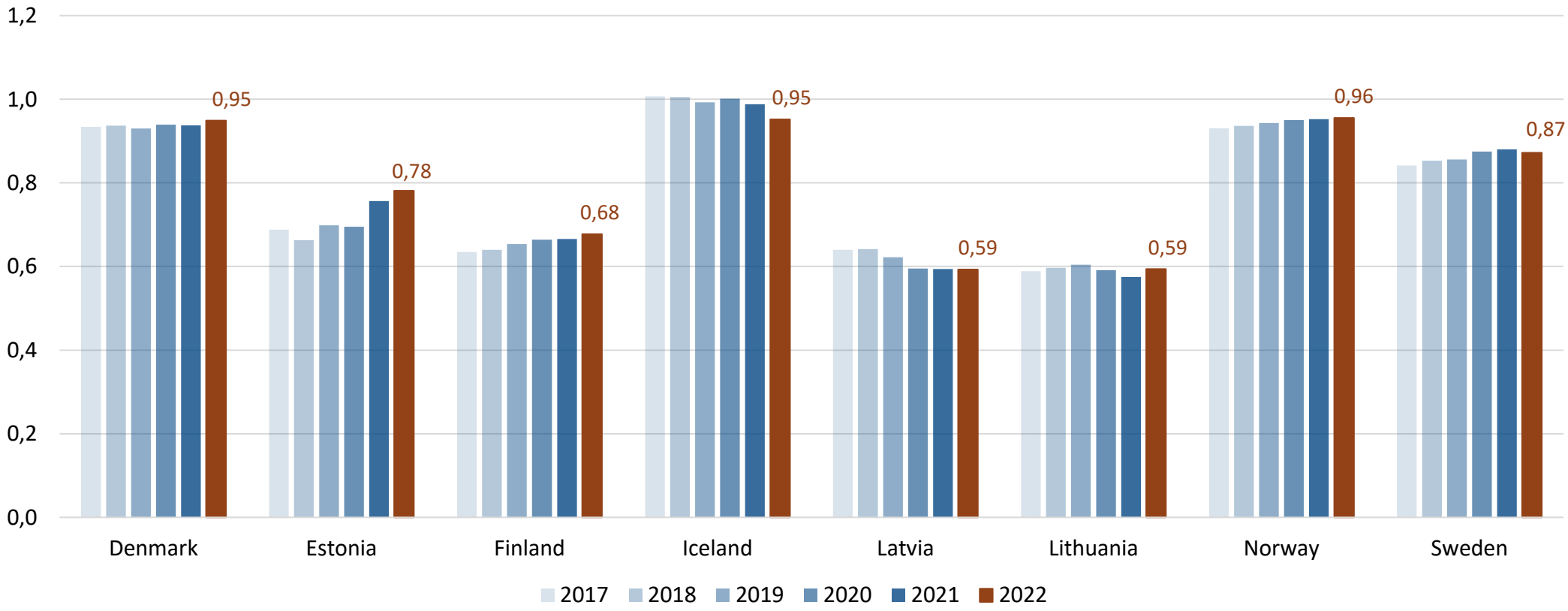
3.2 Number of fixed and mobile dedicated data broadband subscriptions per capita

The mobile dedicated data broadband services are typically used via a dongle, tablet or mobile router.



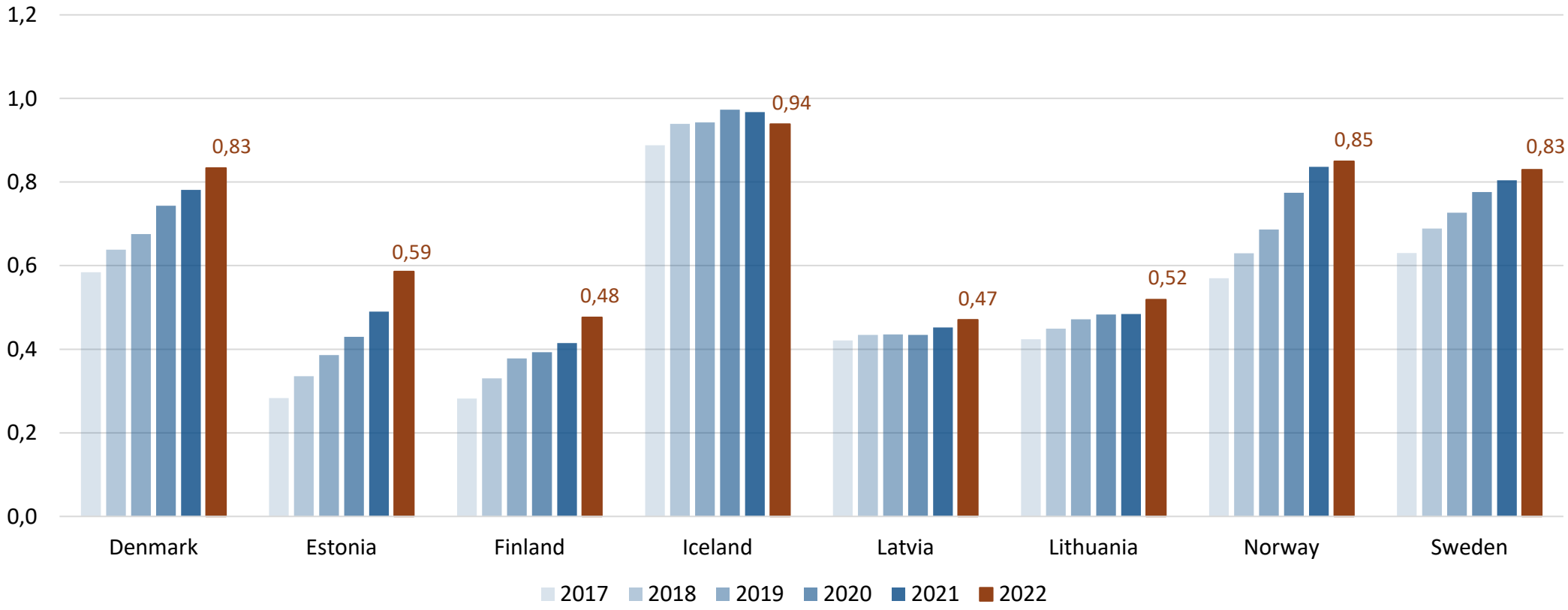
3.3 Fixed broadband subscriptions per household

Values of indicator went down in Iceland and Sweden because the population and number of households grew faster than fixed broadband subscriptions in these countries.

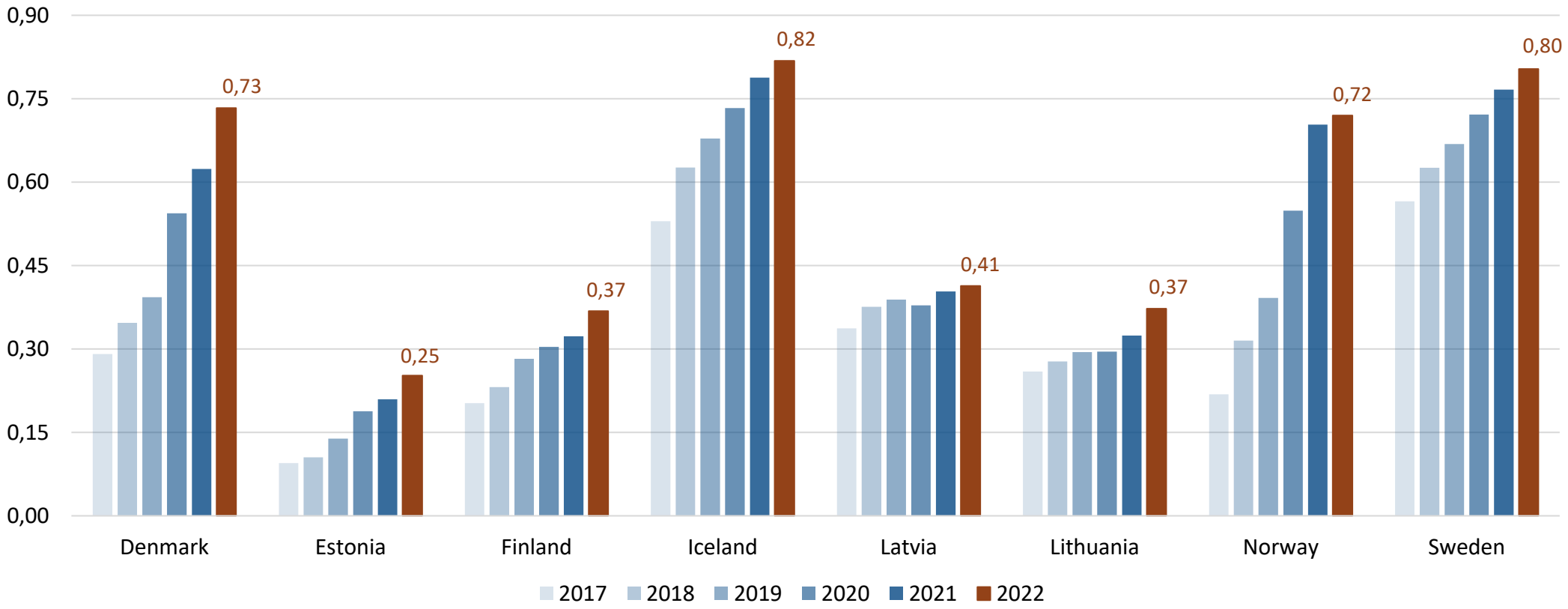


3.4 Fixed broadband subscriptions with a marketed downstream capacity of 30 Mbps or more, per household

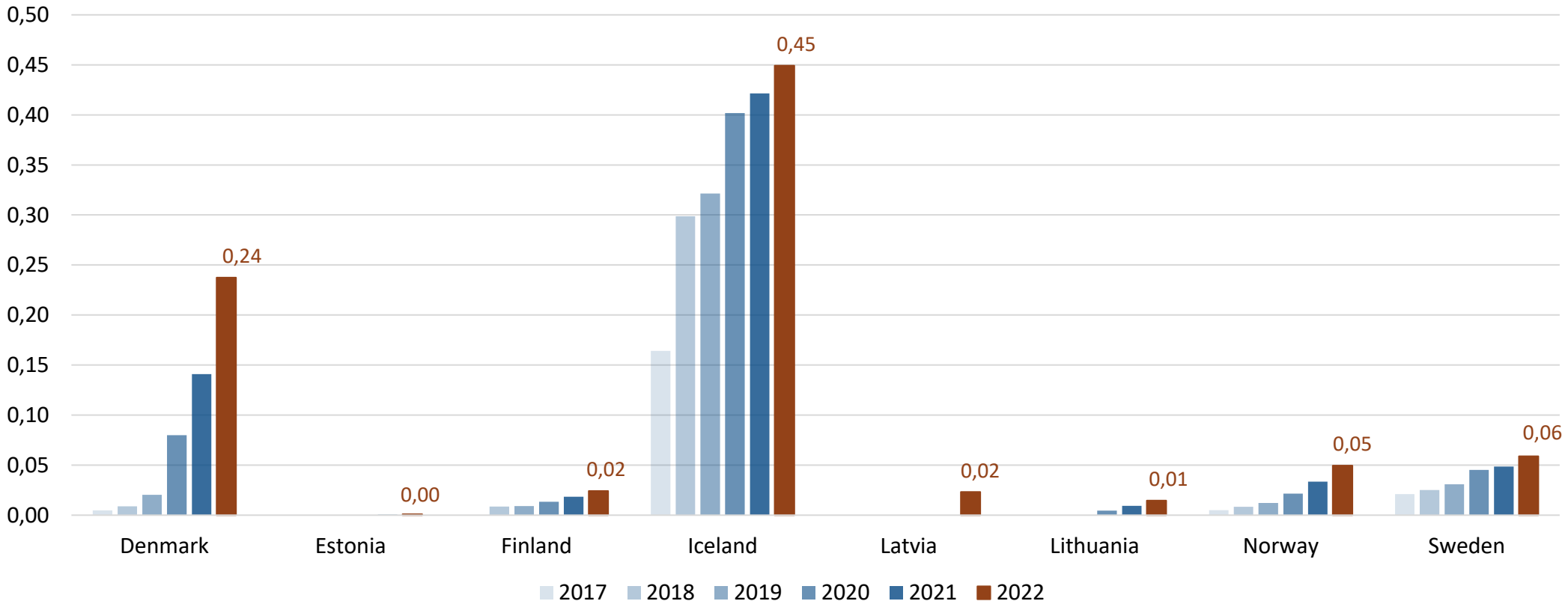
The value of indicator went down in Iceland because the population and number of households grew faster than fixed broadband subscriptions in this country.



3.5 Fixed broadband subscriptions with a marketed downstream capacity of 100 Mbps or more, per household

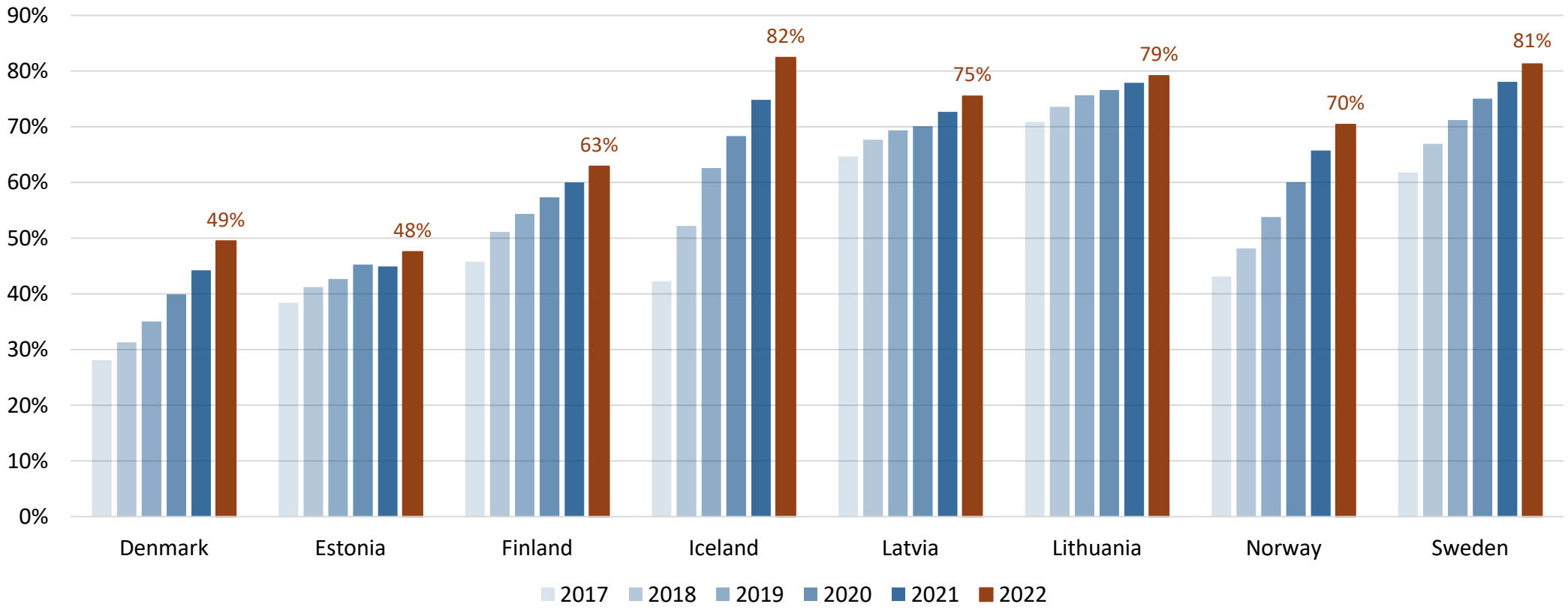


3.6 Fixed broadband subscriptions with a marketed downstream capacity of 1 Gbps or more, per household



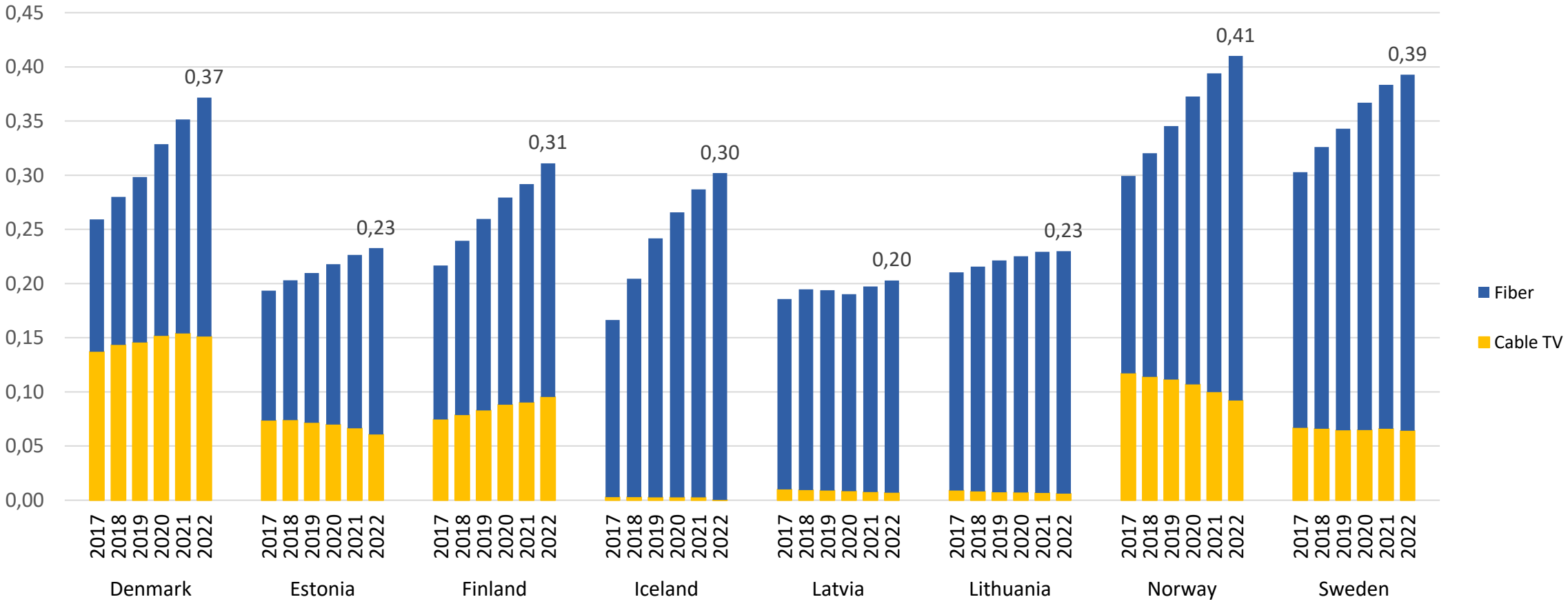
3.7 Share of fiber subscriptions of total fixed broadband subscriptions

Fiber includes both FTTH and FTTB. There was a change of definitions in Finland in 2017.

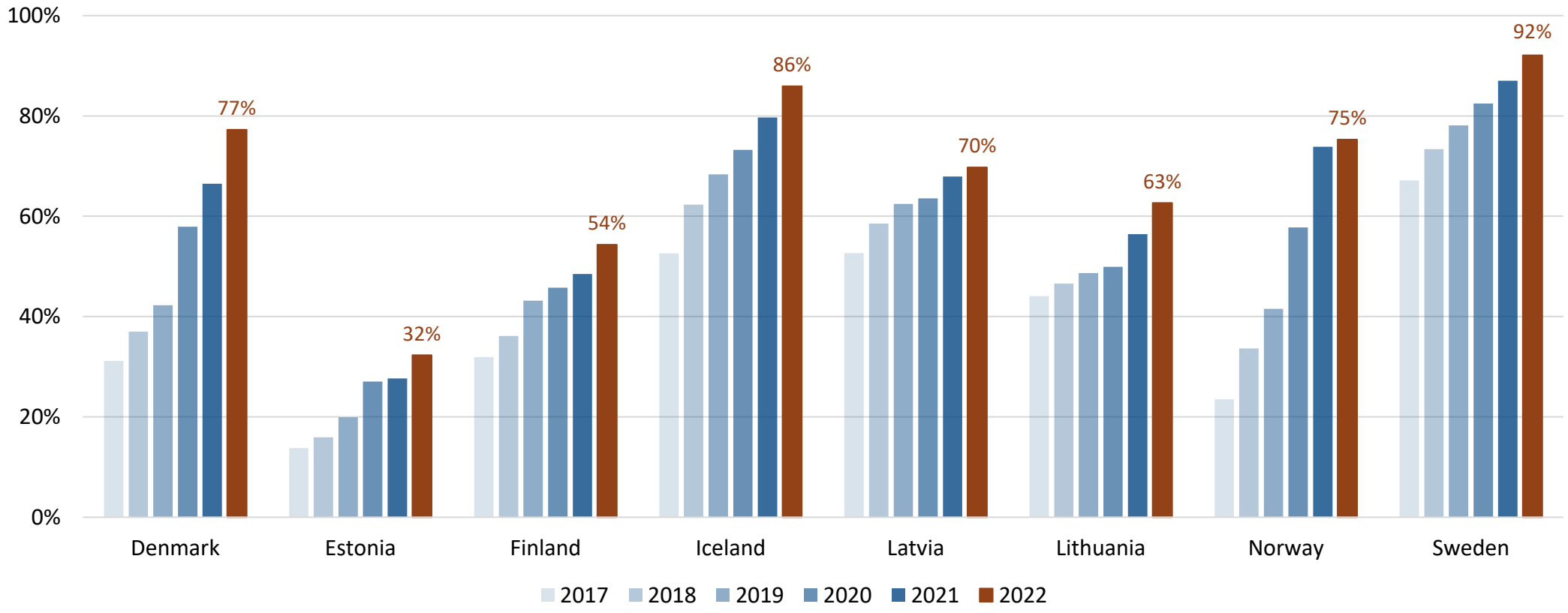


3.8 Fixed broadband subscriptions via fiber and cable networks per capita

Fiber and cable will be key to meeting the EU's broadband target that all households should have access to networks offering a download speed of at least 100 Mbps, which can be upgraded to 1 Gbps, in 2025.



3.9 Share of fixed broadband subscriptions with a marketed downstream capacity of 100 Mbps or more of total fixed broadband subscriptions



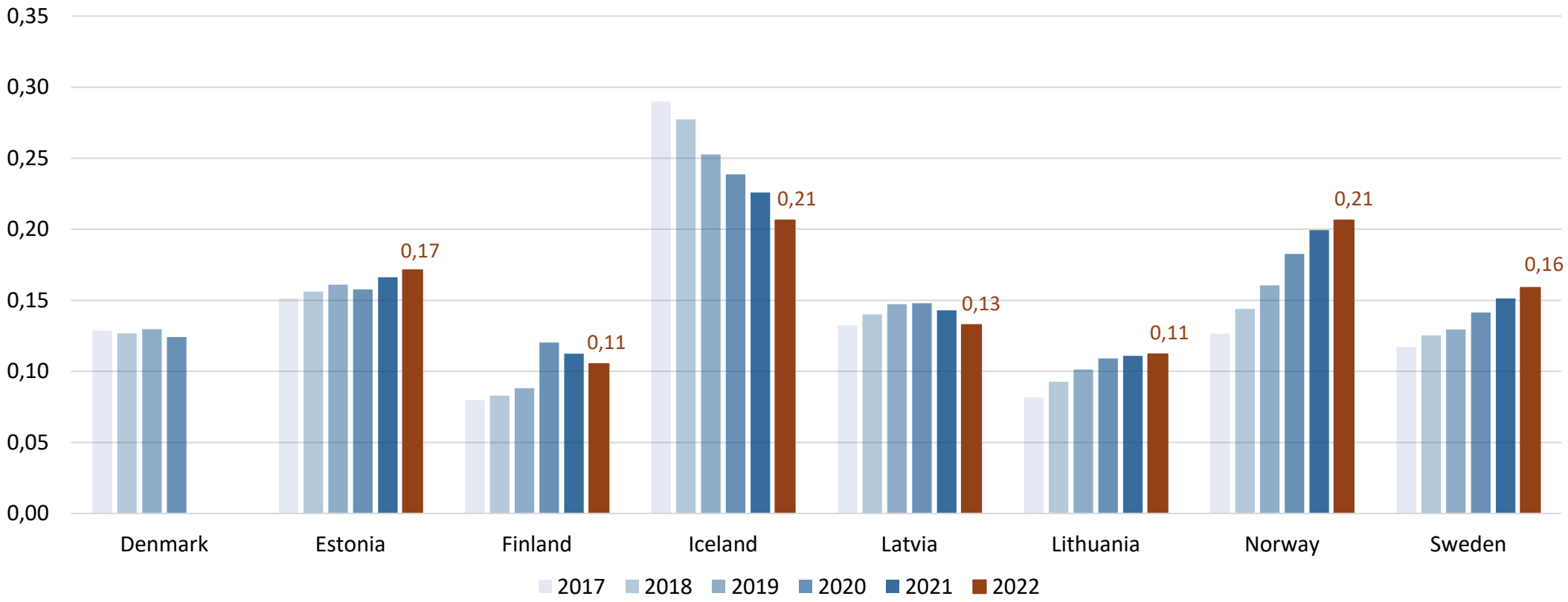
4. TV services

Development of traditional pay-TV services

- IPTV was the most popular pay-tv technology in all countries except Sweden and Denmark.
- IPTV penetration was highest in Iceland, where there is no satellite TV, and in Norway. In 2022, there were 0,23 IPTV subscriptions per capita in these countries.
- IPTV includes both DSL and fiber platforms.

4.1 Number of IPTV subscriptions per capita

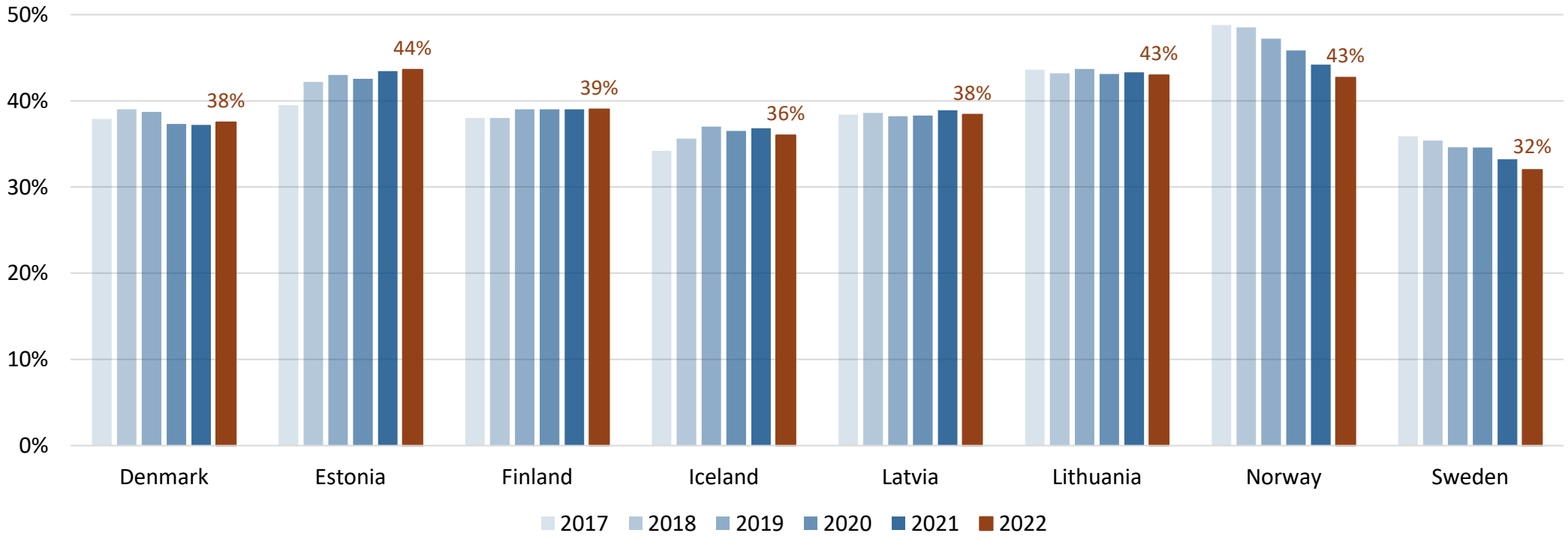
Denmark did not provide data of 2021-2022.



5. Market shares

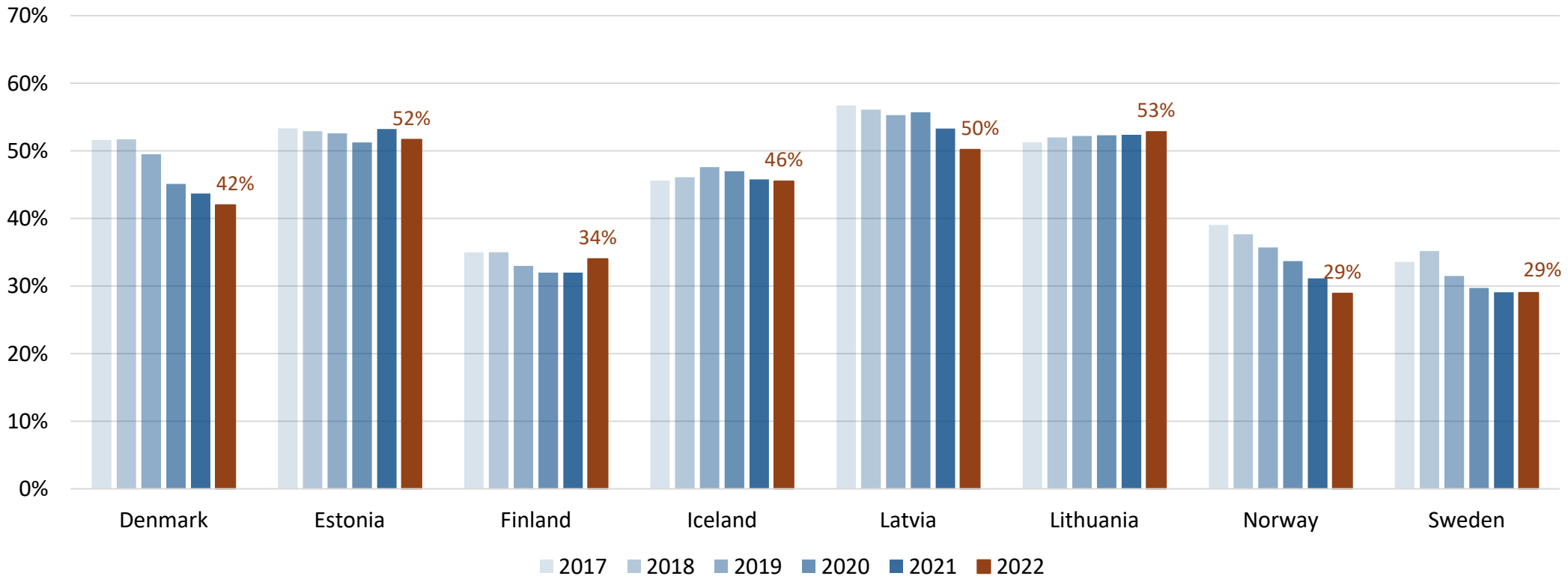
5.1 Market share of leading mobile operator

Operator with the largest market share, based on subscriptions (M2M are not included). Market shares include subsidiaries. Mobile subscriptions includes all mobile voice and data subscriptions, including dedicated mobile data subscriptions.



5.2 Market share of leading operator in fixed broadband services

Operator with the largest market share, based on subscriptions.



6. Investments and revenues

Exchange rates

Revenues are given in Euros adjusted for purchasing power (EUR/PPP) to account for differences in price levels across the countries.

Nominal exchange rates:

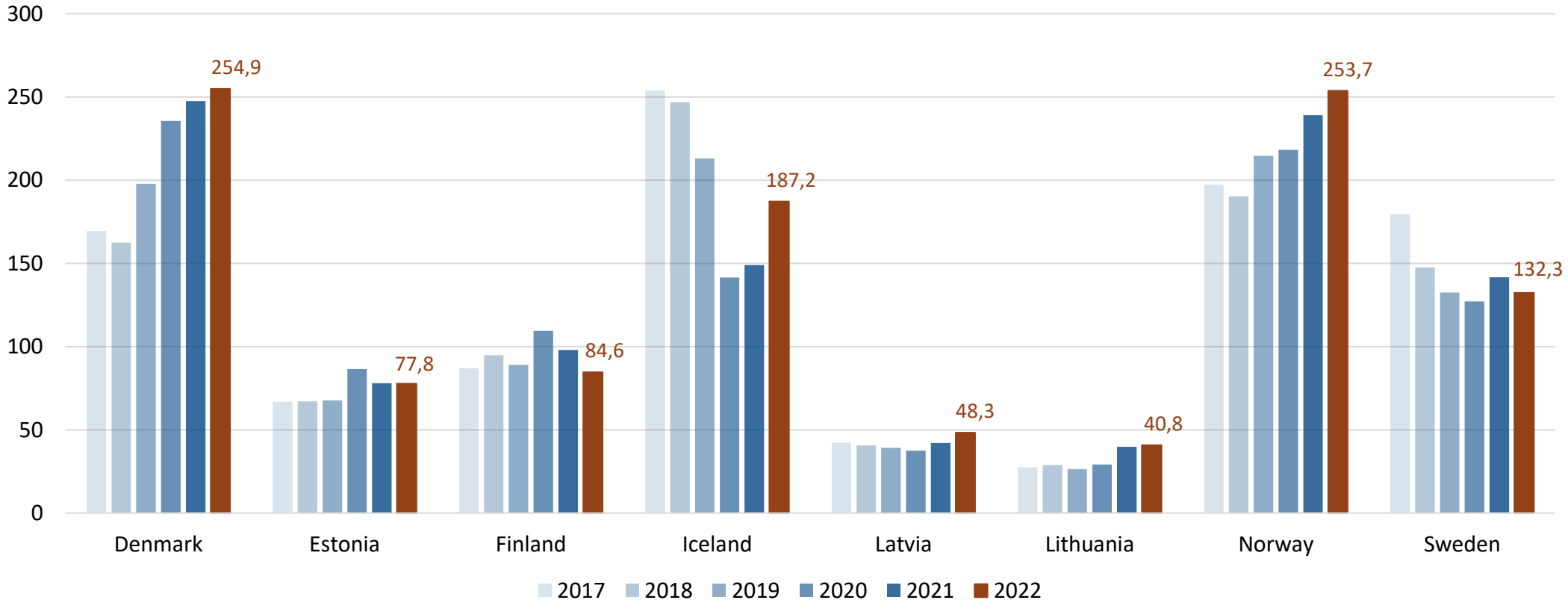
- Source: European Central Bank
- Average exchange rate: 1 January - 31 December of each year

Purchasing power parity (PPP):

- Source: Eurostat, Purchasing power parities, price level indices and real expenditures for ESA 2010 aggregates
- EUR/PPP rates for each country are calculated based on price levels relative to EU27_2020=1

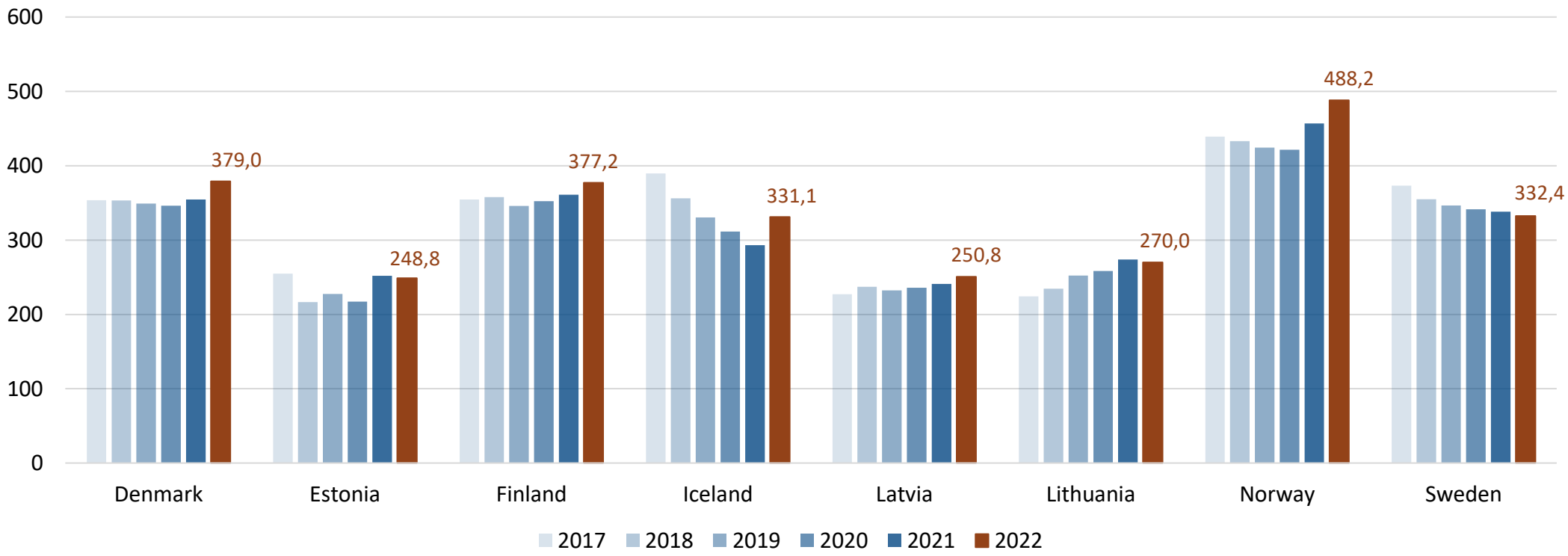
6.1 Investments per capita (EUR)

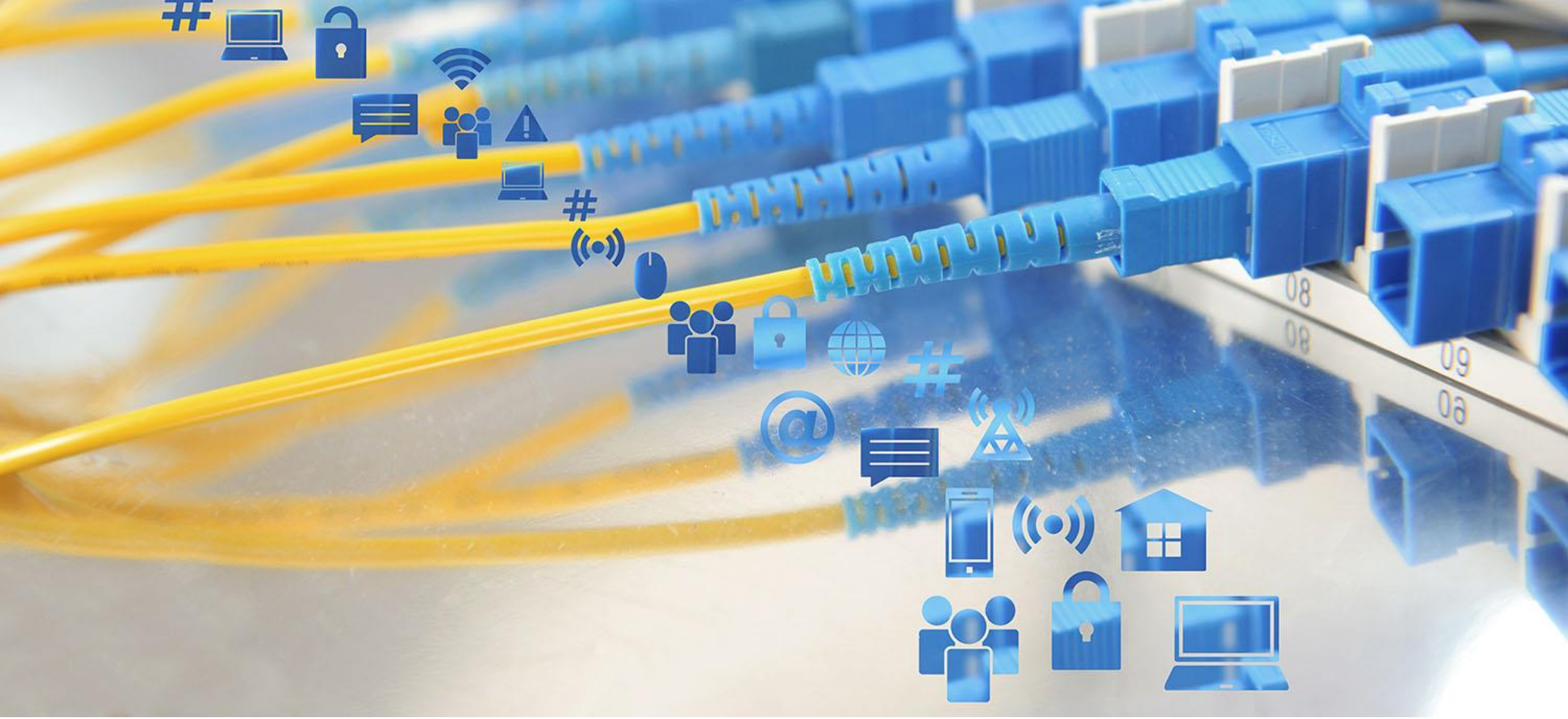
Investments in tangible fixed assets.



6.2 Revenues per capita (EUR/PPP)

Retail revenues from mobile call services, fixed call services, and broadband services. Revenues from TV and international roaming are not included. Revenues exclude VAT.





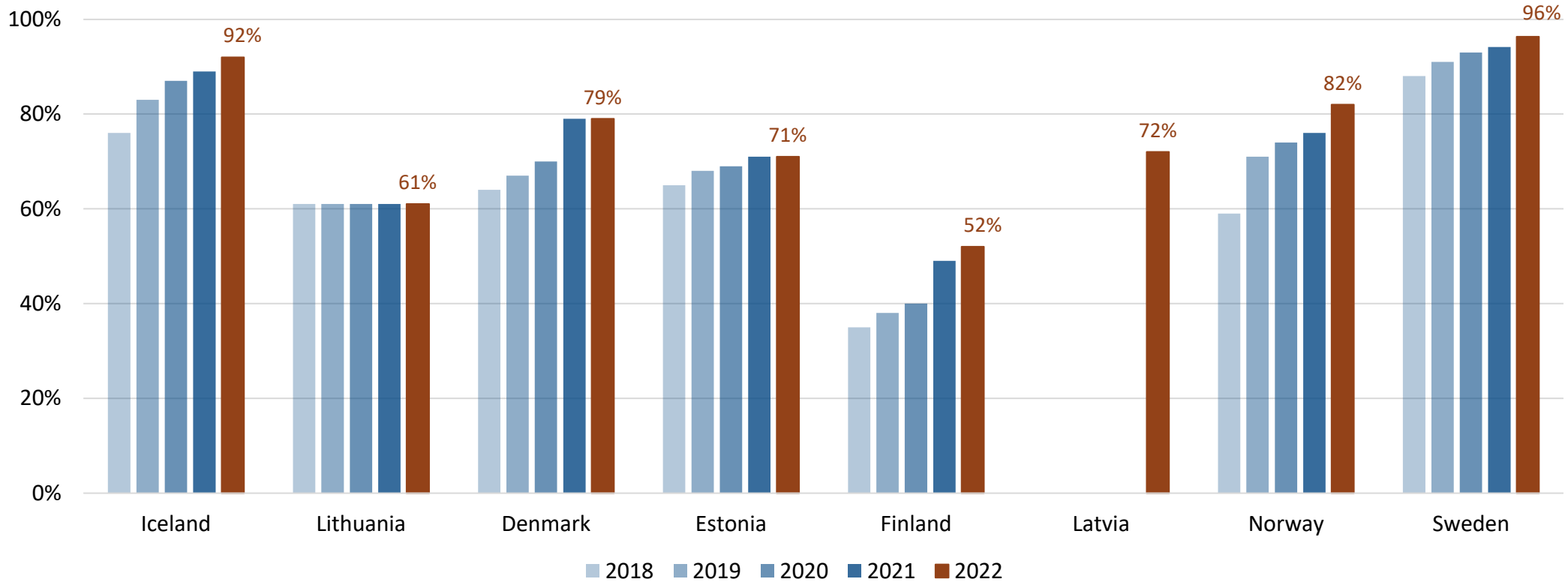
7. Broadband coverage

Definitions of broadband coverage

- In this publication, broadband coverage refers the proportion of households (permanent dwellings) who can get broadband access with certain characteristics.
- This includes households with physical broadband access (“homes connected”). It also includes households without physical broadband access that can order a broadband connection and get it installed by a broadband provider under certain, reasonable conditions (“homes passed”). Hence, the definition of broadband coverage in this publication aims to provide a measure of the total availability of broadband.
- The figures for Iceland and Lithuania refers only to the proportion of households with physical broadband access (“homes connected”).
- The calculation of broadband coverage is based on data from broadband providers in each country.
- Methods and definitions vary to some extent between the countries. Numbers that are close to each other should therefore not be interpreted as significant differences in coverage.

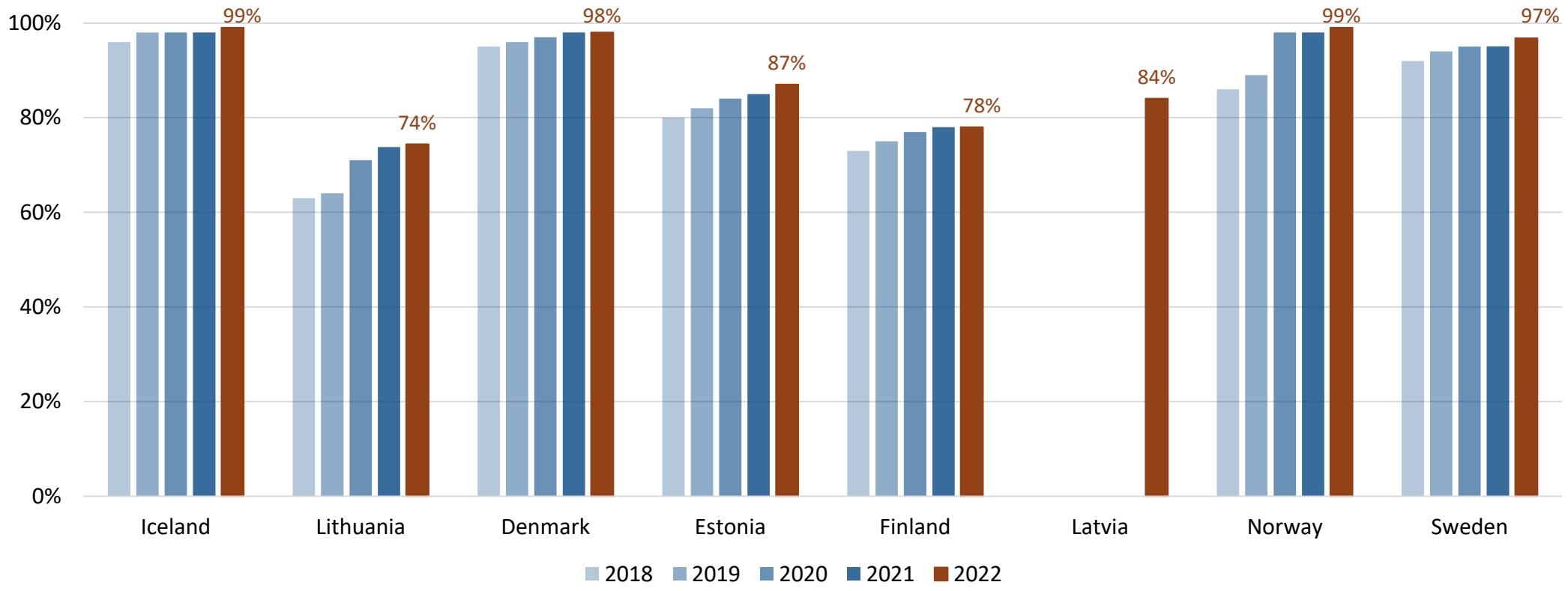
7.1 Coverage of fiber broadband, including fiber LAN (%)

For Iceland and Lithuania, data refer to homes connected, for all other countries data refer to homes passed. Data for Latvia is available since 2022.



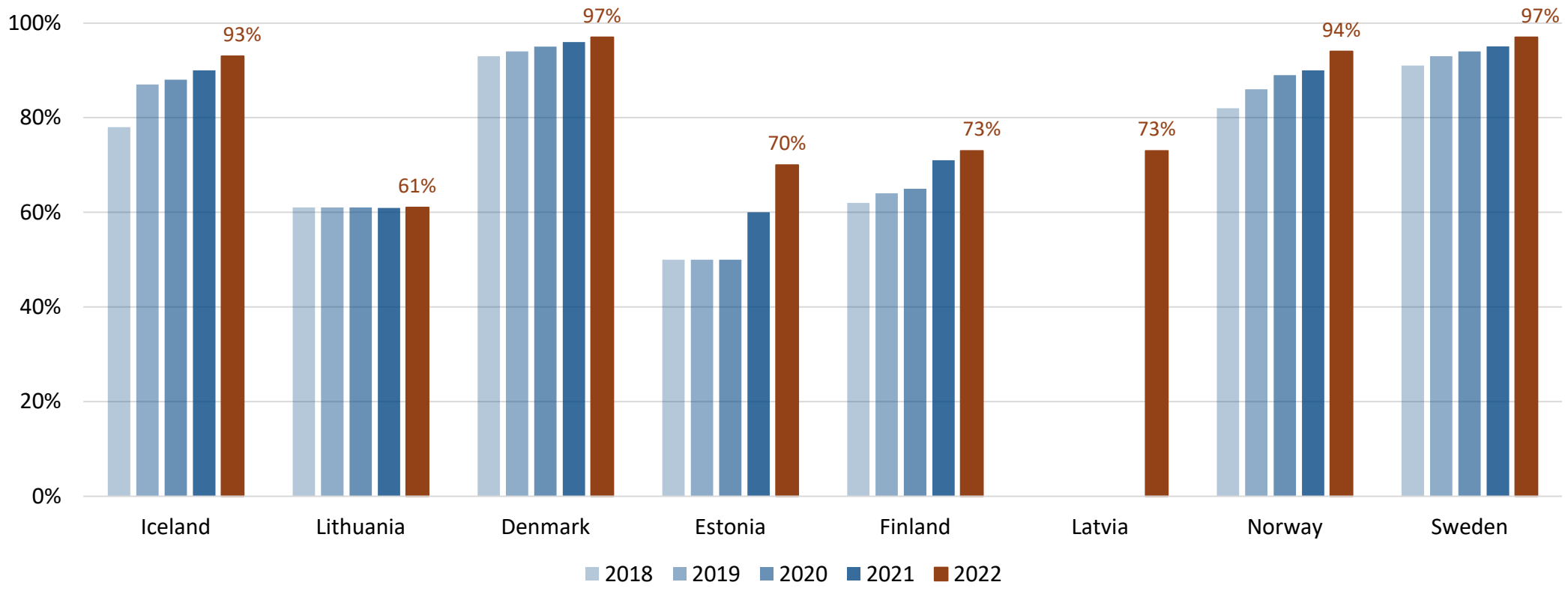
7.2 Coverage of fixed broadband with download speed of 30 Mbps or more (%)

For Iceland and Lithuania, data refer to homes connected, for all other countries data refer to homes passed. Data for Latvia is available since 2022.



7.3 Coverage of fixed broadband with download speed of 100 Mbps or more (%)

For Iceland and Lithuania, data refer to homes connected, for all other countries data refer to homes passed. Data for Latvia is available since 2022.



More statistics of each country

Denmark - https://sdfi.dk/digital-infrastruktur/telepolitik/tal-paa-teleomraadet; tjekditnet.dk; https://app.powerbi.com/view?r=eyJrIjoiMmQwYWFkMjEtNzI0OC00MjMyLWFhYzgtZWVkYjY1OWUyMDBkIiwidCI6IjI1YTRiZTU0LTRhN2MtNGFhMS04YTgwLWJlNmY2NmJiMGUwNiIsImMiOjl9

Estonia

Finland – https://tieto.traficom.fi/en/viestinnasta

Iceland – https://www.fjarskiptastofa.is/english/markets-and-legal-affaires/market-analysis-and-statistics/

Latvia - https://www.sprk.gov.lv/content/nozares-raditaji-9

Lithuania - https://www.rrt.lt/en/istekliai/reports-and-reviews/lietuvos-rysiu-sektorius-en/

Norway

Sweden - https://statistik.pts.se/