

Statistical bulletin

Digital Economy Survey: 2021

Use of information and communication technology (ICT) and the value of website sales by UK businesses.



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1 . Main points

- Estimates in this release are compiled from the Digital Economy Survey 2021 that was relaunched as a pilot survey in 2022; this replaced the E-commerce and Information and Communication Technology (ICT) survey, which was last undertaken for the 2019 reference period.
- Total website sales made by businesses in the UK non-financial sector reached £459.2 billion in 2021, an increase of £102.8 billion (28.8%) compared with 2019.
- UK website sales were dominated by businesses with 1,000 or more employees; their sales were £272.8 billion in 2021 and accounted for 59.4% of total UK website sales.
- The industry sector making the highest proportion of website sales in 2021 was the retail sector, where 34.5% of businesses made website sales.
- Total UK website sales to customers outside the UK were £77.8 billion in 2021, of which 96.9% of sales were made via businesses' own websites or apps.

2 . Digital Economy Survey data

[Digital Economy Survey 2021](#)

Dataset | Released 20 April 2023

UK businesses' engagement in the digital economy including e-commerce sales and purchases, and use of other information and communication technology (ICT).

[Digital Economy Survey 2021: confidence intervals](#)

Dataset | Released 20 April 2023

Confidence intervals at the 95% level for the digital economy survey.

3 . Measuring the data

Estimates in this release are sourced from the Digital Economy Survey (DES) of UK businesses, which covers the manufacturing, production, construction and distribution sectors, as well as parts of the service sector. DES replaces the E-commerce and Information and Communication Technology (ICT) survey that was paused after the publication of the 2019 results to undergo transformation.

Headline figures in this release are based on website sales only, because of uncertainty in the EDI estimates. Previously published estimates in our [E-commerce and ICT activity, UK: 2019 bulletin](#) included sales via Electronic Data Interchange (EDI). Research is underway with a plan to rectify this in the next edition of the survey, scheduled for dispatch in early 2024.

We use the [Organisation for Economic Co-operation and Development's \(OECD\)](#) definition of e-commerce in this statistical bulletin. The OECD defines an e-commerce transaction as: "the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders." The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online.

Quality

We are currently working to develop a detailed Quality and Methodology Information (QMI) note that will detail the strengths, limitations, appropriate uses and methodologies applied to compile survey estimates.

Developing the Digital Economy Survey

Since 2000, the Office for National Statistics (ONS) has run the E-commerce and Information and Communication Technology (ICT) survey. This was used to measure the adoption and use of ICT technologies and electronic trading or e-commerce by UK businesses. After the 2019 results were published, the survey was paused to undergo transformation.

This transformation largely focused on refreshing user needs, and subsequently resulted in a redesign of the questionnaire to meet data gaps identified by UK stakeholders. This led to a doubling of the number of survey questions, some of which related to new concepts such as e-commerce purchases, Digital Intermediary Platforms (DIPs), and collecting more complex detail around how goods and services have been provided, for example, digitally or non-digitally delivered services.

As part of the transformation, the survey was rebranded as the Digital Economy Survey (DES), and the pilot survey was launched in February 2022.

The pilot survey that ran in 2022 provided valuable insights that will inform the evolution of DES.

This includes enhancing the questionnaire to improve the respondent experience, which will have a positive impact on the quality and granularity of the survey results published in future.

New collection of monetary values replacing percentages

A successful development has been to replace the collection of percentage estimates of e-commerce with estimates of actual monetary values in thousands of pounds. There was concern around whether respondents would be able to report monetary values, but the pilot survey has proved it is possible. The pilot survey also showed that, when comparing the percentage previously provided in the E-commerce and ICT survey, respondents tended to provide higher percentages of e-commerce sales, compared with estimates of e-commerce monetary sales values in DES. This is likely to be because respondents estimated percentage values rather than calculated actual figures. Discussions with other countries have shown this also to be the case where similar changes have been introduced.

Different methodology had to be used for estimating e-commerce sales because of this change. Previously, returned percentages were weighted by responders' employment and then aggregated and applied to total turnover estimates from the Annual Business Survey; this provided the monetary values of e-commerce sales. The 2021 e-commerce sales values were collected by asking responders for the actual monetary value of their sales, rather than a percentage of total turnover. These values were then weighted up to represent all businesses in the scope of the survey. This methodology change means that comparisons of e-commerce sales values between 2021 and earlier periods should be treated with caution.

Electronic Data Interchange (EDI)

According to the Organisation for Economic Co-operation and Development (OECD) definition, e-commerce activity is made up of two main components: website sales and sales via Electronic Data Interchange (EDI) where orders are placed automatically over computer networks.

DES changed how e-commerce questions were asked. Responders to the E-commerce and ICT survey were independently asked whether they had made website or app sales, and then whether they had made EDI sales. In DES, responders were first asked whether they had made any e-commerce sales, and only those who responded "yes" were then asked which platform they used, including EDI. The DES results suggest that some respondents did not realise that e-commerce sales include EDI sales, and therefore left out any EDI sales values from their return. This has led to the underreporting of EDI sales in the DES estimates.

As a result, this publication does not include any estimates or breakdowns of EDI sales. E-commerce sales estimates are therefore based on total website sales only while further research is being undertaken. Investigations are also underway on lower-level breakdowns (such as geographical breakdowns), where it has not been possible to provide aggregates on the basis of website sales alone.

Furthermore, it is important to recognise that with advances in technology there are more ways in which online purchases can be made. This may lead to the value of EDI sales changing over time and, therefore, this needs further consideration when designing future iterations of the DES questionnaire, to ensure that all new and emerging methods that support e-commerce activity are fully captured.

New topics and concepts

Questions on new topics were included in the pilot DES for the first time when it was relaunched. The concepts of some of these topics are complex and there was little international guidance available to support the new data collection. Based on feedback from respondents, some examples of questions businesses found difficult were:

- What was your business's turnover from the sale of digital goods and services?
- What was your business's turnover from the sale of digitally delivered services?
- What was your business's turnover from the sale of non-digital goods and services?
- What was your business's turnover from the sale of data and advertising space?

Similarly, questions about Digital Intermediary Platforms, which were new, have been excluded from this release. Before publishing any results for these questions, we need to ensure they have been understood correctly by respondents. We will therefore review the results for these questions once we have more time series data for comparison.

Response and clearance

The approach to developing the Digital Economy Survey was ambitious and aimed to provide data to help inform UK policy making. As a result, the length of the survey more than doubled when compared with the previous E-commerce and ICT survey, adding additional burden for respondents. Coupled with the complexity of some of the new questions, the survey size may have been a factor which contributed to the response rate being lower than in the E-commerce and ICT survey.

The achieved response rate for DES 2021 was only 61%, with a clearance rate of 72%. For comparison, the response rate for the last E-commerce and ICT survey was 74.9%, with a clearance rate of 83.0%. The clearance rate represents the percentage of survey returns that are used in results. DES 2021 used 4,760 survey returns, compared with 6,951 used in the E-commerce and ICT 2019 bulletin.

The nearly 2,200 fewer surveys returns used in the 2021 DES results has resulted in increased uncertainty in some of the 2021 estimates compared with the 2019 Ecommerce and ICT estimates.

This is particularly evident in the estimates of monetary values of e-commerce, where there was also higher variability in data returned by responders for 2021. The impact of this uncertainty can be seen in the 95% confidence intervals in our accompanying [\[Digital Economy Survey: confidence intervals dataset\]\[4\]](#).

The ONS paid close attention to both the response and clearance rates throughout the data collection period to try and raise the clearance rate. Quality assurance checks on some problematic questions were relaxed or removed completely. Given the uncertainty, estimates for such questions are excluded from this release.

Future developments

The pilot Digital Economy Survey (DES) has provided some useful insights that can inform and enhance future iterations of the questionnaire. These insights will help to improve the quality and relevance of data collected at source, while minimising the burden placed upon responders and ultimately improving the quality of outputs.

Some of our future development plans include:

- significantly reducing the length of the DES questionnaire on the next iteration of the survey
- removal and testing of more complex questions to ensure they are understood by the UK business community

Ahead of the next DES release, a thorough review will be carried out to help ensure that all businesses recognise sales via Electronic Data Interchange (EDI) as e-commerce activity, and that they know where this should be recorded. We anticipate this will directly enhance the reporting of the EDI component and enable us to include total e-commerce estimates in future bulletins.

To enable this development work to take place, the survey due to be dispatched in 2023 has been paused. This decision will provide the resources required to make the changes needed for dispatch in early 2024. The 2024 survey will be collecting data for the 2023 reference period, and it is anticipated that an enhanced set of results for 2023 will be published in Quarter 4 (Oct to Dec) 2024.

4 . Related links

[E-commerce and ICT activity, UK: 2019](#)

Statistical bulletin | 5 February 2021

Use of information and communication technology (ICT) and the value of e-commerce activity by UK businesses.

5 . Cite this statistical bulletin

Office for National Statistics (ONS), released 20 April 2023, ONS website, statistical bulletin, [Digital Economy Survey: 2021](#).