EUROPEAN COURT OF AUDITORS

AUDIT METHODOLOGY AND SUPPORT UNIT

SURVEYS

TABLE OF CONTENTS

FOREWORD

This guideline gives advice on the use of surveys within audits in European Court of Auditors (ECA).

Sections 1 and 2 give a brief introduction to the method, and discuss its main features and when to use it.

Section 3 is a step by step, guide for auditors on how to conduct a survey, including planning the survey, preparing the questionnaire, data analysis and reporting.

Annex I provides a checklist for planning a survey.

Annex II provides a checklist for drafting the questionnaire.

Who to contact	If you feel that the information provided in this document could be improved, please do not hesitate to communicate your suggestions: ECA-AMS.CONTACT@eca.europa.eu.

SECTION 1: INTRODUCTION

What is a survey?

The questionnaire survey is a method of **collecting standardised information** from a number of respondents. It consists of putting a series of standard questions in a structured format, usually to a sample of individuals who are selected as being representative of a certain population under observation. It may also be exhaustive, covering the whole of a population.

Quantitative / Qualitative

Surveys are often used to collect information on **factual** characteristics or behaviours (**quantitative data**) such as people's health, housing, consumer spending or transportation habits, and can also be used to collect **opinions** (**qualitative data**) of those being surveyed, e.g. people concerned by a programme.

This guideline is focused on surveys as part of an audit and using web-based tools.

SECTION 2: USE OF SURVEYS IN AUDITS

Surveys gather Information

Surveys are particularly well suited to the production of descriptive information, namely data to answer questions like: who, what, where, how many, how much? A survey is often used when there is a need for new information, and the available data (e.g. data from previous surveys on the area, information from document research) is insufficient.

They can also be used when complementary information is needed, or when available information needs to be corroborated.

General ideas or Precise information

When the auditor, prior to the survey, does not have clear ideas about the opinions of respondents or the way in which the intervention works, then use some open questions that allow the respondents to answer in their own words.

Questionnaires are most useful when the auditor has a clear and precise idea of what he or she wants to observe. In this case the simplest survey consists of closed questions to which a series of replies are given from a number of predetermined responses.

Opinions (qualitative) or Facts (quantitative)

A survey can ask opinions (e.g. “Do you think the XYZ procedure is cumbersome?”). These data are normally weak as audit evidence.

More frequently, surveys in audits ask about factual data (e.g. “How much time did you spend to prepare the XYZ papers?”, “Did you need help to fill-in the XYZ forms?”, “How long did it take you to get the XYZ payment?”). These data can provide more robust evidence.

Survey or Audit Questionnaire?

The term survey is nowadays associated to **marketing surveys**, which are typically anonymous, qualitative (ask opinions), and answering them is voluntary.

Most of the surveys done in the European Court of Auditors to gather audit evidence are more an **electronic audit questionnaire**. These surveys are **named** (not anonymous) and **quantitative** (ask facts).

Thanks to these characteristics they can provide **quite robust evidence**, because the answers are **verifiable**, and we get very good response rates that ease **extrapolation**.

Extrapolation of results

Surveys can produce results applicable to the whole of the observed "population", either directly if the survey is exhaustive or by generalisation from a sample.

To be able to generalise from a sample this must be of a certain size, and free of biases such as the non-response bias. The size will depend on required precision. Sampling is further explained below in section 3.1.2 SAMPLING.

One common practice is to verify on the spot the veracity of a sample of the answers. To do this the questions must be quantitative.

Can save missions

Sending out a questionnaire is easier than travelling to several countries to interview authorities, project managers or beneficiaries.

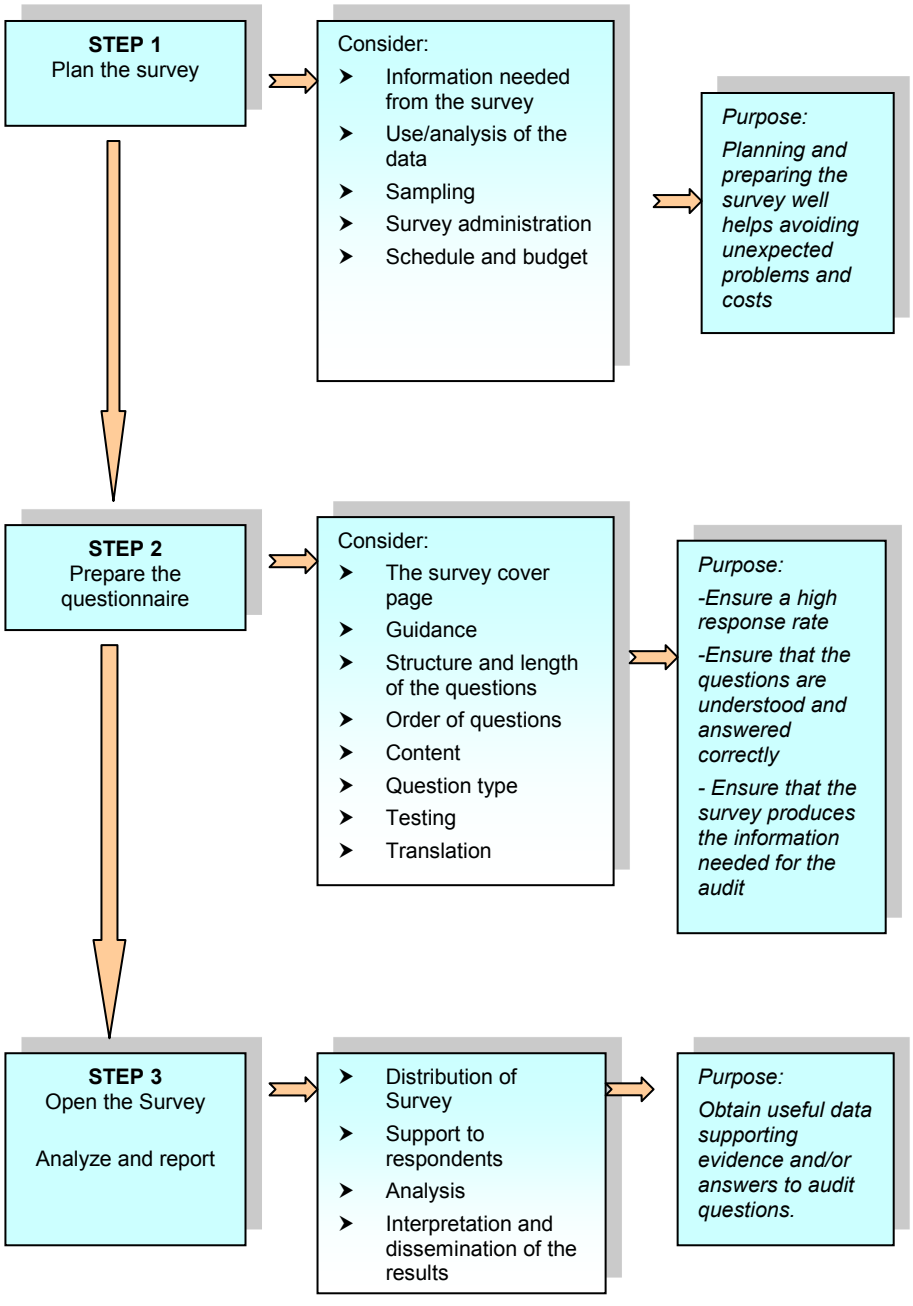
Written responses

One advantage with respect to interviews is that the responses are in writing. This can make survey answers less disputed than minutes from interviews.

SECTION 3: HOW TO CONDUCT A SURVEY

The process can be conducted in 3 main steps, which are explained in the following 3 sections:

Overview



3.1 PLANNING THE SURVEY

Preparation for most surveys will require initial research, sampling, arrangements for the survey administration and consideration of schedule and budget.

Resources

The European Court of Auditors uses a web-based tool for conducting surveys.

Inform authorities

In keeping with the European Court of Auditors' no surprise approach, it is good practice to communicate a planned survey when announcing the audit. It also gives authorities an opportunity to review your survey methodology (e.g. sampling) and to communicate their arguments up front.

Get support to increase the response rate.

To ensure a high response rate, the support of central services will be necessary; this includes Budget DG, the Commissioner responsible for dealing with the audited institutions, and also the hierarchies of each DG involved.

To achieve this, it can be a good idea to **consult relevant DGs at the survey drafting stage**. Communicating with the recipients before delivering the questionnaire is also advisable, so they are informed and prepared for the survey in advance.

Providing data to the European Court of Auditors is mandatory for anyone managing EU funds, and also for beneficiaries[1].

Consider auditee's reaction

It is important to consider how auditees would defend audit observations based on the survey data. Also, the auditees could use positive replies from a survey to defend against critical observations obtained by other audit procedures.

Languages

In practice, surveys can be carried out in English, French and German if the respondents are within the EU institutions and Agencies.

If the respondents are in the Member States, whether they are authorities managing the funds, beneficiaries or citizens in general, the survey has to be translated into their official languages.

3.1.1 INITIAL WORK

The first step is to define the objectives of the survey :

- What are you trying to discover?
- What are the priority areas of information needed?
- What questions will be addressed by the survey?
- What will the output look like, what charts and reports will be prepared?

In a survey collecting data for an audit, it will be necessary to look at the main objectives of the audit and the audit questions.

Similar data available?

Examine other work in the area to be surveyed, to find out whether similar surveys have been carried out recently or whether similar data is available that will provide sufficient information. Also check that for instance the Commission is not about to conduct their own survey in the same area (The Commission does more than 500 surveys a year!).

When relevant, offer the Commission opportunity to add some of their own questions.

It is also vital to discuss key measures and questions with colleagues, experts and/or interest groups. In particular, experts can contribute to design and validate the survey questions and sample. This adds some robustness to the evidence obtained.

Using the results

It is also important to consider how the material is to be used already in the planning stage:

- The design of the questions will decide which analyses can be done afterwards (see section 3.2.3). It is considered good practice to prepare for most of the data analysis at this early stage.
- This includes considering how to group and codify the data (see section 3.3.1), preparing tables for coding the responses, considering which methods to use for analysis, which questions the analysis should answer, which types of charts or graphs are to be produced from the data.

Thorough preparation of the survey in this manner will help drafting the questionnaire, and it will most likely become more apparent which questions are necessary and which will be superfluous for the later analysis and presentation of the data.

[1] **EC Treaty (OJ C 325, 24/12/2002) Article 248 §3 "**[…]The other institutions of the Community, any bodies managing revenue or expenditure on behalf of the Community, any natural or legal person in receipt of payments from the budget, and the national audit bodies or, if these do not have the necessary powers, the competent national departments, shall forward to the Court of Auditors, at its request, any document or information necessary to carry out its task."
Financial Regulation, Article 161: "The Commission, the other institutions, the bodies administering revenue or expenditure on the Union's behalf and recipients shall afford the Court of Auditors all the facilities and give it all the information which the Court of Auditors considers necessary for the performance of its task".

3.1.2 SAMPLING

The population to survey must be defined precisely and available information on the structure of this population must be gathered. One must also check whether the population is identifiable, in which case their names, addresses and telephone numbers are available, or if this information is unknown.

When a sample is used, it constitutes a model of the entire population. In order to be representative, it must be large enough and must comply with precise statistical rules. There is no simple rule for sample size that can be used for all surveys.

The sample size required for a particular survey depends on the statistical quality needed for survey findings, and how the results will be used. Generally, larger samples lead to smaller margins of error.

An important consideration for sample size also is the need to say something about results for sub-groups (e.g. men/women, employed/unemployed, different professions). Then it is necessary to ensure that the sample size in each sub-group is sufficient to provide valid figures from the results.

Several techniques are proposed in **Table 1** for constructing a representative sample.

Table 1. Sampling techniques

Sampling techniques	Principle
Simple random selection	Each observation unit is selected randomly. It has an equal chance of being part of the sample and can be selected only once
Systematic selection	Each 10^{th} or 100^{th} individual or entity is chosen; the first is chosen randomly
Stratified random selection	When the population is not particularly homogenous, it is divided into homogenous sub-groups (strata) and a random sample is then taken in each sub-group (e.g. different nationalities)
Selection by clusters	The population is divided into sub-categories or clusters (groups with the same characteristics); some clusters are chosen randomly and then all the individuals in a cluster are questioned
By quota	A reduced model is constructed, consisting of the known characteristics of the population under study; the researchers then have to find the individuals corresponding to these characteristics, so the sample resembles the population (e.g. the proportion of different nationalities in the population).

If a generalisation of sample characteristics to the population is the aim of the analysis, simple random selection should be used if possible. **All other selection methods** either require specific modifications of the statistical computations, or rule out generalisation in the first place.

It can be useful to consult a statistician for assistance in this process.

3.1.3 SURVEY ADMINISTRATION

For conducting a web-based survey, you will need

- to create a questionnaire
- to prepare a welcome page
- to distribute the survey
- to monitor the survey and manage the problems
- to send out reminders
- to download the results

Welcome page

Drafting of the questionnaire and of the welcome page is discussed in section 3.2. Normally the survey starts with a welcome page which is also hosted on the server of the provider of the survey tool. But sometimes, to stress that the conductor of the survey is the ECA, the welcome page can be placed in the Court's web site eca.europa.eu. On the welcome page the respondents can choose the language for answering the questionnaire, if applicable, and they will be redirected to the actual survey web-page.

Distributing the survey

The content of the invitation letter is discussed in section 3.2.1. If the e-mail addresses of the respondents are known, an electronic invitation letter can be sent. If the addresses are not known or the invitation should be more official, a letter on paper containing the address of the survey welcome page must be sent.

The e-mail addresses of the respondents must be loaded into the survey tool and when needed, personalised invitation letters can be sent containing name of the respondent and/or personalised link and password to access the survey.

Reminders

Often the rate of response in questionnaire surveys can be low and might have to be improved by reminders. After the date set in the invitation letter has expired, send **a first reminder** encouraging the respondents to complete the questionnaire and set a date. Send yet **another reminder** to those still not responding, or telephone if more appropriate. Reminders are very important; they will maximise response rates and help avoid biased results. Web-based survey tool allows to track in real time the number of respondents who have filled in the questionnaire and to manage the process of sending reminders. Special reminders should be prepared for those respondents who have not completed the survey.

It is also good practice to plan for a follow-up letter thanking respondents for their assistance.

Software tools for analysis

Web-based survey tool have variety of options for analysing and presenting the survey data. The answers can also be downloaded in different formats for later analysis with tools chosen by auditors. For small surveys with few respondents, or for short questionnaires, using Excel can be considered. For larger quantitative surveys, consider Access database or SPSS. For analysis of the data, one or a combination of these can be used. For mainly open ended questions Excel or Word can be used.

3.1.4 SCHEDULE AND BUDGET

How much time to plan for the survey will vary depending on the type of survey and the particular situation. A comprehensive survey could take anywhere from a few months to one year, from the initial planning until the results are ready for analysis.

The steps in a survey are not necessarily sequential, many of them can be overlapping, e.g. sampling can be carried out while the questionnaire is being developed. Although the activities are not additive, all of the steps are time-consuming and it is important to consider all the individual stages when making an estimation of the time needed. The planning must, e.g. allow time for follow-ups and responses to reminders.

The budget of the survey depends mainly on the amount of time spent on preparing the questionnaire and analysing the results.

As a rule, **the amount of work needed will increase with the complexity of the questionnaire and the amount of data analysis to be carried out**.

3.2 DRAFTING THE QUESTIONNAIRE

3.2.1 INVITATION LETTER

To invite respondents to answer a web-based survey it is necessary to send them an invitation letter or e-mail. The letter should be well designed, clear, attractive and informative. Make sure that all necessary information is there and correct. A minor error or omission at this stage can result in extra work and time

Information about the ECA

Include short explanation about ECA and maybe some references to the relevant audit reports.

Clear survey purpose

It is important that the **purpose of the survey is clearly explained**. The title should convey what type of information is being collected and there should always be a brief introduction to the survey, either at the start of the questionnaire or in an introductory letter. Also explain definitions that relate to the whole survey.

Potential respondents are more likely to participate if the purpose of the survey is explained to them in a way that demonstrates the value of their contribution. It is a good idea to indicate which audit question(s) auditors are answering with the help of the survey and/or which public services or measures could be improved.

Who, How & When?

To ensure good quality in the responses, it is important that it is clearly explained who should complete the questionnaire and how to complete it.

The invitation letter must also include information about where to address queries, and what is the deadline for answering the questionnaire. The time to offer for the completion of a survey depends on the audience and the nature of the subject. For short surveys asking mainly opinions it should be not much longer than two weeks. But often the survey tool is used to collect factual data, which may not be immediately available. In that case survey can be open for several months.

The indicative time for completion of the questionnaire must be included.

Confidentiality

Where necessary, respondents should be given a guarantee of the **confidential treatment of his/her answers**, or otherwise an explanation should be given of how individual responses might be used.

In certain types of surveys, it can be important to guarantee anonymity for the respondents, especially if some of the questions can be perceived as sensitive. In that case, no personalised questionnaires can be used or personal questions asked, but web-based survey tools still allow for sending reminders to individuals that have not responded.

If the anonymity is not important, consider adding to the questionnaire optional fields for respondent's name and title, so that they can be re-contacted for clarification or follow-up questions.

Feedback

If appropriate, indicate whether the respondents will get feedback of the responses to the survey (in summary form). It is also possible to add a question in the end of the questionnaire, if the respondent wishes to get feedback.

Always say "thank you" both in the cover letter and at the end of the questionnaire.

Retaining a copy

Suggest to respondents to retain a copy of their completed questionnaire, it can be done by adding a link to the last page (*thank you page*) of the survey. Clicking on this link enables respondents to review and/or print their individual responses.

Reminders

Generally you can use the same invitation letter as a reminder, just changing some wording and dates. Normally no more than two reminders should be sent to avoid irritation.

3.2.2 STRUCTURE AND LENGTH

Group the questions into key sections in order to help the respondent to successively focus the different issues. Use of headings can be considered to make this structure clearer.

Welcome page

The welcome page (or Start page) of the survey should include essentially the same information as the invitation letter.

Ordering the questions

The order of the questions is important. The questionnaire should start with interesting questions, questions that are easy to answer, and which do not seem threatening or intimidating to the respondent. This is in order to grab the respondents' attention, and to not put them off so they hesitate to answer the questionnaire.

Also, **the early questions should correspond to the stated purpose of the audit**. Questions that can be perceived as sensitive, or private, should be placed towards the end of the questionnaire. Whether a question is perceived as sensitive often depends on the context and the way in which they are presented.

Background questions about the respondent, or the entity on whose behalf the respondent is answering, should normally be placed at the very end of the questionnaire, unless these questions are decisive as to who is to answer the questions.

If analytical questions about the background of the respondent are crucial for the later analysis of the results, these questions should be put at the beginning, as many questionnaires may be left uncompleted.

Short & to the point

Always aim to keep the questionnaire and questions short and to the point. Respondents may hesitate to answer questionnaires that seem to imply a lot of work. However, longer questionnaires could still be successful when surveying people in their areas of special interest.

Explanations

Consider giving quite detailed explanations about how to answer a complicated table of questions.

It is important to be aware of the fact that many respondents do not read the welcome page or the guidance on filling in the questionnaire. As much as possible of the guidance should therefore be worked into the questions, and "help-texts" in the questionnaire itself.

Avoid technical terms and acronyms which may be not familiar to (some) respondents. If you must use them, spell them out (give a definition) the first time they are used.

Attractive lay out

Do not clutter the page in order to reduce the number of pages. Ensure there is sufficient space so that the questionnaire is pleasing to the eye and easy to follow.

Do not use too many colours or fonts or styles. Use them only if they make questions easier to understand (e. g. emphasizing key words, distinction of the questions and the explanations).

Number of pages

There is no clear answer to the question whether it is better to present a web-based survey in one or more long scrolling pages or in a series of separate pages that do not need scrolling. It can depend for instance on the type of question you have. You will need to split your survey into multiple pages, if you want to use branching. But refrain from just having one question per page as this would increase the time to complete the survey and increase the chances for "drop outs".

3.2.3 CONTENT

It should also be noted that questions requiring respondents to recall past events, situations and decisions are usually considered problematic, as are 'double negative' questions. It is absolutely vital to ensure that questions cannot be misunderstood by respondents.

One question at a time

Always ask one question at a time. Be aware of words like "and" or "or" in the questions, which may signify that more than one question in reality is being asked. For example, if the respondent is asked if he or she "drinks and smokes", these will for many people be two different issues, and they may find it difficult to give an appropriate answer.

Exhaustive answer categories

It is important that the answer categories are exhaustive, so that all respondents are able to find an answer that they feel is appropriate for them. Remember that "Don't know", "Not applicable" or "Do not wish to answer" also are relevant alternatives. If respondents do not find a potential answer which is relevant to them, they might skip the question, or they may choose an answer which is not relevant.

Clear & unambiguous questions

Questions need to be stated clearly and unambiguously. It is important that the questions will work; otherwise the data will be incomplete and unreliable. The shorter the question, the less confusing and ambiguous it will be for the respondent.

It is important to **make sure that specific terms are well defined and unambiguous and that these terms are used consistently throughout the questionnaire**. Where comparisons with other data sets, particular attention also has to be paid that the terms used in the questionnaire are coherent with the other data sets.

Easy to answer

Consider, how easy or difficult is it for the respondent to provide information on each topic. If it is difficult, think of another way to obtain the information by asking different questions.

Using compulsory questions

In the case of web-based surveys there is a possibility to define questions which are compulsory to answer. Using compulsory questions will likely increase the number of people who drop out of a survey in the middle. If appropriate, make sure the available options include all possible answers e.g. like "don't know", "not applicable".

Branching

Branching, also called skipping or routing, allows respondents to be routed to different pages depending on their answers. Branching can be used to individualise the survey and to collect data specific to individual respondents.

Purpose of questions

Questions might have different aims, e.g. to survey opinions, to examine behaviour or to find out facts. It is important to be clear about the purpose of the question and the type of information you are requesting, in order to formulate the questions in the appropriate way. Some examples are given **in table 2**.

Table 2. Types of information requested

Questions on	Examples
Opinions, view, expectation, satisfaction	What do you think about…? How well do you think … worked?
Behaviour	Do you use…? Have you used… during…? Will you use…?
Facts, demographics	Are you…? What is your…? Where do you…?

Levels of measurement

The questions can also be at **different levels of measurement**, depending on how the data is to be used. The level of measurement refers to the relationship among the values that are assigned to the attributes for a variable. Knowing the level of measurement helps you decide how to interpret the data from that variable.

Second, knowing the level of measurement helps you decide what statistical analysis is appropriate on the values that were assigned **(See table 3)**:

Table 3. Levels of measurement

Levels of measurement	Examples
Nominal	*Which nationality are you: Danish, French, German, etc?* Here the categories are mutually exclusive, but it is not possible to rank the alternatives. For purposes of analysing the results of this variable, we can arbitrarily assign the values 1 = Danish, 2 = French, 3 = German, etc to the categories. In this case, the numbers are simply codes for the lengthier text terms; it does not mean that higher value means more or less of something.
Ordinal	*What is your highest completed level of education: less than primary education, primary education, secondary education, tertiary education?* The categories are here mutually exclusive, but also possible to rank in some order of importance. The attributes might be coded 0 = less than primary education, 1 = primary education, 2 = secondary education, 3 = tertiary education. In this measure, higher numbers mean *more* education, but do not say anything about the distances between the numbers. The distance between 0 and 1 is not equal to the distance between 2 and 3.
Numeric	*How many days of training did you receive?* Here the answers will be a number of days, and it is possible to rank the answers from absolute values. The distance between the values is meaningful, and there is always an absolute zero. Because of this, it makes sense to say that someone had twice as many days of training than someone else, and it makes sense to calculate the average of the variables. It will also be possible to do different statistical calculations on the number of days of training received.

It is important to recognise that there is a level of hierarchy implied in the levels of measurement. In general, it is desirable to have a higher level of measurement, because this enables more calculations to be done on the data. Advanced statistics require a numeric level of measurement. Variables should always be defined with levels of measurement in mind since it is going to affect how well you can analyse the data later on.

No leading questions

Finally, it is essential to ensure that **the way the questions are put does not influence the way the respondents answer**. The question should not be leading, meaning that it influences respondents to answer in a certain way.

It is important to be aware that common views on what is appropriate or socially desirable can influence the way respondents answer. Most people want to be viewed as socially agreeable, and tend to give answers that are perceived as socially acceptable.

Example: an example can be seen in the relationship between the amount of beer the breweries report that they produce and the amount of beer people report that they drink. The breweries produce a lot more beer than people report drinking.

Neutral wording

This should be kept in mind when wording the questions, to keep them as neutral as possible. A technique is to reverse the order of the alternative answers, to make the respondents read through the least 'socially acceptable' alternatives before making a choice.

Make sure that your questions don't begin with statements like 'Do you think that …' or 'Would you say that …' and so on.

3.2.4 QUESTION TYPES

Questions can be divided into two main types: **open and closed**. Open questions allow the respondents to answer in their own words. Closed questions are questions where the respondent can choose between a limited number of pre-set answers. **Each format serves a specific purpose** and will collect information in a special way. In order to decide which is the most appropriate, the type of information needed will have to be considered. Is the purpose to generate ideas or is it to collect facts and figures? Also, **how the data will be used** is an important consideration in deciding whether to generate quantitative or qualitative data.

Open questions

Open questions are used when the response does not fit into a closed question, and when you are trying to **explore the area**. They are mainly used to generate **qualitative information**: to collect ideas, individual views and opinions. Open ended questions can work well with populations consisting of specialists in their fields. But as a rule, be careful with open-ended questions since they are often skipped by the respondents because they involve more consideration. The need to codify answers after the data is collected, may also cause difficulties regarding interpreting and comparing the answers if respondents raise very different issues from each other.

If correctly formulated and codified, open questions can provide interpretation for closed questions. You can also use the responses for quotations in the final report where appropriate.

Allow space for long replies. At the end of the questionnaire leave a space (open question) entitled "Other comments". Sometimes respondents offer useful remarks or cover some areas which you did not think of but which respondent consider critical.

Closed questions

Closed questions commonly provide **a fixed list of alternative responses**. They also include numerical responses, such as the number of items, or annual costs. Instructions on how to answer the question should always be provided. Where appropriate, provide boxes to tick and instructions on how many boxes to tick. For example, *'tick one only'*, *'tick the most appropriate'*, and *'tick all that apply'*.

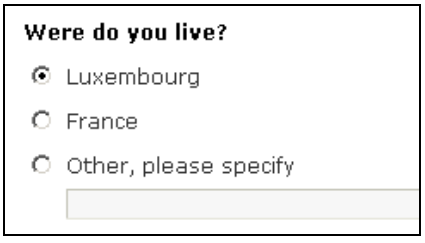
Most questionnaires are designed to ask primarily closed questions. Still many combine these with a small number of open questions, or semi-open questions, which give a list of options with the answer "other" included, to allow respondents to give other opinions/answers to those envisaged by the auditor. This can be a useful way of ensuring that issues overlooked by the auditor at the outset are not excluded from the eventual analysis if they emerge as being important for the addressees of a programme.

When developing closed questions, **open questions are often the starting point**. By interviewing relevant people, or experts on the area, a range of relevant answers will emerge. These can then be categorised and turned into a list of alternative answers, at the level of detailed needed.

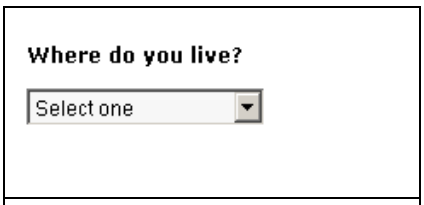
Closed questions can be designed in several different ways, depending on the purpose of the question and how the answers are to be used:

Single response

A single response question has a short list of pre-set options where only one option is applicable. Usually there is a **radio button** for each option. Unless the response is obvious, such as Yes or No, clarify the response required. For example, add 'please click only one button' to the question.

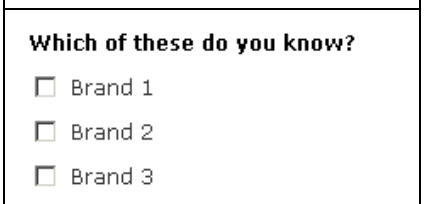


The single response questions can also be presented as **drop-down lists.** Their use can reduce scrolling through long response lists. But the respondents cannot see all of the options at the same time and this can bias the results. So it is advisable that the response set in the drop-down lists should be already familiar to the respondents.

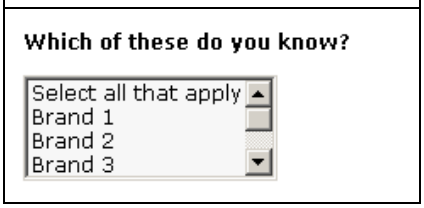


Multiple response

A multiple response question looks mostly like a single response question, but more than one option can be selected. Mostly **check boxes** are used. Again, the response required needs to be clarified. For example, add 'check all that apply'. More work is usually required to handle and analyse multiple response questions, depending on what software is used.



Multiple response question can be also presented as a **list box**. The minimum and/or maximum number of chosen items can be limited. In case the list is long and must be scrolled, the same problems can arise as with drop-down lists.



Ranking

A ranking question can look like a single or multiple response question, but it is very different. It is asking the respondent **to rank the order of importance from a list of options**. Web-based survey tool automatically prohibits assigning the same ranking more than once.

Rating scales

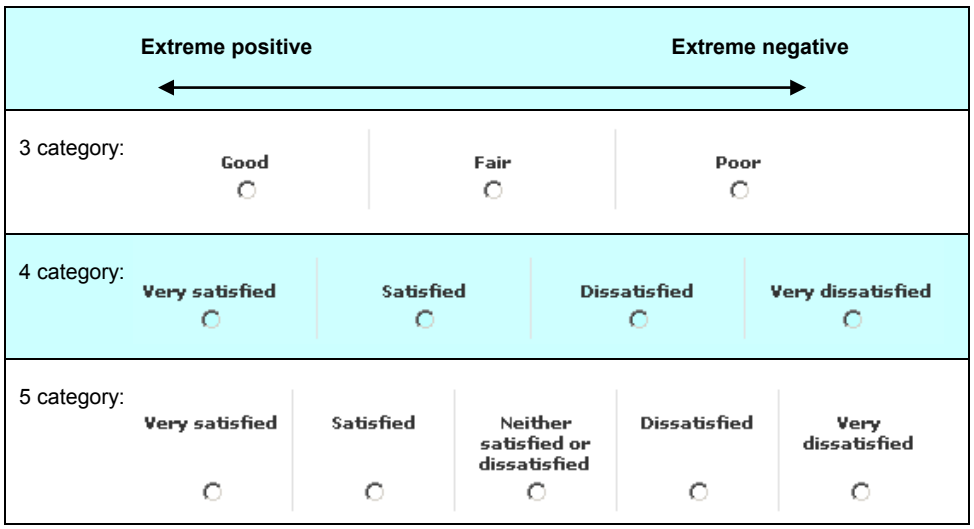
Scales are commonly used in surveys to **rank or score attitudes**. Usually between three and seven point scales are sufficient. Include a 'not applicable' option if there is a chance that the question may not apply to some respondents. When setting questions with assessment responses, it is important that the **scales are symmetric**

If the response options are not symmetric, the responses will be biased. When symmetry is used, whether for an odd or even number of scores, the scores can be assigned rank numbers for 1 to n, where n is the number of the scores. Then an average mean or median score can be calculated.

Many researchers suggest that the scale should have odd number of scores so that the neutral position can be chosen. Respondents who want to give a neutral answer but are not able to do that may leave the question blank or quit the survey.

The appropriate number of scores on the scale depends on the background of the respondents. The fewer specialists there are in the area, the fewer the scores on the scale. For scales to be comparable, they should have the same number of scores. “4” on a 5-point scale is not equal to “8” on a 10-point scale.

Giving a **verbal label** to each point on a scale, instead of just the end points, will usually **yield higher-quality data**, though this may not be practical when there are more than five points on the scale.



Agreement scales

The scales which ask about how much respondent agrees or disagrees with some statement may give biased results as people tend to pick agreeing answers.

Matrixes

If you have long series of questions with identical answer choice lists, it is possible to use matrixes (grids). Although they are a bit harder to understand for some people than the repeated lists. Matrixes can contain radio buttons, check boxes or text boxes.

Do you agree, disagree or have no opinion that this company has:

	Agree	Not Sure	Disagree
A good vacation policy	○	○	○
Good management feedback	○	○	○
Good medical insurance	○	○	○
High wages	○	○	○

Value

Only ask for absolute values when you need exact information for your analysis and when you are sure most respondents can provide accurate information.

Instead of asking for exact values, it might be a good idea to **ask for the value group, or interval of values**. This becomes a single response question. Ensure clear and distinct group headings are given, for example use 0 to 9, 10 to 19 and not 0 to 10, 10 to 20.

In what age group are you?

- ○ 16 - 25
- ○ 26 - 35
- ○ 36 - 45
- ○ 46 - 55
- ○ 56 - 65
- ○ 65 and over

Dates and time periods

You rarely need exact dates. It is hard for a respondent to remember exact times. **Consider whether broader information will do**. For example, give several options in the question.

Also, people tend to under-report less prominent or more distant past events. It can be useful to encourage respondents to use personal schedules, insurance records and other sources to help them remember.

3.2.5 ADDITIONAL FEATURES IN THE SURVEY TOOL

Features mentioned here may be not available in other tools than Checkmarket.com, or they can be named differently.

Extraction

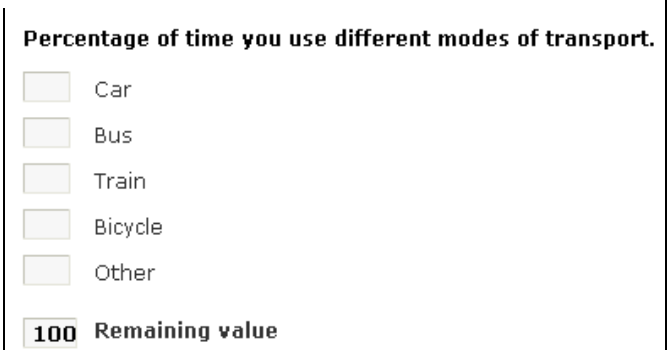
Extraction is the ability to select which questions and/or response options to display, based on the responses given to previous questions.

Piping

Piping allows placing the answer from one question into the text of a subsequent question.

Constant sum

When asking values for each choice in the list the survey tool can check that the values add up to the value specified (e.g. percentages must add up to 100%).



3.2.6 PILOT TEST

In the process of developing the questionnaire, the questions should be tested on colleagues, experts or other advisors. When the questionnaire is produced, **it is advisable to run a pilot survey of the questionnaire** on a limited number of respondents. It provides a critical view of the form and content of the questionnaire, and makes it possible to assess its relevance.

Preliminary results

Running the pilot study can also give **a preliminary indication of the likely results** of the full survey and the likely response rate. In addition it gives an opportunity to test processing and analysis methods. When the pilot study is completed and relevant conclusions are drawn, the final version of the questionnaire can be drawn up and the processing and analysis methods can, if necessary, be adjusted.

Commonly, **a pilot survey will sample around 30 cases**, depending on the size of the survey. Make sure that the pilot test includes a sampling method that you will use in practice. Also test with the auditee (Commission) and with an expert in that field (if not the same).

Live monitoring

It is also recommended to monitor live results as the survey progresses. This can help to discover any problems that did not appear during the testing.

3.3 DATA ANALYSIS AND REPORTING

3.3.1 CODIFYING THE DATA

Check Responses

Always check responses for **completeness and correctness**. In the survey tool there are possibilities to use data validation of the answers, but still the table of responses needs to be reviewed to discover implicit errors or inconsistencies.

In some surveys, it is possible to contact respondents to correct any queries arising from these checks. **If a response cannot be cleaned, it will have to be excluded as missing data**. At this stage, adjustments are generally made to take into account imperfections in the sample, and especially to correct the bias introduced by non-answers (see section 3.3.2).

Create a code-list

The standard way to analyse open-ended questions is to **create a code list from the replies**. This is usually done manually by looking at the responses in the first 50 questionnaires. The different responses are listed, and similar answers are identified and **grouped into conceptual categories** at the level of detail or precision needed (e.g. positive/negative/neutral).

This technique **gives insight into the range of answers** given and the **most frequent answers**. Then a coding list is created from them. The code list may be quite long, perhaps 20 different responses. This list is then applied to the responses in all the questionnaires and each response is coded accordingly.

3.3.2 INTERPRETING AND DISSEMINATING THE RESULTS

The final stage is to conduct an analysis of the meaning of the survey results. This involves understanding the purpose of the survey and its limitations - for example, constraints related to sample size, the reliability of the responses.

Response rate

Another important aspect is the response rate. It may vary depending on the difficulty of the context. A high rate of response can be 60% and up, depending on whether the targeted group is obliged to answer or not, and whether the topic is of interest to the survey population. If the response rate is as low as 30-50%, the low response needs to be highlighted in use of the survey results. If the response is below 30%, the results from the survey should generally not be used.

Survey errors

Errors in surveys can result from the method of selecting the respondents (sampling errors). A sample can only provide an estimate of the population. If the sample has been selected using random sampling methods then a range of error can be placed around the estimate. This is called "the margin of error" and is a measure of a survey's uncertainty.

Non-sampling errors are often more critical, because often they can not be quantified or corrected. These errors can be due to incorrect completion of the questionnaire, either through misunderstanding or response error. The data could be inappropriately quantified. **Always run checks in the analysis to find any unlikely results that could indicate some form of survey error**. When an error is found, you will need to correct it or exclude the data from the analysis.

Summary tables

Review summary tables for each question. Cross-tabulations often summarise responses against key groupings, for example by region or by occupation. Examine the tables to consider which summary results should be used for the report.

Question: How often did you consult your doctor during the last year? (per cent)

Age	Never	Once	2-6 times	7 or more times	Don't know
16 – 25	25	45	20	3	7
26 – 35	24	48	18	5	5
36 – 45	21	50	22	6	1
46 – 55	16	54	24	5	3
56 – 65	13	53	26	6	2
66 – 75	8	46	32	8	6
76 and over	8	40	34	10	8

'Don't know'-answer

It is often more balanced to include all types of response including the 'don't know'-answers in the analysis. If it is interesting to know peoples' opinion on a specific matter, like 'yes' or 'no' in an opinion poll, it would also be interesting to know how many have not made up their mind and have answered 'don't know'.

But, for some questions, it may be more appropriate to exclude 'don't know' from the analysis, e.g. if you want to know which type of public transport people prefer going to work (bus, train, tram). Whichever choice is made, always clarify any exclusion, and give the number of cases.

Re-weighting

If the sample is disproportionate to the population, that is if some group is underrepresented in the sample compared with the surveyed population (e.g. if you have too few women in your sample compared with the proportion of women in your population), re-weighting should be done to make the sample representative of the population.

It is possible to do this in a simple way just by putting more emphasis on the answers from the under-represented group. If more precision is needed, you may need expert assistance for this stage of the analysis.

Non -response bias

Response rates will rarely be 100%, and the lesser the response rate, the greater the concern regarding non-response bias. Basically, the concern is that the sample is less representative of the population. Do those that responded differ from those that did not respond? If so, then there is under-representation of some groups and over-representation of others.

For example, there tends to be an over-representation of female respondents in surveys of the general public because women are usually more likely to participate than men. It can therefore be necessary to adjust the findings to account for this kind of imbalance in the sample by re-weighting the results.

Reporting

The results have to be presented in a way that is accessible and meaningful to the readers of the report. Important findings are usually presented as simple tables or charts.

If the survey is a major part of the audit, the report could be built from the results of the survey. Information on the way in which the survey was performed, e.g. regarding the questionnaire, survey design and results, should be explained in a methodology or survey annex.

Treatment of individual responses

If the respondents were given guarantee of confidentiality, the individual responses should not be revealed to the outside bodies (e.g. Commission). The same applies to the anonymous replies where the respondent could be indirectly traced.

LITERATURE

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Annex Checklists

Annex I. Checklist for planning a survey

	Activity	Completed
1	Clarify the objective of the survey - What are you trying to discover? - What information is needed? - What questions will be addressed by the survey? - What will the output look like, what charts and reports will be prepared?	
2	Review relevant work on the area - Have similar surveys been carried out? - Are similar data available that will provide sufficient information	
3	Consult relevant experts, interest groups	
4	Inform relevant authorities, the Commission	
5	Prepare analysis of the data - considering which methods to use for analysis, - what level of detail is needed for data, - decide which questions the analysis should answer, - which types of charts or graphs is to be produced from the data	
6	Choose software for analysing and presenting the data	
7	Know the target population, chose appropriate sampling design	
8	Consider need for confidentiality	
9	If contracting out, prepare a tender (no tendering is needed when the Court's survey tool will be used)	
10	Prepare the questionnaire	
11	Prepare invitation letter, addresses, reminders	
12	Prepare a schedule/timetable for the whole survey process	

Annex II. Checklist for drafting the questionnaire

	Activity	Completed
1	Prepare survey invitation letter / cover page	
2	Questions should be short and clear.	
3	Questions should be in line with the objectives of the survey	
4	Questions should provide the information needed for the analysis, in the appropriate level of detail	
5	Only ask one question at the time	
6	Group the questions into appropriate sections	
7	All respondents should be able to find an answer appropriate for them. Always offer "Don't know" or "Other" alternatives	
8	The questions should not be leading	
9	The alternative answers should be presented as equivalents	
10	The questions should be numbered in a clear and simple way to make it easy for the respondents to follow the structure of the questionnaire correctly	
11	The questionnaire should not be too long or cluttered	
12	The structure should be easy to follow for the respondents	
13	The questionnaire should be pre-tested including testing the data analysis.	