Department for Business & Trade

DBT Export Client Quality Survey for Businesses Supported April 2022 to March 2023: Technical report

Publication date 21st May 2024

This is a report of research carried out by Ipsos UK Public Affairs, on behalf of the Department for Business and Trade.

Ipsos UK Public Affairs works closely with national governments, local public services and the not-for-profit sector. Its c.300 research staff focus on public service and policy issues. Each has expertise in a particular part of the public sector, ensuring we have a detailed understanding of specific sectors and policy challenges. Combined with our methods and communications expertise, this helps ensure that our research makes a difference for decision makers and communities.

Research contractor: Ipsos UK Public Affairs, London UK
Research Authors: Allan Simpson, Krishna Dabhi, Jamie Douglas, Finlay Procter, Shahil Parmar

Acknowledgements:
The team at Ipsos UK would like to thank Kate McAtamney, Rahul Jalil, Pablo Telford and Ezra Bowden from the Department for Business and Trade for their invaluable inputs during the project. Errors and omissions remain the responsibility of the authors alone.

Ipsos UK Public Affairs is part of the Ipsos Group.
www.ipsos.com/en-uk

This work was carried out in accordance with the requirements of the international quality standard for Market Research, ISO 20252.

Contents

1 Introduction

1.1 Overview

This technical report summarises the key technical aspects of the DBT Export Client Quality Survey, for businesses supported April 2022 to March 2023.

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

- Track client perceptions of the quality of support and advice provided by DBT
- Provide a measure of reported impact on businesses from using a DBT service
- Understand what drives performance and how services can be improved over time

The ECS comprises two linked 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 DBT. The Reported Impact Survey involves interviewing Quality Survey respondents who agreed to be recontacted for research purposes 12 months after the specified interaction with DBT.

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 DBT, the perceived quality of the advice and support, and businesses' satisfaction with the service received. The findings in the main survey report are based on interviewing businesses who used DBT services between April 2022 and March 2023 (2022/23). Throughout the main report, findings from businesses that used DBT services in 2022/23 are compared to findings from 2021/22.

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 DBT export promotion service. The sample is designed to be representative of businesses supported by DBT, permitting analysis of each service. The sample design and selection take into account the longitudinal aspect of each business's interactions with DBT 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 DBT and aims not to consider previous interactions with DBT. 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 DBT. 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 DBT and when the interview is conducted. Interactions in April 2022 are included within the July 2022 sample, interactions in May 2022 are included within the August 2022 sample etc. This is part of the survey design to ensure the interaction was recent enough to be memorable but providing sufficient time for businesses to take action following using the service.

1.2.2 Fieldwork dates

Fieldwork for this report began in July 2022 and ended in June 2023 (interviewing businesses who received support from DBT in March 2023). This means that the report covers DBT export support activity during the 2022-23 Financial Year.

1.2.3 Fieldwork

All eligible respondents with a useable email address 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 Ipsos to ask any questions or opt out of the research. Interviews were primarily 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 small number of interviews were completed online using Computer-Assisted Web Interviewing (CAWI). The online survey option was introduced for the first time in March 2023 at the request of DBT in order to facilitate the accessibility needs of potential respondents. The online survey was made available upon specific request. A link to the online survey was also included in emails sent to contacts classified as 'deadwood' (e.g. uncontactable telephone numbers) in the previous month's sample.

For instance, records that had been classified as ‘Deadwood’ in the January 2023 sample were sent a link to the online survey in early May 2023, taking into account the three-month break period between when a business interacts with DBT and when the monthly sample enters CATI fieldwork. A total of 15 interviews were conducted using the online survey option.

A response rate of 27% was achieved for interviews conducted during the fieldwork period. Overall response rates were calculated using the American Association for Public Opinion Research standard definitions[1], 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. The average (mean) interview length was around 22 minutes between July 2022 and June 2023.

1.2.4 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.

A full copy of the Quality Survey questionnaire is included in Annex B.

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

2 Questionnaire

2.1 Questionnaire changes

A number of changes were introduced to the survey questionnaire from the version used in the previous year (2021/22). Some questions were amended to improve respondent understanding. Other questions were rotated out of the survey in 2022/23 and will be reintroduced in the 2023/24 survey.

Table 2.1 details the changes made to the questionnaire. A full copy of the questionnaire is included in Annex B.

Table 2.1: Questionnaire changes in 2022/23[2]

Question number	Changes made
Q070 – Qyearsell	Question rotated out of 2022/23 survey
Q071 – Qcurexpme	New question on whether businesses export to the Middle East
Q071b – Qcurexpas	Addition of four new option codes
Q079a – Qresult	Addition of one new option code
Q076 – Qcontact	Question rotated out of 2022/23 survey
Q104 – Qbarrier	Addition of one new option code
Q104b – Qanticapability	New question on issues businesses experience that limit their ability to export successfully
Q107 – Qreg	Wording amended
Q108 – Qevent	Wording amended
Q079b – Qresult	Addition of one new option code
Q081 - Qresultopps	Wording of option codes adjusted
Q082 – Qresult_conts	Question removed
Q094 - Qwhydis	Addition of one new option code and removal of another
QfirstDIT	Question rotated out of 2022/23 survey
Q058 – Qturnover	Wording of option codes adjusted
Q061 – Qturnprop	Question removed and replaced with Q061a
Q061a – Qturnpropa	New question added to replace Qturnprop

[2] Annex B of this report details specific wording of questions, as asked in the survey.

2.2 Questionnaire content

The questionnaire had an average (mean) length of 22 minutes and one second, which was broadly in line with the previous year (21 minutes and 24 seconds) and the specified average length of 20 minutes. A summary of the overall structure is below. Businesses were eligible to answer most questions. However, there were some sections that were routed by the DBT exporting service that the business had been sampled to interview about. A copy of the 2022/23 survey questionnaire can be found in Annex B.

Table 2.2: Questionnaire sections

Questionnaire sections	Routing
Screening questions	All respondents
Export status	All respondents for initial questions, then mainly asked of exporters only
Results of Service: Activities and outcomes	All respondents
Other Services: Quality and relevance of handover / Comparison against other organisations	Routing dependent on outcomes from specified interaction with DBT.
Customer Experience: Harmonised measures of quality / Barriers	Mixture of ask all, questions only asked of certain service types and dependent on previous survey answers.
Firmographics	All respondents
Advertising: Advertising and awareness	All respondents
Recontact and Data linkage	All respondents

3 Sampling

3.1 Development

The sampling process for the ECS remained unchanged from the previous year.

3.2 Sample sources

The ECS sample is drawn from records of business interactions with DBT services, collated by teams within DBT.

Twelve eligible services were included in 2022/23. The Overseas Business Network Initiative (OBNI) was removed as an eligible service in the 2022/23 survey. The Export Support Service – Service Delivery Centre (ESS-SDC) was introduced as an eligible service for the first time in the 2022/23 survey. ESS-SDC service deliveries were only recorded for the ECS if escalated through Policy Hub and EU MAC queries.

Each month, DBT supplied Ipsos with Excel or .csv files containing these records. There were eight source files in total covering the various services in scope for the ECS, with records for a number of services provided in a single extract from DBT's Data Hub system, a database and reporting system designed to consistently record information across DBT teams.

Typically, the Data Hub extract covered records for, International Trade Advisors (ITAs), Export and Investment Teams (E&I Teams), Missions, Export Academy, Webinars, and Business Profiles.[3] Records for the remaining services in scope for the ECS – Overseas Market Introduction Service (OMIS), Export opportunities, Enhanced Support Service – International Markets (ESS-IM)[4], Export Support Service – Service Delivery Centre (ESS-SDC) (referrals only) and Selling Online Overseas (SOO) – were provided separately each month, in line with previous years where appropriate.

With many services recorded through Data Hub, it was necessary to develop rules for identifying which records referred to each service (see Eligibility, below).

3.3 Eligibility

The following services were eligible for the ECS from April 2022 to March 2023:

- Selling Online Overseas (SOO)
- Overseas Market Introduction Service (OMIS)
- Business Profiles

[3] For various reasons, additional separate extracts were provided for Webinars and Business Profiles. The records in these files were then checked, and where necessary deduped against, the equivalent records included for these services in the Data Hub extract.

[4] Some ESS-IM service delivery records were provided through the Data Hub extract. Following an adjustment of the eligibility mapping during fieldwork, approximately 40% of the ESS-IM records that had previously been recorded as eligible were retrospectively recorded as ineligible, and 52 completed ESS-IM interviews were removed from the data.

- Missions
- Export and Investment Teams
- Export Opportunities
- Posts
- International Trade Advisors (ITAs)
- Webinars
- Export Academy
- Enhanced Support Service – International Markets (ESS-IM)
- Export Support Service – Service Delivery Centre (ESS-SDC) (referrals only)

Not all these services have been eligible for the ECS in previous years. Table 3.1 shows the year in which each service that was eligible in 2022/23 was first introduced into the ECS.

Table 3.1 Year in which DBT services were first introduced into the ECS

Service	Year
Selling Online Overseas (SOO)	2018/19
Overseas Market Introduction Service (OMIS)	2018/19
Business Profiles	2018/19
Missions	2018/19
Export and Investment Teams	2018/19
Export Opportunities	2018/19
Posts	2018/19
International Trade Advisors (ITAs)	2018/19
Webinars	2018/19
Export Academy	2021/22
Enhanced Support Service – International Markets (ESS-IM)	2021/22
Enhanced Support Service – Service Delivery Centre (SDC)	2022/23

For the records included in the Data Hub extract, the specific service was identified from a combination of variables: the ‘DBT team’, ‘DBT team role’, ‘service delivery’ and ‘subject’ fields (see appendix). Typically, around half of the records in the Data Hub extract were not mapped to a service in scope for the ECS.

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.

3.4 Building the sample frame

It is common for a business to receive more than one of DBT'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 in 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.

Table 3.2 shows the number of records shared by DBT each month. These figures include duplicate and ineligible records, that were removed from the sample before fieldwork.

Table 3.2 Number of records shared by DBT per month

Month	Number of records shared by DBT
April 2022	3,530
May 2022	5,582
June 2022	5,943
July 2022	4,765
August 2022	6,836
September 2022	4,233
October 2022	7,594
November 2022	10,748
December 2022	5,446
January 2023	7,033
February 2023	7,592
March 2023	10,884
Total	**80,186**

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, Ipsos 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, Ipsos 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, Ipsos 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'[5] 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 and the occurrence of false positives and false negatives were both well below one percent of the total records matched.

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), Ipsos 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), Ipsos 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

[5] '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.

3.5 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, for all months of the 2022/23 survey fieldwork, *all* of the businesses that were eligible were included and issued, so no sampling of businesses was required.

To increase the sample size for the four less frequently used, and so higher priority, services (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 Table 3.3). So for example, if a business had received both Posts (loading = 1) and Export and Investment Teams (loading = 2) in March 2023, 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

Service	April 2022 to September 2022	October 2022 to March 2023
Selling Online Overseas	1	1
OMIS	1	1
Business Profiles	1	1
Missions	1	1
Export and Investment Teams	1.5	1.5
Export Opportunities	2	2
Posts	1	1.25
ITAs	1	1
Webinars	1.25	2
Export Academy	1.25	1
ESS-IM	1.25	1.5
ESS-SDC	1.5	1

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 DBT and the survey itself – such as date of interaction, which DBT service was used, and the purpose of the research. They also provided businesses with an opportunity to contact Ipsos to ask any questions or opt out of taking part the research.

The survey was administered by Ipsos's team of specialist business interviewers. 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). The findings report covers DBT services delivered between April 2022 and March 2023.

4.2 Response rates

Table 4.1 below shows response rates achieved for the QS for April 2022 to March 2023 sample. Overall response rates have been calculated using the American Association for Public Opinion Research standard definitions[6], 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. A response rate of 27% was achieved for interviews conducted during this period[7].

Table 4.1 Fieldwork outcomes April 2022 to March 2023 sample[8]

Fieldwork Outcome	Number of cases *(N)*
Number of cases issued	18,685
Live sample – not interviewed or partial contact	6,300
Deadwood (e.g. uncontactable phone numbers)	4,062
Refusal	4,308
Ineligible	6
Complete interview	3,999
Response rate	27%

[6] https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx
[7] Response rate = (complete interviews / (complete interviews + partial interviews + refusal and break off + non-contact + other + (estimated proportion of cases of unknown eligibility that are eligible) x (unknown eligibility non-interview))
[8] This table provides the total completed interviews once fieldwork had been completed. Roughly 23% of ESS-IM service deliveries were removed from the sample for service deliveries between April 2022 and November 2022 following an eligibility remapping during survey fieldwork. 52 completed ESS-IM interviews were therefore removed from the fieldwork data. Their responses are not included in the above breakdown of completes nor in the main report findings.

4.2.1 Response rates for each DBT service

Table 4.2 below breaks down the response rates by each product or service.

Table 4.2 Response rates April 2022 to March 2023 sample

Case Outcomes	SOO	OMIS	Missions	Business Profiles	E&I Teams	ESS-IM	Export Opportunities	Posts	ITAs	Webinars	ESS-SDC	Export Academy	Total
Number of cases issued	74	94	935	105	1,416	1,773	179	3,112	4,928	1,714	729	3,626	**18,685**
Complete	18	13	195	19	245	319	25	509	1,277	362	103	914	**3,999**
Complete - CATI	18	13	195	19	246	317	25	507	1,270	362	103	911	**3,986**
Complete - Online	0	0	0	0	0	2	0	2	8	0	0	3	**15**
Response rate	29%	16%	23%	20%	18%	18%	17%	16%	27%	21%	15%	28%	**27%**

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 DBT services in the survey period (April 2022 to March 2023). 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 DBT 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 DBT service in the survey period for a range of measures.

The measures that were included in the calibration weighting (Tables 5.1.1, 5.1.2, 5.1.3 and 5.1.4) were:

- Counts of the number of businesses receiving each service in the survey period
- Counts of the number of businesses receiving a DBT service each month
- The number of interactions that each business had a DBT 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 (n = 36,322); whereas the last two measures were counts for the total number of businesses (n = 18,685). 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:

$wt\_sel = \Sigma_i\Sigma_j (W_{ij}Z_{ij}) / \Sigma_j (W_{kj}Z_{kj})$

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

The measures that were included in the calibration weighting (Tables 5.2.1 and 5.2.2) were:

- The number of services received by month, quarter or in total
- Whether a business had received a DBT 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 least common services (Selling Online Overseas, OMIS, Business Profiles, Missions, Export and Investment Teams) 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 DBT 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 DBT 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:

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

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. Tables 5.3.1 and 5.3.2 show estimates of the impact of the weighting on the precision for analyses of the businesses, and for each separate service, as both effective sample sizes and design effects. 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.

Table 5.1.1 Business-level weights: population totals and sample profile - Number of services received

Service	Population (n)	Population (%)	Sample (n)	Sample (%)
Selling Online Overseas (SOO)	126	0.3%	24	0.3%
OMIS	186	0.5%	28	0.3%
Business Profiles	174	0.5%	24	0.3%
Missions	1,728	4.8%	425	5.0%
Export and Investment Teams	2,364	6.5%	445	5.2%
ESS-SDC (referrals only)	1,516	4.2%	311	3.6%
ESS-IM	2,737	7.5%	377	4.4%
Export Opportunities	421	1.2%	54	0.6%
Export Academy	6,671	18.4%	1,952	22.8%
Posts	6,933	19.1%	1,289	15.0%
Webinars	3,478	9.6%	863	10.1%
ITAs	9,988	27.5%	2,782	32.4%
Total	36,322	100%	8,574	100%

Table 5.1.2 Business-level weights: population totals and sample profile: Number of services received each month

Month	Population (n)	Population (%)	Sample (n)	Sample (%)
April 2022	1,768	4.9%	332	3.9%
May 2022	2,685	7.4%	522	6.1%
June 2022	3,048	8.4%	626	7.3%
July 2022	2,226	6.1%	488	5.7%
August 2022	2,948	8.1%	630	7.3%
September 2022	3,071	8.5%	697	8.1%
October 2022	2,444	6.7%	704	8.2%
November 2022	4,258	11.7%	1,080	12.6%
December 2022	2,462	6.8%	659	7.7%
January 2023	2,948	8.1%	721	8.4%
February 2023	3,364	9.3%	857	10.0%
March 2023	5,100	14.0%	1,258	14.7%
Total	36,322	100%	8,574	100%

Table 5.1.3 Business-level weights: population totals and sample profile: Number of business-level interactions with DBT

Number of business-level interactions with DBT	Population (n)	Population (%)	Sample (n)	Sample (%)
1	13,661	66.2%	2,193	54.8%
2	3,462	16.8%	782	19.5%
3	1,520	7.4%	411	10.3%
4 or more	2,002	9.7%	615	15.4%
Total	20,645	100%	4,001	100%

Table 5.1.4 Business-level weights: population totals and sample profile: Number of services used by each business

Number of services used by each business	Population (n)	Population (%)	Sample (n)	Sample (%)
Single service	16,126	78.1%	2,813	70.3%
2 or more services	4,519	21.9%	1,188	29.7%
Total	20,645	100%	4,001	100%

Table 5.2.1 Service-level weights: population totals and sample profile: Number of services received (by time period)

Service	Population (n)	Population (%)	Sample (n)	Sample (%)
Selling Overseas Online	126	0.3%	18	0.4%
OMIS	186	0.5%	13	0.3%
Business Profile	174	0.5%	19	0.5%
Missions	1,728	4.8%	195	4.9%
Export and Investment Teams	2,364	6.5%	246	6.1%
ESS-SDC (referrals only)	1,516	4.2%	103	2.6%
ESS-IM: Q1	379	1.0%	47	1.2%
ESS-IM: Q2	640	1.8%	82	2.0%
ESS-IM: Q3	823	2.3%	89	2.2%
ESS-IM: Q4	895	2.5%	101	2.5%
Export Opportunities	421	1.2%	25	0.6%
Export Academy: Q1	742	2.0%	98	2.4%
Export Academy: Q2	947	2.6%	158	3.9%
Export Academy: Q3	1,937	5.3%	277	6.9%
Export Academy: Q4	3,045	8.4%	381	9.5%
Posts: Q1	1,842	5.1%	119	3.0%
Posts: Q2	1,556	4.3%	110	2.7%
Posts: Q3	1,562	4.3%	125	3.1%
Posts: Q4	1,973	5.4%	155	3.9%
Webinars: Q1	942	2.6%	124	3.1%
Webinars: Q2	1,286	3.5%	89	2.2%
Webinars: Q3	786	2.2%	93	2.3%
Webinars: Q4	464	1.3%	56	1.4%
ITAS: April 2022	613	1.7%	79	2.0%
ITAS: May 2022	789	2.2%	94	2.3%
ITAS: June 2022	798	2.2%	96	2.4%
ITAS: July 2022	546	1.5%	67	1.7%
ITAS: August 2022	645	1.8%	93	2.3%
ITAS: September 2022	836	2.3%	117	2.9%
ITAS: October 2022	953	2.6%	147	3.7%
ITAS: November 2022	987	2.7%	137	3.4%
ITAS: December 2022	752	2.1%	102	2.5%
ITAS: January 2022	908	2.5%	104	2.6%

Table 5.2.2 Service-level weights: population totals and sample profile: Number of months that services were received

Number of months that services were received	Population (n)	Population (%)	Sample (n)	Sample (%)
Used DBT service in single month	13,661	37.6%	2,193	54.8%
Used DBT service in more than one month	22,661	62.4%	1,808	45.2%
Total	36,322	100%	4,001	100%

Table 5.3.1 Estimated design effects and effective sample sizes: Company-level weights

Weight	Sample size	Design effect	Effective sample size
Company-level weight	4,001	1.11	3,590

Table 5.3.2 Estimated design effects and effective sample sizes: Service-level weights

Service	Sample size	Design effect	Effective sample size
Selling Online Overseas (SOO)	18	1.79	10
OMIS	13	1.39	9
Business Profiles	19	1.06	18
Missions	195	1.50	130
Export and Investment Teams	245	1.27	194
ESS-SDC (referrals only)	103	1.23	83
ESS-IM	319	1.05	303
Export Opportunities	25	1.11	23
Export Academy	914	1.34	684
Posts	509	1.37	372
Webinars	362	1.49	243
ITAs	1,277	1.45	884
All	3,999	1.44	2,772

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 1,000 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

Estimates (%)	100 interviews	500 interviews	1000 interviews
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 +/- (1.96 x 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 statistically significant at the 95% probability level. For single-code (scale) variables, a two-tailed t-test was used to calculate significance. For multi-code (categorical) variables, an overlapping variables z-test was used.

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.

A small number of interviews were conducted online using Computer-Assisted Web Interviewing (CAWI). These interviews were also manually reviewed for quality assurance before their data was combined into the overall dataset. No interviews that were completed online were removed from the final dataset as a result of quality assurance checks.

Ipsos produced datasets using SPSS. The dataset was checked and cleaned by researchers within the Ipsos 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 'Qlikrec' which was used to calculate the Net Promoter Score (NPS) for each export product or service[9]. 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

[9] Annex B of this reports details specific wording of questions, as asked in the survey.

allowed participants to choose more than one response option. All figures shown in the main report are weighted.

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. Services with a base size below 100 have not been included in the published report. Some services can be split into regions: where they have a base size below 100 these have been redacted. Additionally, an option response to a question fewer than 10 have also been redacted. In applying this threshold, we can interpret the findings with greater confidence and preserve confidentiality.

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 Ipsos and DBT 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

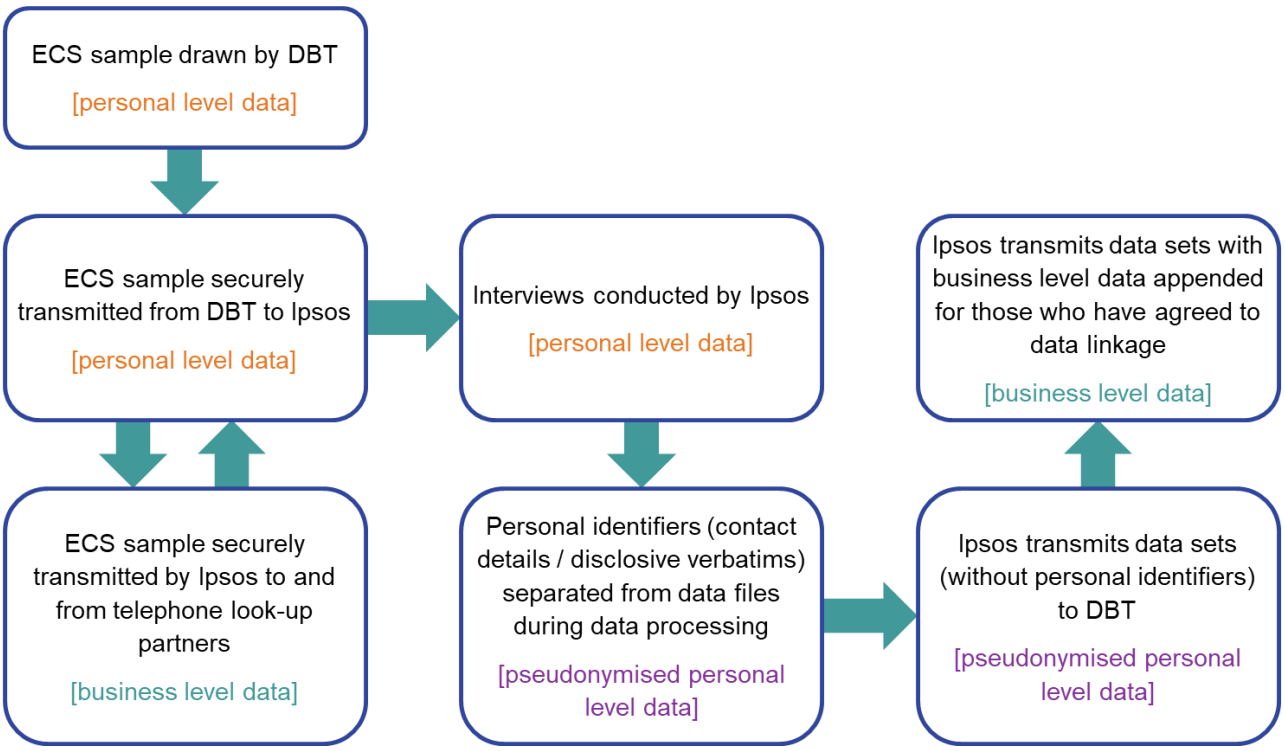
Each month, the ECS sample is drawn by DBT and then securely transferred to Ipsos and stored in line with the requirements of the 2018 Data Protection Act and GDPR. The data security procedures in place minimise the risk of data loss and ensure that respondents' confidentiality is protected at all times. Ipsos 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, Ipsos 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 DBT ECS datasets before they are transmitted outside Ipsos (to DBT). All reporting is non-disclosive, including any presentations of findings, toplines and reports.

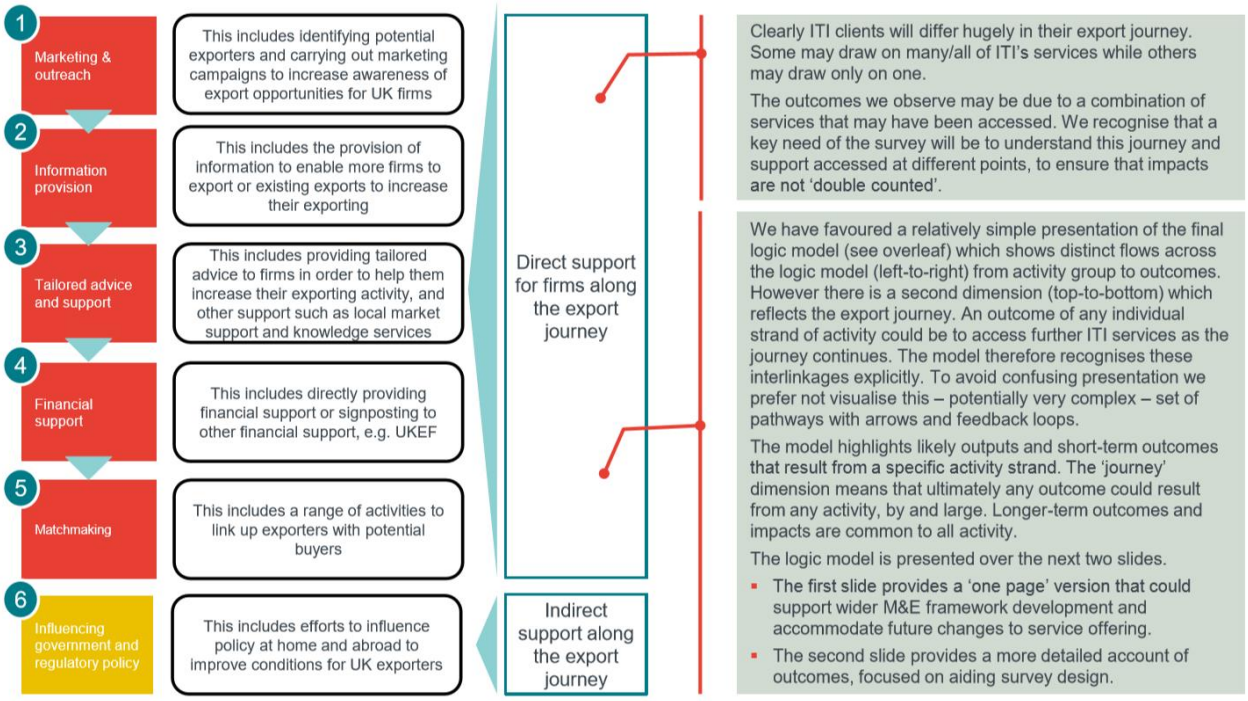
The data is stored and deleted according to the requirements of the UK General Data Protection Regulation (GDPR) and the UK Data Protection Act (DPA) 2018 and the Market Research Society Code of Conduct. Network personal data files are deleted within 12 months of project closure. For an overview of the data processes detailed above, 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 the ECS questionnaires. It focussed on services provided by the International Trade and Investment Group within DBT. The International Trade and Investment (ITI) Group is the most substantial element of the three DBT business areas which make up the Department's expenditure. Before the foundation of the then Department for International Trade, ITI was known as UK Trade and Investment (UKTI), a non-ministerial government department.



Clearly ITI clients will differ hugely in their export journey. Some may draw on many/all of ITI's services while others may draw only on one.

The outcomes we observe may be due to a combination of services that may have been accessed. We recognise that a key need of the survey will be to understand this journey and support accessed at different points, to ensure that impacts are not 'double counted'.

We have favoured a relatively simple presentation of the final logic model (see overleaf) which shows distinct flows across the logic model (left-to-right) from activity group to outcomes. However there is a second dimension (top-to-bottom) which reflects the export journey. An outcome of any individual strand of activity could be to access further ITI services as the journey continues. The model therefore recognises these interlinkages explicitly. To avoid confusing presentation we prefer not visualise this – potentially very complex – set of pathways with arrows and feedback loops.

The model highlights likely outputs and short-term outcomes that result from a specific activity strand. The 'journey' dimension means that ultimately any outcome could result from any activity, by and large. Longer-term outcomes and impacts are common to all activity.

The logic model is presented over the next two slides.

- The first slide provides a 'one page' version that could support wider M&E framework development and accommodate future changes to service offering.
- The second slide provides a more detailed account of outcomes, focused on aiding survey design.

Annex B – Quality survey weight map

Variable	Weight
Qexportstatus	weight_business
Qexportstatus2	weight_business
Qexportfuture	weight_business
Qyearsell	weight_business
Qcurexp	weight_business
Qcurexpeur	weight_business
Qcurexpna	weight_business
Qcurexpla	weight_business
Qcurexpas	weight_business
Qtypexp	weight_business
Qonexp	weight_business
Qresult	weight_service
Qcontact	weight_business
Qreadiness	weight_business
Qbarrier	weight_business
Qoutcome	weight_service
Qoutcome2	weight_service
Qrelserv	weight_service
Qrelorg	weight_service
Qsathand	weight_service
Qreg	weight_service
Qevent	weight_service
Qfindinfo	weight_service
Qupdate	weight_service
Qknowstaff	weight_service
Qcomp	weight_service
Qclarity	weight_service
Qtimetaken	weight_service
Qqualinfo	weight_service
Qresult_1	weight_service
Qresult_2	weight_service
Qresult_invest	weight_service
Qresult_opps	weight_service
Qexoppcontract	weight_service
Qresult_conts	weight_service
Qsatis	weight_service
Qwhydis	weight_service
Qlikrec	weight_service
Qimprove	weight_service
Qknowchange	weight_service
QfirstDIT	weight_business
QContDIT	weight_business
QcontDITOth	weight_business

QDITadaware	weight_business
Qturnover	weight_business
Qturnexp	weight_business
Qturnexpest	weight_business
Qturnprop	weight_business
Qnumemp	weight_business
Qactivities	weight_business
Qactivities_2	weight_business
Qtradetime	weight_business
Qboardprofile	weight_business
Qboardfemale	weight_business
Qboardethnicity	weight_business