



Department for  
Business & Trade

# **DIT export client quality survey: Technical Report**

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# 1. Introduction

## 1.1 Overview

This technical report summarises the key technical aspects of the DIT Export Client Quality Survey, for businesses supported April 2018 to March 2022.

The main aims of the Export Client Survey (ECS) are:

- To track client perceptions of the quality of advice and support provided by DIT;
- To provide a measure of reported impact on businesses after using DIT's services;
- Understand what drives performance and how services can be improved over time.

The ECS comprises two linked annual surveys: a Quality Survey (QS) and a Reported Impact Survey (RIS). Interviewing for the Quality Survey generally begins three months after the specific interaction with DIT. The Reported Impact Survey involves interviewing Quality Survey respondents who agreed to be recontacted for research purposes 12 months after the specified interaction with DIT.

This technical report summarises the technical aspects of the Quality Survey. This is a telephone survey reporting on the number of unique businesses supported by DIT, the perceived quality of the advice and support, and businesses' satisfaction with the service received. The findings in the main survey reports are based on interviewing businesses who used DIT services between April 2018 and March 2022. This encompasses four reporting years and four individual Quality Survey Reports. Each reporting year period constitutes services delivered in April to the following March. This technical report therefore includes the following reporting years:

- April 2018 to March 2019
- April 2019 to March 2020
- April 2020 to March 2021
- April 2021 to March 2022

Throughout the main report, findings from businesses that used DIT services are compared to findings from the previous reporting year period.

The Export Client Survey was originally designed by Kantar and delivered by Kantar over the 2018-19 and 2019-20 reporting years. Following this period, Ipsos were awarded the contract to deliver the 2020-21 and 2021-22 reporting years.

## 1.2 Overview of survey method

### 1.2.1 Sampling

The Quality Survey is based on a monthly sample of businesses which have used a DIT export promotion service. The sample is designed to be representative of businesses supported by DIT, permitting analysis of each service. The sample design and selection take into account the longitudinal aspect of each business's interactions with DIT products and services, i.e. the varying combinations of historic service deliveries received by a business. Survey questions and analysis of the survey data focus on a single specific interaction with

DIT and aims not to consider previous interactions with DIT. However, it is not always possible to fully control what wider experiences the business may draw on when responding.

The sample was drawn from monthly records of service deliveries provided by DIT. These records do not include a unique business identifier. Therefore, each month, core business level information – business names, email domains, postcodes and telephone numbers – were used to identify where multiple records referred to the same business. A monthly sample of businesses is then selected from these records, giving higher probabilities of selection to businesses receiving less common services. In this way, the approach aims to maximise the number of interviews achieved regarding smaller services to facilitate more detailed analysis at the individual service level.

Certain records were not eligible to be sampled each month:

- Records not pertaining to the services covered by the ECS
- Records which were not intended for use (for example, those marked 'DUPLICATE' or 'DO NOT USE')
- Public sector businesses (identified from the business name and email domain)
- Businesses with non-UK telephone numbers (unless there was also a UK telephone number recorded for that business)
- Businesses which had already been sampled for a previous month of the ECS. In order to reduce the burden of participating in research, a business is only included within the Quality Survey once in any 12-month period.

Where a sampled business had received more than one service in the previous month, they were allocated a single main service for the survey. Businesses were given a higher probability of being allocated to less frequently used services than more frequently used services to increase the number of responses related to the less frequently used services.

There is a three-month break period between when a business interacts with DIT and when the interview is conducted. For example, businesses who received support from DIT in April 2021 were approached for interview three months later in July 2021. This is part of the survey design to ensure the interaction was recent enough to be memorable while providing sufficient time for businesses to take action following using the service.

### **1.2.2 Fieldwork**

All eligible respondents were sent an email, prior to being contacted, to let them know the purpose of the research and provide them with an opportunity to contact Kantar or Ipsos to ask any questions or opt out of the research. Interviews were conducted using a Computer Assisted Telephone Interviewing (CATI) method. As such, the questionnaire was programmed in specialist interviewing software, ensuring that any question filtering was applied accurately during the interview.

Response rates have varied over the four reporting periods ranging from 48% to 37%. Overall response rates were calculated using the American Association for Public Opinion Research standard definitions<sup>1</sup>, an industry standard metric for calculating response rates where in the calculation of response rate, the eligibility rate of sample for which eligibility is unknown is assumed to be the same as for the known sample. Further details on response

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<sup>1</sup> [https://www.aapor.org/Standards-Ethics/Standard-Definitions-\(1\).aspx](https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx)

rates are provided in the Data Collection section of this report. The average (mean) interview length has ranged between 20 to 25 minutes each year.

### **1.2.3 Questionnaire content**

The questionnaire collects information on the business's export activity, possible barriers facing exporters and the result of using the service. It also covers aspects of the customer experience using scales of one to ten where ten is the most positive response and zero is the least positive response. Respondents could also say 'Don't know' or 'Not applicable'. The questionnaire also collects firmographics which includes annual turnover, number of employees, sector, and length of time trading. At the end of the questionnaire there is a question asking for permission to contact the business again for research purposes. Businesses that agreed to recontact formed the sample for the Reported Impact Survey.

## 2. Questionnaire

### 2.1 Logic Model

Kantar and Frontier Economics were commissioned to develop a logic model to underpin the redesign of the survey. The aim of the logic model was to ensure questions were designed to understand the economic and wider impacts of public support to promote exports.

The logic model was developed using an iterative process. Firstly, Kantar and Frontier Economics met 11 stakeholders to understand the needs of the survey and which services were to be included. A key parameter of the research was that the logic model needed to be future proofed (to take into account additional services), which underpinned the development of the model. A large number of internal documents from DIT were then reviewed, along with other publicly available documents to understand the research that had been done in the area previously. In total, 60 Documents were reviewed in total.

The final logic model maps groups of activities (inputs), to activities, outputs, short term outcomes and long-term outcomes and then their impacts. Please see the logic model and service mapping documents in Annex A for further detail.

### 2.2 Questionnaire Design

The ECS questionnaire was initially developed through a mixture of key stakeholder interviews and a review of the logic model to understand what survey measures were necessary to capture the intended outputs, outcomes and impacts of each product or service. This was then followed by cognitive testing, then a live field 'pilot' of the questionnaire. Each of these stages are discussed below.

### 2.3 Cognitive testing

In September 2017, Kantar conducted 15 cognitive interviews with a wide range of businesses (six were conducted face to face and nine were conducted by telephone). The respondents were selected by their export status, turnover, number of employees and which DIT service they used.

The primary purpose of cognitive testing is to examine how well the questions perform when asked of survey respondents, that is, if respondents understand the questions correctly and if they can provide accurate and consistent answers. This was achieved through in-depth, semi-structured interviews with a small number of respondents similar to those interviewed in the main stage of the survey.

The objectives of cognitively testing the questionnaire were to:

- Explore understanding of question wording and phraseology for both the question as a whole and any key words and phrases it might contain, particularly how respondents understood the descriptions used of the services they had interacted with
- Understand what decision processes the respondent uses in coming to an answer
- Understand the period of recall; can respondents accurately recall time-specific information
- Test overall feelings about the questionnaire:
  - Order of questions

- Respondents feelings of complex areas - areas that were difficult to answer
- Areas that were causing discomfort or respondent fatigue
- Make recommendations on how the questions can be improved or refined

The cognitive testing was conducted through a mix of face to face interviews, which typically lasted an hour, and telephone interviews, which typically lasted between 30 and 60 minutes.

The cognitive testing showed that the questionnaire worked well, but that respondents often needed further clarification and description about what the DIT product or service was that they had been sampled to interview about. For example, feedback from the interviews found that distinct services such as Find a Buyer or Webinars were easily recognisable and posed no issue for re-call or our confidence that the responses that were given reflected the correct service. On the other hand, where labelling from the sample file was more intangible (for example, 'Significant Assists' or 'Overseas event'), the respondent did not recognise what service they had been sampled them and needed additional probing in order to be confident they were thinking of the correct service. Kantar and DIT worked to revise the definition of each DIT product or service in the post-cognitive testing questionnaire drafts.

## **2.4 Pilot**

Kantar conducted a live 'pilot' trial of the survey between 7<sup>th</sup> and 10<sup>th</sup> November 2017. Interviews were completed with 47 businesses (against the target of 40 interviews).

The objectives of piloting the questionnaire were to:

- Conduct further testing of question wording following cognitive testing and review how the interview as a whole flows for the respondent
- Understand whether changes made to the definition of DIT products and services in the questionnaire were successful
- Test the survey when administered by a telephone interviewer, in the exact same format as the main survey:
  - Particularly test interview length and;
  - How easy the survey was for interviewers to navigate and;
  - Interest in taking part in the survey based on calls and respondent recognition of the service they used during the interview
- Make recommendations on how the questions can be improved or refined further

Overall, the pilot suggested the questionnaire worked well and minimal changes were suggested for the main survey. These changes included updating the service descriptions to help respondents recall their service interaction, using appropriate abbreviations throughout the questionnaire and removing a small number of questions to reduce the overall interview length to 20 minutes.

## **2.5 Changes over time**

There have been minor iterative changes over time such as removing questions with high levels of non-response and adding questions that teams at DIT have requested. The survey questionnaires are reviewed on an annual basis to ensure it is meeting departmental needs.

## 3. Sampling

### 3.1 Sample sources

The ECS sample is drawn from records of business interactions with DIT services, collated by teams within DIT. Each month, DIT supplied the survey contractor with Excel or .csv source files containing these records for eligible export promotion services.

### 3.2 Eligibility

The following services were eligible for the ECS from April 2018 to March 2022:

- Selling Online Overseas (SOO)
- Overseas Market Introduction Service (OMIS)
- Business Profiles (also known as Find a Buyer in earlier reports)
- Missions
- Export and Investment Teams (also known as Sector teams in 2018-19 and 2019-20 reporting)
- Overseas Business Network Initiative (OBNI)
- Export Opportunities
- Posts
- International Trade Advisors (ITAs)
- Webinars
- Export Academy (Introduced in 2021-22)
- Enhanced International Support Service (EISS, introduced in 2021-22)
- Tradeshow Access Programme (TAP, dropped from the survey in 2020-21)

Of the records mapped to an in-scope service, additional eligibility criteria applied for the ECS:

- The ECS only covers UK businesses. Businesses without a UK telephone number were excluded.
- Public businesses were excluded.
- Some records were duplicates or included in the source files in error and were excluded.
- Businesses which had already been invited to the survey in the previous 12 months were excluded.

### 3.3 Building the sample frame

It is common for a business to receive more than one of DIT's exporting services over a period of time. However, the ECS was designed to survey any single business no more than twice in a 12-month period: once for the QS and once for the RIS. The reason for this restriction was to limit the data collection burden on businesses.

To administer the ECS, it was therefore necessary to combine the records from the source files into a single sample frame. As there was no common business-level identifier across the source files, it was also necessary to create such an identifier to make it possible to recognise where different records in the source files referred to the same business.

#### Step 1. Combining the source files into a single sample frame



There was some variation in the information available in each file due to differences in the information collected by each service and the recording practices of different teams. The first step each month was therefore to extract the key information from each file necessary for administering the ECS, primarily:

- Business name
- Business address
- Contact name
- Contact telephone number
- Contact email address
- Any fields necessary for identifying which service (if any) was received

This information was then combined into a long file covering all the records received that month.

While other relevant information was recorded for some services – for example, Businesses House number, turnover, number of employees, and so on – this was not consistently recorded and was missing for many records. These other fields were therefore not used in the sampling process.

### **Step 2. Tele-matching**

Not all records in the original source files had a valid telephone number recorded. Where possible, information from other ECS records or external business databases were used to fill these gaps:

- First, recorded telephone numbers were checked to see if they were in a valid UK telephone number format. Each record was classified as having (i) a valid UK telephone number, (ii) a non-UK telephone number, (iii) an invalid telephone number/no recorded telephone number.
- Where the telephone number was missing or not in a valid format, the survey contractor first checked records from previous months of the ECS. If there was another record with the same business name and postcode, the telephone number from that record was used.
- Where there was still no valid telephone number, the survey contractor conducted external tele-matching. This is where information about businesses (business name, address, URL and email address) are checked against third-party business databases to try to find matching telephone numbers.

### **Step 3. Cleaning of key business information**

The following business information was used to derive a business-level identifier:

- Business name
- Business postcode
- Telephone number(s)
- Email domain

These fields were cleaned and standardised to make the information as consistent as possible for deriving a business-level identifier. Specifically, for **business name**:

- All entries were made lower case
- Contact names were used in the very small number of cases where business was missing
- URL tokens (such as 'www.', '.com'), email addresses and punctuation were removed
- Common tokens (such as 'Ltd', 'plc', 'the) were removed
- Any text before 'trading as' or 't/a' was removed

For postcodes, any white space was removed, and all postcodes were checked to be a valid UK postcode format. If a record did not have a valid UK postcode, the postcode was left blank for the purposes of deriving the business-level identifier.

Email domains were taken from recorded email addresses (that is, the text after the '@' sign). Additionally, a list of common domains such as 'gmail.com' and 'hotmail.com' were excluded. If a record had any of these common domains, the email domain was left blank for the purposes of deriving the business-level identifier.

#### **Step 4. 'Fuzzy' matching**

From the scoping phase and previous fieldwork, it was clear that there would be inconsistencies (including data entry errors) in how information about businesses was recorded due to information being entered by different people in different teams and different systems. To try to account for some of this, the survey contractor conducted 'fuzzy matching' for all records received that month. This matching compared the business name, postcode and email domain of each record to that of every other record. If two (or more) records had 'similar'<sup>2</sup> information in these fields (below a given threshold), these records were assumed to refer to the same business.

Inevitably, this process involves errors: false positives (where records are incorrectly assumed to refer to the same business) and false negatives (where records are incorrectly assumed to refer to different businesses). The chosen threshold aimed to reach a reasonable balance between these different kinds of error.

The fuzzy matching was conducted in two stages:

- First, each record from the most recent month was compared to each other record from that month
- Second, the records from the most recent month were appended to the records from all previous months. Then all records (from any month) were compared against all other records.

The reason for conducting the fuzzy matching in two stages – one within the most recent month and one across all months – was to use different thresholds for similarity in the two steps. For the first step (*within*-month matching), the survey contractor used a less strict threshold and then visually inspected the records which had been assigned to the same business. Where there were errors (false positives) these could then be corrected). However, given the large number of records, it would not be practical to conduct equivalent checks for the second step (*between*-month matching). In this case, a stricter threshold of similarity was used to limit the risks of false positives.

#### **Step 5. Exact matching**

As well as the fuzzy matching described above (Step 4), the survey contractor looked for records where key information matched exactly. This matching was applied for all records across all months.

The key information used was:

- Business name
- Email domain

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<sup>2</sup> 'Similarity' is defined here using Levenshtein distances. In brief, the Levenshtein distance is the number of character changes necessary to convert one string (such as a business name) into another. A small distance indicates that the information for the two records is very similar.

- Postcode
- Telephone number(s)

Where at least two of these fields were identical, the assumption was made that the records referred to the same business. From analysis of historic data, it was decided that it would not be enough for only one field to match exactly, even if this was the business name. This was because there were enough errors associated – due to common business names, data entry errors and so on – that such an approach would not be reliable. However, should any two of these fields match exactly then it was considered very likely that the records do indeed refer to the same business.

While there will again be errors – primarily due to data entry errors – the exact matching step is likely to have very low false positive rates as it is generally unlikely that equivalent errors will be made on two or more of these fields simultaneously.

### 3.4 Sample design

Some services covered by the ECS had relatively few interactions. The QS sample was designed to target additional interviews for these smaller services to increase the sample size available for analysis. There were two ways in which smaller services were disproportionately targeted:

- **The probability of a business being selected.** Initially, businesses that had received less frequently used services were given a higher probability of selection. This was to increase the sample size available for analysis for smaller services.
- **The allocation of services for the questionnaire.** Where a sampled business had received more than one service, they were more likely to be asked about the less frequently used service in the survey.

In practice, however, the first of these – the probability of a company being selected – only affected the QS sampling for the first four months of fieldwork for the 2018-19 reporting year (up until July 2018). After this point, all eligible businesses were issued for the survey each month.

#### The probability of a company being selected: April 2018 to July 2018

For service interactions in April 2018 to July 2018, each month the set of businesses eligible for the ECS was divided into four strata based on the services they had received:

**Table 3.1. Strata determining probability of selection used over April 2018 to July 2018**

Stratum	April 2018	May 2018	June 2018	July 2018
Stratum 1 (most common services)	ITAs	ITAs	ITAs	ITAs
Stratum 2	Export opportunities	Export opportunities	Export opportunities, Sector Teams	Export opportunities, Sector Teams
Stratum 3	Posts	Posts, Sector Teams	Posts, TAP	Posts
Stratum 4 (least common services)	Any other service	Any other service	Any other service	Any other service

The first stratum covered the most common services that month, and the fourth stratum covered the least common services. In each case, businesses were assigned to the highest numbered stratum eligible. For example, in April 2018, a business which had received both ITAs and Posts would be assigned to Stratum 3.

For each month, there was a total target number of businesses to select for the sample. These targets were based on analysis of records from 2016 and 2017, and were chosen to reflect the fact that historically some months (such as March) tended to have far more interactions than others (such as December). The number of businesses to select for each stratum was then determined as follows:

- First, target an equal number of businesses for each service.
- In practice, however, there would not be enough eligible businesses for the least common services (stratum 4). Therefore, proportionally re-allocate the remaining cases from stratum 4 to the other strata.
- If there were also not enough in stratum 3, again reallocate any remaining cases proportionally to strata 1 and 2.

### The allocation of services for the questionnaire

Where a business received more than one service in a month, it was necessary for one of these services to be selected for the QS.

The methodology for the 2018-19 and 2019-20 reporting periods delivered by Kantar followed a different approach to that used for reporting periods 2020-21 and 2021-22 delivered by Ipsos.

For the 2018-19 and 2019-20 reporting periods, the service was selected at random, but with a higher probability given to less common services. The intention was to increase the sample size available for analysis for smaller services.

In practice, this worked by assigning a 'factor' to each service:

**Table 3.2. Factor for service allocation for the 2018-19 and 2019-20 reporting periods**

Service	Factor for service allocation
Export opportunities	1
ITAs	2
Posts	3
Sector Teams	3
TAP	3
Webinars	3
OBNI	5
DSO	10
Business Profiles	10
OMIS	10
Missions	10

The probability of being allocated to a given service is this factor divided by the sum of factors for all services that company had received. For example, if a sampled company had received the two services TAP and Export opportunities, the probabilities for being allocated to each service would be as follows:

- Probability of being allocated to TAP =  $3/(3+1) = 75\%$
- Probability of being allocated to Exp Opps =  $1/(3+1) = 25\%$

Similarly, if a company had received the three services ITA, TAP and OMIS, the allocation probabilities would be as follows:

- Probability of being allocated to OMIS =  $10/(10+3+2) = 66.7\%$
- Probability of being allocated to TAP =  $3/(10+3+2) = 20.0\%$
- Probability of being allocated to ITA =  $2/(20+5+2) = 13.3\%$

Following 2 years of this methodology which were delivered by Kantar, the service allocation approach was revised to more accurately reflect changes in volume of businesses supported by each service from the 2020-21 reporting year onwards. In addition, greater flexibility was built in to adapt selection weights to in-year changes in the volume of businesses using eligible export promotion services. This updated approach is outlined below.

To increase the sample size for the four less frequently used, and so higher priority services, (e.g Selling Online Overseas, OMIS, Business Profiles and Missions), businesses were sampled separately (and in preference) to the remaining services. For those higher priority services, if a business had used more than one service in the wave, then those services were all given the same probability of being sampled, equal to one divided by the total number of services received.

For the remaining services, a weighted sampling approach was employed to increase the sample sizes for the services that were used less. This involved allocating a loading to each service and then using that loading to generate the adjusted probability of selection for that service (see Tables 3.3 and 3.4). So for example, if a business had received both Posts (loading = 1) and Export and Investment Teams (loading = 2) in March 2022, then the probability that it was asked about Posts in the questionnaire would be  $= 1/(1+2) = 1/3$ , and the probability that it was asked about Export and Investment Teams would be  $= 2/(1+2) = 2/3$ . These probabilities were adjusted throughout the fieldwork year, in order to react to the changing volumes of eligible businesses per service over the course of the year.

Once a business had participated in the survey, it could not be sampled again for another year, and so was removed from the sampling frame. It was however still included in the population counts that were used for the weighting.

**Table 3.3 Probability of selection weights by service for the 2020-21 reporting period**

Service	April 2020 to August 2020	September 2020 to October 2020	November 2020 to March 2021
Selling Online Overseas	1	1	1
OMIS	1	1	1
Business Profiles	1	1	1
Missions	1	1	1
Webinars (COVID-19)	0.75	1	1
Export and Investment Teams	1.5	2	2
OBNI	1.5	1.75	1
Export Opportunities	1.25	1.5	1
Webinars (EU)	0.75	1	1
Posts	1	1	1
ITAs	0.75	0.75	1
Webinars (standard)	0.75	0.75	1

**Table 3.4 Probability of selection weights by service for the 2021-22 reporting period**

<b>Service</b>	<b>April 2021 to December 2021</b>	<b>December 2021 to March 2022</b>	<b>February 2022 to March 2022</b>
Selling Online Overseas	1	1	1
OMIS	1	1	1
Business Profiles	1	1	1
Missions	1	1	1
Export and Investment Teams	2	2	1.5
OBNI	2	2	2
Export Opportunities	2	2	2
Posts	1.25	1.25	1.25
ITAs	1.25	1.25	1
Webinars	1.5	1	1.25
Export Academy	1.5	1.25	1.25
EISS	1.5	2	2

## **4. Data collection**

### **4.1 Fieldwork outcomes**

Respondents selected during the sampling process were sent an advance email notifying them about the study before fieldwork began. The advance emails offered more information about the business's interaction with DIT and the survey itself – such as date of interaction, which DIT service was used, and the purpose of the research. They also provided businesses with an opportunity to contact the survey contractor to ask any questions or opt out of taking part the research.

The survey was administered by teams of specialist business interviewers in Kantar over the 2018-19 and 2019-20 reporting periods, and Ipsos over the 2020-21 and 2021-22 reporting periods. Interviewers received a detailed briefing from the research team prior to fieldwork, with a view to ensuring that they understood the policy background to the study and were fully appraised of how to deal with any queries which respondents were likely to raise during the course of the interview.

The interviewers conducted the interviews using Computer-Assisted Telephone Interviewing (CATI).

### **4.2 Response rates**

#### **4.2.1 Response rates by each reporting period**

Table 4.1 below shows response rates achieved for each reporting year. Overall response rates have been calculated using the American Association for Public Opinion Research standard definitions<sup>3</sup>, an industry standard metric for calculating response rates where in the calculation of response rate, the eligibility rate of sample for which eligibility is unknown is assumed to be the same as for the known sample.

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<sup>3</sup> [https://www.aapor.org/Standards-Ethics/Standard-Definitions-\(1\).aspx](https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx)

**Table 4.1 Overall fieldwork outcomes by reporting period**

<b>Fieldwork outcomes</b>	<b>April 2018 to March 2019</b>	<b>April 2019 to March 2020</b>	<b>April 2020 to March 2021</b>	<b>April 2021 to March 2022</b>
<b><i>Number of cases issued</i></b>	16,120	14,594	22,532	20,541
Live sample – not interviewed or partial contact	4,188	5,106	1,179	3,400
Deadwood (e.g. uncontactable phone numbers)	1,672	1,466	10,510	8,105
Refusal	3,625	2,515	4,862	4,428
Ineligible	969	530	625	0
<b>Complete interview</b>	5,666	4,977	5,356	4,608
<b>Response rate</b>	47%	42%	48%	37%



### 4.2.2 Response rates for each DIT service

Tables 4.2 to 4.5 break down the response rates by each product or service over each reporting period.

**Table 4.2 Fieldwork outcomes April 2018 to March 2019 reporting period**

Service	Export Opportunities	Business Profiles	Selling Online Overseas	Webinars	TAP	ITAs	Missions	OBNI	OMIS	Posts	Sector teams
<b>Number of cases issued</b>	2,365	665	131	1,326	813	4,897	502	468	397	2,368	2,188
Live sample - no interview	668	100	58	374	195	1,161	127	103	100	635	6670
Deadwood	179	98	11	96	59	486	69	56	63	313	242
Refusal	486	224	19	278	173	1,080	118	124	74	524	525
Ineligible	139	85	8	120	17	169	21	31	19	149	211
Complete	893	158	35	458	369	2,001	167	154	141	747	543
<b>Response rate</b>	48%	43%	38%	47%	53%	50%	44%	46%	49%	44%	40%

**Table 4.3 Fieldwork outcomes April 2019 to March 2020 reporting period**

<b>Service</b>	<b>TAP</b>	<b>ITAs</b>	<b>Missions</b>	<b>OBNI</b>	<b>OMIS</b>	<b>Posts</b>	<b>Sector teams</b>	<b>Webinars</b>	<b>Export Opportunities</b>	<b>Business Profiles</b>	<b>SOO</b>
<b><i>Number of cases issued</i></b>	410	6,019	646	721	309	2,573	1,198	1,328	927	384	89
Live sample - no interview	110	1,969	247	239	119	928	451	530	359	121	32
Deadwood	37	498	81	105	49	337	136	96	78	41	8
Refusal	81	977	104	144	43	430	213	236	164	104	19
Ineligible	3	172	25	35	9	113	81	43	28	19	2
Complete	179	2,402	189	198	89	765	308	423	297	99	28
<b>Response rate</b>	49%	47%	38%	38%	38%	39%	37%	38%	38%	34%	37%

**Table 4.4 Fieldwork outcomes April 2020 to March 2021 reporting period**

<b>Service</b>	<b>ITAs</b>	<b>Missions</b>	<b>OBNI</b>	<b>OMIS</b>	<b>Posts</b>	<b>E&amp;I Teams</b>	<b>Webinars (combined)</b>	<b>Export Opportunities</b>	<b>Business Profiles</b>	<b>SOO</b>	<b>Total</b>
<b><i>Number of cases issued</i></b>	5,650	754	835	225	3,455	546	9,281	1,335	323	128	22,532
Live sample - no interview	131	30	29	3	106	23	793	53	3	8	1,179
Deadwood	2,713	399	454	128	1,917	265	3,795	636	149	54	10,510
Refusal	1,106	159	193	46	687	126	2,123	303	91	28	4,862
Ineligible	174	23	32	6	123	19	192	39	12	5	625
Complete	1,526	143	127	42	622	113	2,378	304	68	33	5,356
<b>Response rate</b>	55%	44%	37%	46%	45%	44%	45%	46%	42%	49%	48%

**Table 4.5 Response rates April 2021 to March 2022 reporting period**

<b>Service</b>	ITAs	Missions	OBNI	OMIS	Posts	E&I Teams	Webinars	Export Opportunities	Business Profiles	SOO	Export Academy	EISS	Total
<b><i>Number of cases issued</i></b>	5,807	393	458	144	3,832	1,153	5,018	518	156	92	2,257	641	<b>20,541*</b>
Complete	1,479	73	49	23	685	166	1,155	102	29	21	654	161	<b>4,608*</b>
<b>Response rate</b>	47%	29%	27%	29%	35%	22%	44%	41%	42%	46%	39%	44%	<b>37%</b>

\*72 issued and 11 completes were 'unclassified' for service. These were interviews completed before the mapping eligibility rules for Webinars and Export Academy sample were fine-tuned at an early stage of 2021-22 fieldwork.

## 5. Weights

### 5.1 Overview of weights

Two sets of weights were produced for the sample dataset: a **business-level weight** for any analyses of the businesses that are not dependent on the actual service received; and a **service-level weight** for analyses of the services received. Applying the business-level weights makes the sample of businesses representative of all the businesses that received the eligible DIT services in the respective survey period. The service-level weights adjust the sample of businesses based on the services that they were asked about in the questionnaire so that those services are representative of all the eligible DIT services that were delivered in the survey period.

#### Business-level weights

The business level weights were generated using a single stage of calibration weighting. The calibration weighting produced weights that adjust the sample so that the weighted sample matches the profiles of all the businesses that had used an eligible DIT service in the survey period for a range of measures.

The measures that were included in the calibration weighting were:

- Counts of the number of businesses receiving each service in the survey period
- Counts of the number of businesses receiving a DIT service each month
- The number of interactions that each business had a DIT service in the survey period
- The number of different services that the business received in the survey period.

The first two measures were counts of the total number of services received; whereas the last two measures were counts for the total number of businesses. One of the advantages of using calibration weighting was that it was possible to adjust to these profiles which were at two different levels: counts of the businesses, as well as all the services that had been received.

The final weights from the calibration weighing were scaled so that the sum of the weights equalled the sample size (i.e. to have mean 1) and these scaled weights were used as the business-level weights.

#### Service-level weights

The service-level weights were also generated using calibration weights, but with initial selection (design) weights. These selection weights were required because, for each business, the service that was asked about in the questionnaire was sampled from all the services that it had received over the survey period. The calculation for the selection weight also included the loadings ( $W_{ij}$ ) that had been used when selecting the service. These were the loadings that had been employed to increase the sample sizes for the less common services.

The selection weight for a business for which service  $k$  was selected was calculated as:

$$wt\_sel = \sum_i \sum_j (W_{ij} Z_{ij}) / \sum_j (W_{kj} Z_{kj})$$

where  $i$  is the service and  $j$  is the month.  $Z_{ij} = 1$  if the business had received service  $i$  in month  $j$ ; and  $Z_{ij} = 0$  otherwise. The selection weights were trimmed at 8 (the 97.5<sup>th</sup> percentile) to reduce the impact of large weights on the statistical efficiency.

The measures that were included in the calibration weighting were:

- The number of services received by month, quarter or in total
- Whether a business had received a DIT service in just a single month or more than one month.

Whether a service was calibrated by month, quarter or in total was dependent on the size, and distribution by month, of the service in the sample. The six least common services (Selling Online Overseas, OMIS, Business Profiles, Missions, Export and Investment Teams, and OBNI) were all included with annual counts. The most common, ITAs, was included with monthly counts. The rest were all included with quarterly counts. As an approximately rule of thumb, the allocation of the services to the time period (month, quarter and in total) was set to avoid counts of less than 30 in any of the sampling cells.

The final weights from the calibration weighing were scaled so that the sum of the weights equalled the sample size (i.e. to have mean 1) and these scaled weights were used as the service-level weights.

## 5.2 Levels of weights

The reason for producing two levels of weights – a business-level weight and a service-level weight – is that many businesses received more than one service from DIT over the time covered by the QS. As a result, there was more than one service for which that business could have been sampled. In short, the business-level weight is intended to account for differences in the probability of a business taking part in the ECS for *any* service. The service-level weight is intended to account for differences in the probability of a business taking part in the ECS for a *particular* service.

Much of the ECS questionnaire is focused on a business' experience of a particular DIT service. For these questions, the responses depend on which service the business was asked about. The service-level weight is used for these questions to provide estimates which are representative of the businesses receiving each service.

However, there are some questions where it is reasonable to assume that the responses do not depend on which service the business was sampled for. Examples include the number of employees a business has, turnover, and prior exporting activities. Effectively, the business-level weight assumes that the answer to these questions would have been the same had the business been sampled for a different service. The advantage of using the business-level weight for these questions is that the survey estimates will tend to be more precise than when using the service-level weight. This is because the service-level weight will include some cases where the probability of being selected for that particular service is very low. These will produce more extreme values for the service-level weight, reducing the effective sample size for analysis. Annex C has a map of which weight is used for each survey question.

## 5.3 QS Design weights

The design weights are derived as 1 divided by the probability of selection:

$$DW_{company} = \frac{1}{\sum_{service} P(S_{service})}; \quad DW_{service} = \frac{1}{P(S_{service})}$$

Where  $DW_{company}$  and  $DW_{service}$  are the business- and service-level *design weights* respectively,  $\sum_{service} P(S_{service})$  is the probability of a business being selected for *any* service, and  $P(S_{service})$  is the probability of being selected for a *particular* service.

Businesses with high probabilities of selection are given less weight (as they will be relatively over-represented in the dataset), while businesses with low probabilities of selection are given more weight (as they will be relatively under-represented).

However, the selection probabilities are not known exactly because of the complexity of the sample structure. Primarily, this complexity is due to the exclusion criteria applied: once a business was selected for the ECS, it was excluded from selection for the next 11 months (so that it would only be selected once in a twelve-month period). In effect, this means that the probability of a business being selected in a given month depended on the selections made in all previous months.

Other factors of the sample structure affecting the probability of selection were:

- The number of businesses selected that month;
- The number of interactions/service deliveries recorded for each service;
- Which service(s) a given business had received that month.

As the selection probabilities were not known exactly, these were estimated by simulation. In practice, this involved repeating the selection process from the first month through to the most recent month many (2,500) times. The selection probabilities were then estimated as the proportion of these simulations in which the business was selected for *any* service (for the business-level weight), or for a *specific* service (for the service-level weight).

## 5.4 Design effects

The weighting impacts on the efficiency of the sample when carrying out analyses. In general, the more variable the weights, the greater the loss of efficiency in the sample. The effective sample size is the size that a hypothetical sample with no weighting would have to be to give the same level of precision. The design effective is the relative loss in the effective sample size and is calculated as the actual sample size divided by the effective sample size.

## 6. Data and analysis

### 6.1 Confidence intervals

Charts and tables in the report display the confidence interval for each survey estimate. When a survey is carried out, the respondents who take part are only a subset of those in the population and as such may not give an exact representation of the 'true' average in the population. The reporting uses 'Confidence Intervals' to account for the fact that we have interviewed a subset of the population. A 95% Confidence Interval is a margin of error around an estimate, which gives a range of values within which you can be 95% confident that the true mean will lie.

For instance, if 1000 people are interviewed, and 500 (50%) of them say that they agree with a statement, then you can be 95% confident that true proportion of people who agree with the statement is between 50% +/- 3% (47%, 53%).

When a smaller number of people of interviewed, it means that there is a larger margin of error around the estimate. The size of the margin of error also varies depending on the estimate itself. As an example, the table below provides several different confidence intervals for different estimates with different sample sizes.

**Table 6.1 95% Confidence intervals around various estimates with different sample sizes**

Number of interviews	100	500	1000
Estimates (%)			
10% or 90%	+/- 6%	+/- 3%	+/- 2%
30% or 70%	+/- 9%	+/- 4%	+/- 3%
50%	+/- 10%	+/- 4%	+/- 3%

The ECS has a complex sample design. One of the effects of using this complex design (and weighting) is that standard errors for survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the same size. To obtain an accurate measure of a confidence interval one needs to take into account more than just the unweighted sample size and survey estimate into consideration as this does not adjust for the true 'standard error' around any estimate. The ECS is weighted to correct for variation in sampling probability and variation in response probability.

The true standard errors of the complex design are calculated by multiplying the standard error (of an estimate from a simple random sample) by the design factor (deft).

The ratio of the standard error of the complex sample to that of a simple random sample of the same size is known as the design factor.

The 95% confidence interval of a complex survey design is equal to:

$$p \pm (1.96 \times \text{true standard error})$$

where



true standard error = design factor x standard error of a simple random sample; and

p = the point estimate, which is the percentage or proportion estimated from our sample (or sample mean)

The analysis of Confidence Intervals uses the Complex Samples Module within the analytical software package, Statistical Product and Service Solutions (SPSS) to correct for these effects. This provides a more precise estimate of the confidence intervals.

## **6.2 Significance testing**

Where the results for one group of respondents, or between survey years, are compared with the results for another group, any differences discussed in the text of this report were statistically significant at the 95% probability level, unless otherwise stated. This means that you can be 95% confident that the differences observed between the subgroups are genuine differences and have not just occurred by chance. Similarly, any changes between years discussed in the text are statically significant at the 95% probability level.

## **6.3 Data quality and processing**

Interviews were conducted using a Computer Assisted Telephone Interviewing (CATI) method. As such, the questionnaire was programmed in specialist interviewing software, ensuring that any question filtering was applied accurately during the interview. A number of logic and consistency checks were built into the CATI script. These were of two types: hard checks and soft checks. Hard checks are ones where the interviewer is unable to move to the next question until the discrepancy or inconsistency has been resolved. Soft checks are ones where the interviewer is asked to confirm that the information entered at a specific question is correct but is able to pass on to the next question.

The survey contractor produced datasets using SPSS. The dataset was checked and cleaned by researchers within the survey contractor team. This included:

- Routing checks on questionnaire variables
- Checks on all sample variables included in the data and weighting scheme
- Cleaning of variable names, variable labels and value labels
- Comparison checks with previous datasets
- Sense checks on key variables.

Derived variables were also created for analytical purposes.

With the exception of the coding of responses to open-ended questions, or option to provide an 'other' response within a pre-coded list question, no data entry phase was required for this CATI survey. The programmed script ensured that all question routing was performed automatically, and no post-editing of the data was required in the way that might be necessary for surveys administered using a 'Pencil and Paper' method. Data in the report is based on estimates and responses provided by the respondents. While steps are taken during interviewing to ensure that data is accurate caution should be taken as there is the potential for respondents to 'guess' at some answers where they do not know the precise figure.

Responses from fully open-ended questions and 'other' responses were collated and code frames created to reflect all key themes in the responses. Responses from questions with an 'other – specify' option were analysed and, if appropriate, back-coded into one of the pre-coded categories. If the response could not be assigned to an existing code but gained a sufficient number of mentions, a new code was created which all relevant responses were assigned to. Coding was

carried out by a specialist team. All coders who worked on the study were briefed and a written set of instructions was made available. Code frames were created by the coding team in the first instance and approved by the research team.

## **6.4 Derived variables**

Several questions in the survey asked respondents to give a rating using a scale from 0 to 10, where 10 was the most positive response and 0 was the least positive response. Responses have mostly been grouped into positive (a score of seven or higher), neutral (a score of four to six), and negative (a score of three or below). Respondents could also say 'Don't know' or 'Not applicable'. The exception to this was responses to the question which was used to calculate the Net Promoter Score (NPS) for each export product or service. NPS is a summary of how likely it is that businesses would recommend using the service or product. Businesses were asked to provide a score between zero and ten, with ten being the most positive response. Scores of nine and ten were banded together as 'promoters' and scores of zero to six as 'detractors'. NPS is calculated as the difference between the percentage of 'promoters' and 'detractors'. A positive NPS means more people would recommend the service than would not.

Respondents who said the question did not apply ('Not applicable') to them were excluded from the analysis. Those who answered 'Don't know' or 'Refused' are usually included in the charts unless no respondents gave this answer for that particular question. However, 'Don't know' and 'Refused' answers were excluded from the business turnover breakdowns in the Quality Survey report for maximum comparability so that significant differences between years are genuine and not due to varying levels of these responses. Levels of 'Don't know' and 'Refused' responses for other questions and measures used for analysis are comparable between years.

## **6.5 Reporting**

Where percentages shown in charts or tables do not total to exactly 100% (or where they do not exactly total to a summary statistic given, such as agree/disagree) this is due to a combination of rounding to the nearest whole number and because some questions allowed participants to choose more than one response option.

Where the results for one group of respondents are compared with the results for another group, any differences discussed in the text of this report were statistically significant at the 95% probability level, unless otherwise stated. This means that you can be 95% confident that the differences observed between the subgroups are genuine differences, and have not just occurred by chance.

Base sizes, displaying the number of people who gave a response to any question (excluding those who said that the question did not apply to them), are shown on each chart.

Data in this report is based on estimates provided by the respondents. While steps are taken during interviewing to ensure that data is accurate (interviewers reading back responses on questions with numeric responses, respondents being offered the chance to provide a banded response rather than an exact numeric answer if they are unsure), caution should be taken as there is the potential for respondents to 'guess' at some answers where they do not know the precise figure.

## **6.6 Data handling and security**

This section describes the data handling and security processes that the survey contractor and DIT have in place to ensure that personal information is kept safe, and all relevant corporate, legal, statutory and regulatory requirements are met including:

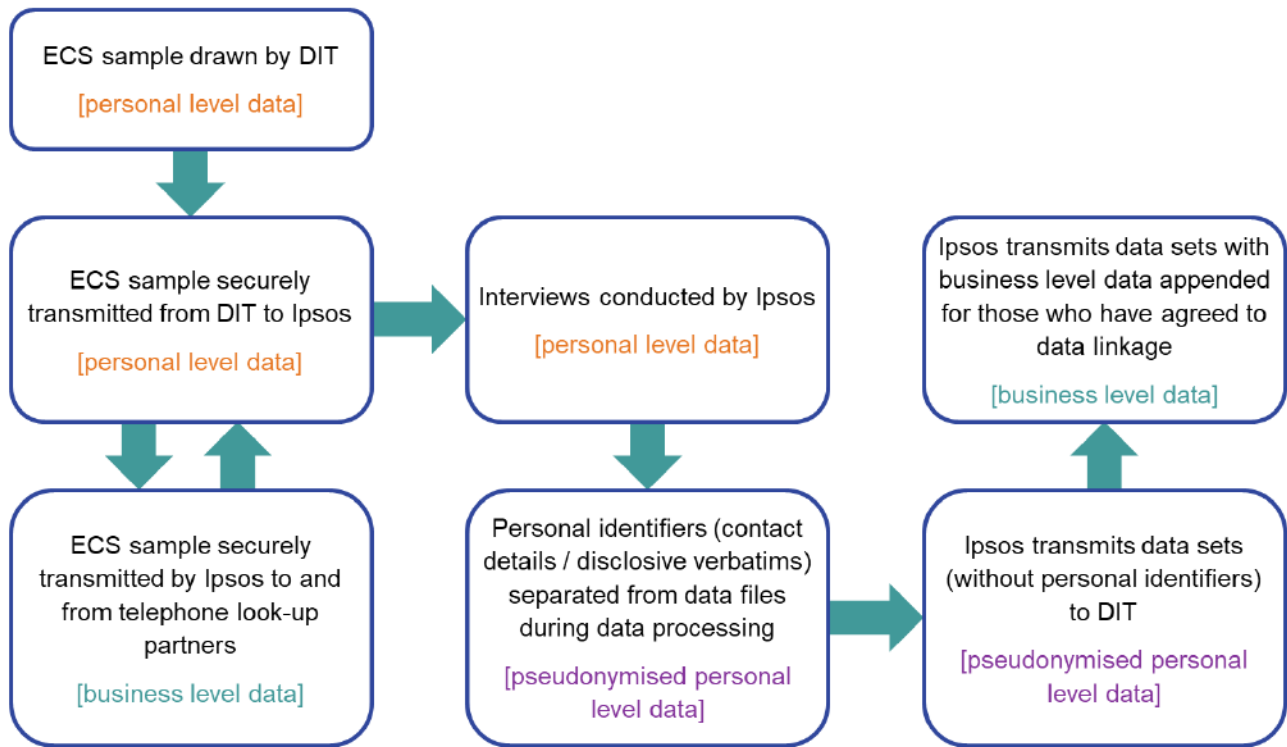
- MRS and ESOMAR professional code of conduct and frameworks published by the SRA, ESRC, GSR and UK Statistics Authority
- ISO 20252: international market research quality standard
- ISO 9001: international standard for quality management systems
- ISO 27001: international standard for data security
- 2018 Data Protection Act
- Cyber Essentials
- Fair Data

Each month, the ECS sample is drawn by DIT and then securely transferred to the survey contractor and stored in line with the requirements of the 2018 Data Protection Act and GDPR. The data security procedures in place minimise the risk of data loss and ensure that respondents' confidentiality is protected at all times. The survey contractor ensure that their processes are updated with the most recent regulations by conduction regular cycles of internal security audits, which feed into their continuous improvement process.

Once received, the survey contractor process the sample and securely transmit a portion of the sample without telephone numbers to an approved supplier to obtain telephone details of the businesses. Once the telephone interviews are complete personal identifiers (contact details/disclosive verbatims) are separated from data files during data processing. All personally identifiable information is removed from DIT ECS datasets before they are transmitted outside the survey contractor (to DIT). All reporting is non-disclosive, including any presentations of findings, topline and reports.

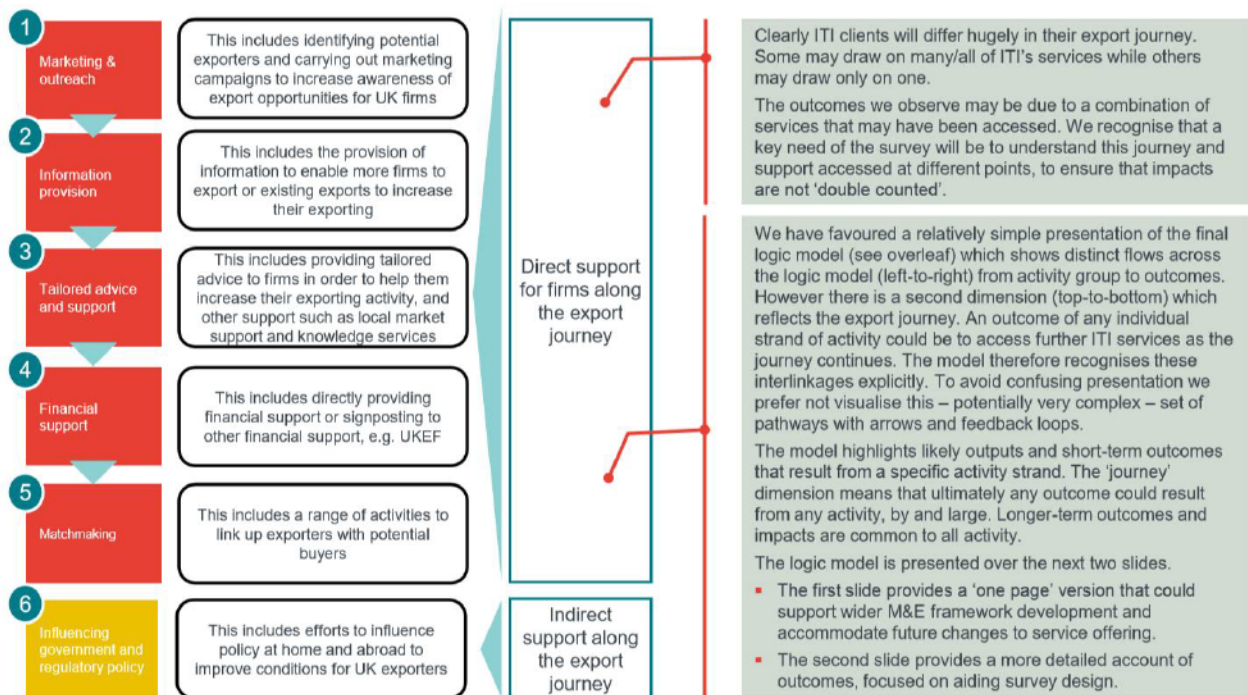
The data is stored and deleted according to the requirements of the UK General Data Protection Regulation (GDPR) and the UK Data Protection Act (DPA) 2018 and the Market Research Society Code of Conduct. Network personal data files are deleted within 12 months of project closure. For an overview of the data processes detailed above used by the current contractor, Ipsos, please refer to figure 1.

Figure 1: data flow diagram



# Annex A – International Trade and Investment (ITI) logic model for ECS

Frontier Economics created the logic model used to help develop ECS questionnaires. It focussed on services provided by the International Trade and Investment Group within DIT. The International Trade and Investment (ITI) Group is the most substantial element of the three DIT business areas which make up the Department’s expenditure. Before the foundation of the Department for International Trade, ITI was known as UK Trade and Investment (UKTI), a non-ministerial government department.



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