Running Statistical Surveys–A Guide To Best Practice

1. Introduction

1.1 This guidance note, which is based on guidance prepared by the Office for National Statistics (ONS), provides some helpful advice on running statistical surveys.

1.2 Information from statistical surveys is vital for Government, businesses and the wider community. Relevant and timely information is essential to assess the country's economic and social condition, to monitor and formulate policy, to measure performance or to facilitate business decisions in the market place.

1.3 This guide is intended for people working for Forestry Commission, Forest Research and Forest Enterprise who are involved with running statistical surveys. It is primarily concerned with large-scale surveys of businesses and local authorities although many of the principles apply equally to smaller business surveys and surveys of individuals or households.

1.4 Further advice and information on running surveys is available from the Forestry Commission's Economics and Statistics Unit.

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2. The need for surveys

Do I really need the information?

- If so, is it already available?
- If not, how and where can I get it?
- Can I justify the costs to business and to Government?

2.1 For anyone requiring information, these questions are a natural starting point, regardless of their knowledge of the subject field or their expertise in undertaking surveys. This section discusses these initial considerations and offers advice in assessing whether a new data collection is really necessary.

Using existing data

2.2 It will often not be necessary to carry out a survey in order to fill an information gap. Some or all of the data required may already be available. Always carry out a thorough search for such data to avoid duplicating the work of others and wasting respondents' time.

2.3 In order to explore fully whether adequate data already exist, a number of possible sources need to be explored. Where to look will depend on the type of information required but the following is a list of the more likely sources:

A. Economics and Statistics Unit

The FC's Economics and Statistics Unit can provide advice on existing survey data.

B. National Statistics Online (www.statistics.gov.uk)

The website contains a large amount information on surveys and publications produced by Government Departments and Agencies.

C. Archives

D. Professional organisations

e.g. CBI, Chambers of Commerce, Trade Associations etc.

E. Literature search

F. Administrative records

Where accessible and relevant, administrative records (i.e. registrations, memberships, applications etc) can be used to collect information, thus reducing or eliminating entirely the potential respondent burden. A summary of the advantages and disadvantages of using administrative sources is given at Appendix A.

G. Local sources

e.g. local authority, local Chamber of Commerce etc.

2.4 Always take care to ensure that any existing data comes from a reliable source and the definitions used are relevant and comparable.

2.5 A search may not identify precisely the information required, but might uncover data which, in the circumstances, is sufficiently closely related to meet some or all of the information needed. Alternatively, it may simply identify some previous experience of conducting a survey which may be learned from.

2.6 If a regular or ongoing survey on a related topic is identified then it may be possible to avoid conducting a new survey by adding relatively few questions to an existing survey questionnaire. The Forestry Commission's Economics and Statistics Unit will be able to assist in identifying such opportunities.

2.7 If, after all other possible sources have been fully explored, existing data are not available, or are inferior or insufficient, then you will need to consider collecting fresh data. As part of this it is vital to assess whether the need for such information justifies the cost to Government and respondents of setting up a new survey.

What do we mean by 'surveys'?

2.8 Surveys involve collecting information from units of a population using defined concepts, methods and procedures so that information may be compiled in summary form. A survey may involve forms in the post, electronic transfer of data, personal or telephone interviews, or group discussions.

Assessing the need for a survey

2.9 Determining whether a survey is the most appropriate option can be a complex process. Not all problems will necessitate a statistical approach. The first and most important step in the collection of any information is to clearly define the research objectives. What will the results be used for? The objectives should then be translated into specific information requirements.

2.10 Consult with likely users and providers to clearly define the data to be collected and the relevant terms and concepts. These, together with any constraints imposed by the target population, size or geographical distribution, will help focus attention on the most appropriate method of collecting the required information.

2.11 A survey is just one option. Consider whether case studies might be just as informative, or simply observing potential respondents? Would discussions with experts in the subject matter produce the required information? For research into

customer satisfaction, consider using "comment cards" displayed prominently in a relevant building or office rather than carrying out a more formal (and costly) survey into customer satisfaction levels. Comment cards invite customers to provide comments if they so wish. They can be advertised prominently and offer the chance to all those that pass through the office to register their satisfaction with the service. This method of collection is not subject to survey control procedures (see separate guidance) since respondents make their own decision about whether or not to take a form.

2.12 More specifically, consider each of the following:

A. Authority

- All statistical surveys must comply with survey control procedures (see separate guidance note for further details). In particular, they will usually require Ministerial approval before they can start.
- Will the survey be statutory upon the Department or Agency collecting the information, i.e. is there a legal requirement for the data to be collected? In the case of the Forestry Commission there are no statutory surveys.

B. Practicality

- Is the topic particularly complex or sensitive?
- Are respondents likely to have easy access to the required information and will they be willing to divulge it?

C. Resources

- What are the costs involved? Are the necessary financial, staff, computer and other resources available?
- Are respondents likely to be willing to devote their resources or that of their business to provide the information?

D. Quality

- Is response likely to be sufficiently high?
- Is a survey likely to produce data of sufficient quality?
- What level of error can be tolerated?

E. Timing

- Is there sufficient time to conduct a survey?
- When is the best time to conduct a survey?
- Will it be necessary to repeat the exercise? If so, how often?

F. Contracting out

- Will it be appropriate to contract out all or part of the work, e.g. if staff are unavailable or there is not sufficient in-house expertise?

2.13 It is almost impossible to work through all of the processes involved in setting up and carrying out a survey without specialist help, advice and guidance. This may

include help from businesses or Trade Associations in defining the specific survey objectives and data requirements or from finance officers in checking on resources.

2.14 Economics and Statistics Unit can provide advice and assistance on various aspects, including

- survey control procedures,
- questionnaire design,
- development of sampling methodology and
- analysis and presentation of the results.

3. Considering the respondent

3.1 The major cost of a survey is borne by those who spend time understanding and completing questionnaires. By comparison, the costs of design and printing are small. This section discusses the importance of considering the respondent and of minimising their burden.

Involving the respondent

3.2 The respondent is the most important person in any survey. Involve them at an early stage. Understand their needs.

3.3 Consultations between the survey sponsor (or their agents) and potential respondents are vital to ensure the survey is appropriate and necessary; the questions and instructions are relevant and properly defined; and the burden is perceived as being reasonable. Involving respondents in the testing and piloting of surveys will also help confirm the feasibility of the survey instruments (e.g. questionnaires).

3.4 The advantages of making the respondent's task as easy and pleasant as possible cannot be overstated. If the burden placed upon respondents is perceived to be relatively high then results may suffer, particularly if a sufficient number choose to:

- not reply,
- complete only part of the questionnaire,
- answer questions incorrectly or
- complain.

Recognising burden

3.5 Few people like filling in forms, no matter how well-designed. People can sometimes especially resent receiving statistical forms. This is perhaps understandable. While administrative procedures can be particularly burdensome, their purpose will often be well-known and established. The respondent will often have a clear interest in the process, e.g. tax returns, claims for grants etc. They may also see the process as fair if everyone is treated the same way, provided the burden is perceived as being reasonable.

3.6 In the case of statistical inquiries, the purpose may be more difficult for recipients to identify with, so make this as clear as possible. No-one likes an apparently pointless task, not least if (ironically) they have been singled out by sampling.

3.7 The cost implications to respondents of any new survey must always be considered and positive steps taken to minimise them. The fundamental consideration for those contemplating approaching business or local authorities in order to collect information should be to ensure the minimum burden is placed upon respondents in order to obtain essential, relevant, accurate, up-to-date information

3.8 The response burden may be affected by the number of questions that are asked, the time required to complete the interview or questionnaire (including the effort put into searching or manipulating data sources to provide the information in the format requested) and the level of management providing the information. Any time required to re-route the questionnaire to the most appropriate person in the organisation is also a burden and can be easily avoided by the use of a relevant up-to-date register and an appropriately worded introduction.

3.9 Whether the survey is seen by the recipient as a burden will also depend on various other factors, for example:

- the timing (avoid holiday periods or times of high seasonal workload for the respondent);
- the clarity of purpose;
- the quality of the form design or interview structure;
- the usefulness of any guidance notes;
- the extent to which the survey results are likely to be useful to respondents;
- whether the approach to the survey is focused on the recipient's point of view; and
- whether the survey is seen by potential respondents as being appropriate.

Reducing the burden on respondents

3.10 By making the respondents' task easier you will almost always improve the quality and reliability of the data and the efficiency and effectiveness of the survey as a whole. These basic guidelines will help reduce the load on respondents in almost all cases and bring advantages to the surveyor as a result:

1. The number of companies asked to participate should be kept to the minimum necessary to provide robust information.

- If possible, consider sampling schemes.

2. Contact with small businesses should be avoided unless absolutely necessary.

- Statistical inquiries create a proportionately higher burden to small businesses than to large enterprises. If possible, take steps to reduce the burden on small companies, for example by using simplified forms.

3. Direct the inquiry to the most relevant person in the company.

- i.e. somebody qualified to provide the necessary answers but not necessarily the most senior person competent in the matter.

4. Give respondents plenty of warning about impending surveys.

- This will enable them to conveniently arrange to collect the required information rather than wade through their records during or after the event.

5. Extract information efficiently.

- Respondents should be asked only those questions that are absolutely necessary. Ensure questionnaires are as clear and helpful as possible and guidance is straightforward and to the point.

6. Use definitions and concepts familiar to the respondent and consistent with other similar surveys.

- Unnecessary variations between inquiries can increase respondent burden while harmonisation can help reduce burden and improve the value and quality of the data received. Prior consultation with a sample of respondents will help to identify the most appropriate definitions and concepts.

7. Keep the frequency of surveys to a minimum.

- Surveys should only be repeated or updated when there is good reason to do so, e.g. if it is part of a regular monitoring exercise or if circumstances are likely to have changed over time.

8. Clearly indicate whether the survey is voluntary or statutory.

- If participation is legally required, then the respondent should be left in no doubt that this is the case. If not, then it should be made clear, either in an introductory letter or on the cover of the form that participation is on a voluntary basis.

9. Set up an efficient data editing process.

- This should minimise the need for re-checking with respondents.

10. Use overlap controls to prevent small/medium-sized enterprises being sampled for too many surveys simultaneously.

- It is good practice to try to minimise the cases where smaller businesses are selected for multiple inquiries.

4. Whether to employ a contractor

4.1 This section discusses the relative merits of running surveys in-house or employing outside contractors. It gives a few general tips about the types of contractor, their respective strengths, the drawing up and evaluation of tenders and assessing the contractor's performance.

In-house v external

4.2 Research projects may often be carried out by in-house staff. However, where the necessary expertise or resources are not readily available in-house, it will usually be necessary to employ the services of an external contractor. If so, in order to obtain value-for-money you will normally need to invite competitive tenders from the interested parties. It is usual for Government employees to seek ministerial approval before inviting external contractors to tender for survey work.

4.3 The decision whether to use in-house staff or approach external consultants will depend on a number of factors relating to the policy context; the design of the survey; the differing costs; and the availability of in-house staff.

4.4 Generally, running a survey in-house may be preferable if:

- staff have appropriate specialist knowledge/skills
- data are likely to be highly confidential
- it is part of an urgent small scale project
- it is an exploratory project prior to consideration of a full-scale study

4.5 Employing contractors may be preferable if:

- the survey is time-consuming (costs permitting)
- there is a lack of dedicated in-house resources
- findings have to be presented as impartial
- a fresh viewpoint will be valuable
- the survey is urgent and the contractors have a trained workforce in place
- specialised facilities are required

Types of contractor

4.6 Contractors may be part of a large organisation or simply freelance individuals. There are several different types of contractor, e.g.:

- market researchers
- research institutes
- academics
- management consultants

European Regulations

4.7 For very large surveys (where the value of the services that you are buying is above the threshold of £139,893 excluding tax), contact your Department's Procurement/ Purchasing Unit to ensure that EC Directives are complied with.

4.8 Contractors may also contract out work to others, i.e. sub-contractors. Whichever type of contractor is employed, they should:

- operate within the best practice guidelines laid down in this Guide
- be made fully aware of survey control procedures (see separate guidance note, "Survey Control in the Forestry Commission") and the need to comply with them
- adhere closely to the contract and seek agreement from the survey sponsors for any deviations from it
- carry out work to time, within budget and to the required standard
- preserve the confidentiality of the information collected
- maintain adequate control over any sub-contractors

A survey specification for potential contractors

4.9 If the decision is taken to use external contractors then a specification should be drawn up giving prospective candidates sufficient information on which to base a fully costed proposal. It should include:

- background to the research
- the survey objectives
- proposed research methods
- specific data collection requirements
- sampling requirements
- analysis and reporting required
- timing
- human resources
- liaison point with Department
- closing date

A survey proposal for the in-house team

4.10 If the decision is made to carry out the project in-house then a survey proposal should be drafted. Consult with potential users and providers in order to clearly define the information need and minimise the burden.

4.11 The content of a survey proposal will be similar to that for a survey specification (see above). It must however include an estimate of the cost to Government as

well as an assessment of compliance costs to potential respondents. Economics and Statistics Unit can provide further advice on the estimation of compliance costs.

Evaluating tenders

4.12 This is a potentially difficult area. Ensure you consult any relevant guidance, e.g. from your Departmental Purchasing Unit, before commencing the evaluation process. Even if there is no specific guidance, purchasing units can be very helpful in taking you through the procurement process and avoiding common pitfalls. For social research, see "Commissioning Social Research: A Best Practice Guide" by the Social Research Association. Copies are available at http://www.the-sra.org.uk/publications.htm.

4.13 In evaluating a tender, establish whether the tenderer has properly thought through what is required. Specifications are not always perfect and a good tenderer may have identified weaknesses or suggested modifications.

4.14 Assess whether candidates appear to have the necessary expertise or experience to conduct the survey. Is the proposal methodologically sound and does it show an appreciation, or even better, experience of surveying the target population. Tenderers should also advise you if your proposals are in any way unsound, e.g. if they place too heavy a burden on respondents. Check exactly what is on offer: how many reminders would be made; what sort of report would be produced etc.? Failure to do so may waste time and money.

4.15 Check whether the overall cost provides value for money, but do not always take the cheapest quote. It may mean the tenderer has misunderstood what is required.

4.16 Formal presentations by, or meetings with, the tenderer can also help to clarify points made in the written tender, particularly if there is little to choose between two tenders, but ensure those giving the presentation will themselves be closely involved in the project. NB If only one tender is received, this should be evaluated as rigorously as if competitive tenders had been submitted.

Evaluating the contractor's performance

4.17 After the survey, evaluate the contractor's performance by giving respondents, contractors and those officials that dealt closely with the contractor the chance to comment on the project.

4.18 Check whether the initial need was really met. For example, was the survey carried out within budget, was the collection, analysis and reporting of data completed as agreed, were there any complaints from respondents?

4.19 Try to identify problems e.g. poor response, large sampling errors, poor questionnaire design, complaints from recipients etc. and look for ways of improving things in the future.

5. Sampling

Choosing potential respondents

5.1 Having decided to conduct a survey, you will need to define what is the population of interest. For example, you could contact all businesses in a particular industry or in a geographical area. It may be necessary to restrict your attention to a smaller 'survey population' (eg people with telephones). The units to be surveyed should also be defined, for example households, individuals, enterprise groups, legal units, establishments or activity units.

5.2 In exceptional circumstances surveys may involve taking a census, i.e. approaching all units in scope, but usually it will be necessary only to conduct some form of sampling. This will often be much cheaper and easier to manage, produce results faster and reduce the load on respondents. However, it will also mean that sampling errors are introduced and there will be limitations to the amount of detailed analysis of the results that will be possible, unless the sample is specifically designed for this.

5.3 The sampling frame from which the sample is to be drawn is a key element. Where possible it should hold basic information about each unit, such as type of activity or employment. For business surveys, maintaining a comprehensive, up-to-date register is essential in the selection of meaningful samples. It can play a major part in achieving reliable estimates and help ensure no individual business is unfairly burdened.

5.4 A sampling frame will often be an actual list (businesses which are trade association members, mailing list of customers, occupiers of a building in a given area) or it may be conceptual (e.g. customers waiting for service at a particular time).

5.5 The essential qualities of a good sampling frame are:

- each unit should be counted (i.e. no exclusions, there will be bias if excluded units are different from included ones);
- each unit should be counted only once (otherwise there will be bias in favour of the characteristics of the duplicates);
- each unit should be uniquely identifiable and distinguishable from the others;
- the sampling frame should be accurate and up-to-date (an avoidable burden is placed on any recipient contacted in error).

5.6 An overriding factor in the development of sampling frames and sampling strategies is that departments should be aware of the number of approaches made to individual businesses, particularly small businesses, and ensure no particular business is unfairly burdened compared with others of a similar nature.

5.7 For business surveys, use of the Inter-Departmental Business Register (IDBR) is recommended as a means of reducing the overlap between surveys and co-ordinating the selection of samples of businesses. The IDBR is maintained by the Office for National Statistics and is based on VAT and PAYE records. For each business, details include the address, economic activity, employment turnover, country of ownership and value of trade with other European Union countries. However, given the way the IDBR is derived, small businesses (which fall below VAT and PAYE thresholds) are not covered. Contact the Economics and Statistics Unit for further advice on the IDBR.

Sampling techniques

5.8 The extent to which sampling will be appropriate depends on various considerations, for example:

- cost constraints
- the accuracy of the results required
- the detail of the results required
- the proportion of the survey population with the relevant characteristics
- the variability of the attributes being measured among the population
- the expected response rate

5.9 The design of the sampling scheme to be used should also take account of the above factors. Where the required sample size is uncertain, e.g. for a new survey which has only been piloted on a small scale, it will be advisable to proceed in stages and calculate sampling errors before proceeding further. This may help to reduce costs and avoid excessive sample size.

5.10 Generally it is advisable to use probability sampling, i.e. where every unit has a known probability of being included. This allows estimates be made for the entire population and the expected sampling errors to be calculated.

5.11 It is sometimes necessary to resort to forms of non-probability sampling, eg 'purposive' sampling, based on judgement, or rely on volunteers. However proper random sampling is the only way to be sure that you overcome the effects of unforeseen biases and can assess the accuracy of your sampling method.

5.12 Many possible schemes for sampling may be considered. Techniques include:

- simple random sampling
- systematic sampling (eg. choosing every tenth entry on a register)
- stratified sampling (including quota sampling)
- cluster sampling (especially where the geographical coverage may affect costs)
- sampling proportional to size (a useful means of sampling smaller firms lightly according to their employment or turnover)
- multi-stage sampling
- multi-phased sampling

6. Methods for collecting data

6.1 This section considers the various ways in which information can be collected and the relative strengths and weaknesses of each.

Types of approach

6.2 Research can be considered as being either quantitative or qualitative. This guide deals largely with the former, that is the collection of predetermined measurements from respondents using a consistent collection framework, usually a questionnaire. The information collected is usually directly comparable between respondents and can be aggregated to give summary information.

6.3 Qualitative research is more flexible and responsive. There is often no fixed framework, besides perhaps a topic guide around which interviews are structured. Measurements may vary between respondents so as to make aggregation or comparison difficult or even impossible. The inferences that can be drawn from qualitative research will often therefore be rather subjective.

6.4 Most surveys or censuses collect information by either taking direct measurements, e.g. the number of cars passing a particular point, or by asking people questions. The latter involves two main methods of approach, interview surveys or self completion surveys.

6.5 In the case of direct measurement, data is often collected with little or no need to burden others. The precise method of collection will depend heavily on the type of measurement required. For more complex projects, collectors may require specific training to ensure the collection of consistent, high quality data.

6.6 Interviewer administered surveys are conducted either face-to-face with respondents or by telephone. Increasingly, interviewers use lap-top computers to help them conduct the interview efficiently and check for conflicting answers, i.e. computer assisted telephone interviews (CATI) or computer assisted personal interviews (CAPI).

6.7 Self completion surveys can be conducted using postal questionnaires which are sent to potential respondents. They can also be distributed at a specific place e.g. seminars.

6.8 Web surveys are another example of a self completion survey. Respondents are typically contacted by e-mail to request their participation and information is collected by respondents keying in their answers remotely via a PC connected to the Internet, rather than on paper.

Which is most suitable?

6.8 When deciding upon the most suitable type of approach, or combination of approaches, the following factors should be considered:

A. Nature of the questions

- The complexity, sensitivity and depth of the subject matter are all key factors.
- Interviews, either personal or telephone, are better for probing respondents' attitudes. Telephone interviews can usually be carried out more quickly, but rely on the respondent having the required information to hand. Face-to-face interviews are usually better for extracting information about complex or sensitive issues and for lengthy probing of a particular subject.
- Similarly, group discussions can be used to extract sometimes subjective information about complex or sensitive issues or, indeed, highlight such issues. They may also encourage openness among participants, stimulate ideas through constructive discussion, damp-down extreme ideas during debate and may lead to the formation of a consensus opinion.
- Postal or online questionnaires are more useful when collecting purely factual information. They allow respondents time to consider their answers, refer to records or consult with others and work best if they are simple and fairly short.

B. Response rates

- The quality and reliability of survey data are clearly affected by the rate of response.
- Face-to-face interviews will usually achieve a better response than either mail or telephone surveys. During personal or telephone interviews the interviewer also has the opportunity to reduce errors by answering queries on the spot and correcting any obvious respondent errors.
- Response to postal surveys can be improved by using well-written introductory letters, professionally designed questionnaires, tactful and efficient follow-up techniques and incentives, financial or otherwise, for timely completion.

C. Resources

- Setting up, training and deploying a team of interviewers can be expensive–mail, telephone or web surveys are therefore usually much cheaper. A large team of interviewers will also need close supervision to ensure interviews are conducted in the same way. If not, different information may be collected simply because of differences in interview technique.

- Web surveys are recognised as one of the least expensive survey collection mechanisms since there are no costs associated with postage, telephone calls, interviewers or expensive CAPI technology.

D. Time

- Telephone surveys are usually quicker to conduct than either mail surveys (must await responses) or personal interview surveys (must arrange and carry out interviews). Web surveys potentially have the fastest turnaround with instantaneous electronic distribution of the survey materials and electronic return of completed responses.

E. Population of interest

- The nature of the population, especially their geographical location, may also have a bearing on the collection method employed. It is expensive to survey remote areas or a widely-dispersed population by face-to-face interviewing as travel costs will mount up. Using postal, telephone or web surveys will be more cost effective to capture information on remote areas.

7. Introducing the survey

7.1 This section discusses the importance of good introductions to the success of the survey. It also lists the points that respondents should be made aware of before they agree to take part in a voluntary survey.

Who is making the contact?

7.2 The introduction, either written or oral, sets the scene. It should clearly state:

- who is conducting the survey and why
- identify the survey sponsor, if different
- give contact points for further information.

7.3 It should also create a positive impression and succeed in interesting or involving the respondent. Unless potential respondents can be persuaded the survey is relevant and worthwhile, they will be unlikely to complete it. The introduction therefore needs to instil a sense of enthusiasm or commitment to the study. If respondents are likely to have any personal interest in the results, it is important to make this clear early on.

7.4 The introduction should explain that the respondent has been approached as the appropriate person to give the information, where this is so. Potential respondents should not be given the impression the survey does not apply to them.

Points to cover

7.5 Whatever the type of survey, the introduction should also include the following six points:

1 A clear indication of whether the survey is voluntary or statutory. In the case of the Forestry Commission, all surveys are voluntary.

- However, if a respondent is legally required to participate in an inquiry, this must be made abundantly clear in the introduction. Explain the legal basis for collecting the information and why the survey needs to be compulsory.
- If the survey is voluntary then the respondent's co-operation should be clearly requested. The voluntary nature of the survey should not be obscure.

2 A confidentiality assurance

- Inform respondents that the information they provide will be treated confidentially. For example, it will not be used in a form which identifies them individually, nor will it be passed to others without their

prior agreement. It will be used only for statistical purposes, and be archived securely. If data-sharing agreements have been entered into, these should also be indicated. Further information on confidentiality can be obtained from Economics and Statistics Unit.

3 An estimate of the time required to participate

- This is the only indication the potential respondent has of assessing the likely burden they are agreeing to. It is only courteous to provide such information before the interview begins or the form is completed.
- For self-completion forms such estimates also help respondents gauge the amount of research required. For example, if a short four-page form is estimated to require three hours to complete then the respondent is immediately made aware that the required information is unlikely to be readily available.

4 Why the information is needed

- Explain the purpose of the survey; why the information is needed; who will benefit from it; and how it will be used. Explain in terms the respondent is likely to understand and appreciate from their point of view.

5 What the respondent will receive in return for co-operating

- Mention any incentives early in the introduction, in the first paragraph if possible. If the respondent is receiving something in return for their co-operation (e.g. a written report of the findings or individual feedback on their performance compared with others) then this should be used to 'sell' the survey to them.
- A summary of the survey results should also be made available to respondents wherever possible. Respondents may even be won over if they simply have the opportunity to help with a worthwhile cause which may only indirectly affect them. Such incentives may make the difference in convincing potential respondents to participate.

6 What help is available

- For self-completion forms, include a contact point in the introductory letter to show where help is available. Invite respondents to discuss potential difficulties rather than complete the form incorrectly or simply not reply.
- Offer to accept best estimates rather than precise figures. Such estimates are likely to be more accurate than any imputed figures and are certainly better than no information at all.
- Where possible, offer to collect the information in whatever form is easiest for the respondent, particularly if this involves the use of established procedures or any form of electronic data capture.

8. Designing a questionnaire

8.1 This section provides advice on the design and drafting of questionnaires.

The importance of the questionnaire

8.2 Surveys are about communicating with respondents. Questionnaires play a central role in this process by asking questions, giving instructions and offering explanations. They affect relationships with respondents and the ability and willingness of respondents to provide high quality, timely data. Good questionnaires save the time and money of all those involved in the survey.

8.3 The questionnaire can be one of the biggest causes of non-sampling error or non-response bias. Good sampling designs and clever analysis are a complete waste of time if the questions are poorly framed, fail to get the correct response or deter respondents from co-operating. Poor questionnaires may also result in heavy extra costs due to checking, correcting and re-inputting data.

Planning a questionnaire

8.4 As a first step, it may help simply to draw up a broad plan of the questionnaire. List the essential points to be included; group them into related blocks; arrange the blocks into a logical order; and give each one a sub-heading. This plan provides a framework upon which to draft the questions necessary to collect the required information.

8.5 It may also be useful to establish your priorities at an early stage by ranking the importance of each data item. This will make it easier to dispense with less important questions if the need arises, e.g. if the survey budget is reduced, or the questionnaire becomes too long.

Facilitating response

8.6 Responding to a questionnaire can be seen as involving four distinct processes on the part of the respondent:

- Understanding
- Retrieval
- Thinking/judging
- Communicating an answer

8.7 In order to get the best from the respondent, a questionnaire should at the very least:

- be aimed at the right person
- focus only on the survey topic
- be easy to understand
- use everyday conversational language
- politely encourage completion
- contain straightforward questions
- facilitate respondent's recall
- include clear unambiguous instructions
- be easy to complete
- flow smoothly

8.8 It is extremely helpful to consult on the draft questionnaire with potential respondents and to carefully test and pilot the questionnaire. You may also be able to learn from others' experience in carrying out similar surveys or approaching the same population, and take account of any known defects, errors or complaints from previous similar surveys. The Economics and Statistics Unit may be able to advise on any similar surveys.

8.9 In practice, a well-drafted, well-designed questionnaire will be the result of a joint effort combining the opinions of potential respondents, the subject expertise of the survey sponsor and the specialist knowledge of the forms designer. Above all, those preparing the questionnaire will have focused their attention strongly on the respondents' point of view.

Time required to participate

8.10 Questionnaires should be kept as short as possible, consistent with collecting accurate information, in order to reduce respondent burden. A relatively short questionnaire is also more likely to be completed than a lengthy one, just as respondents are more likely to agree to take part in relatively short interviews. Generally, a single side of A4 paper may receive a better response, provided it is well laid out.

8.11 As a guide, we recommend that:

- telephone interviews take no longer than 20 minutes to complete
- postal forms take no longer than 30 minutes to complete
- face-to-face personal interviews take no longer than one hour
- group discussions take no longer than two hours

8.12 The above timings include any time spent collecting the information beforehand in order to complete a questionnaire or take part in an interview or discussion.

The questions

8.13 Three fundamental considerations to bear in mind when drafting the questions are:

- Will the question contribute towards the objective?
- Will the respondent be willing and able to answer the question as intended?
- Is this the most efficient way of collecting accurate data?

8.14 Together, these determine what questions should be asked and how. They require a clear understanding of the aims of the survey, consideration of the survey through the eyes of the respondent and an awareness of the costs both to the survey sponsor and the respondent.

Question structure

8.15 The following principles have all been identified during research into form-filling behaviour:

a) principle of linear progression
i.e. respondents work through questions in the order they appear.

- A respondent will keep working through questions as long as there is an apparent order. The respondent will continue to answer questions sequentially unless they are clearly instructed to do otherwise or until an apparently irrelevant question is encountered. Routing instructions therefore have to be very obvious if they are to be followed.

b) principle of least reading effort
i.e. respondents only read what seems necessary to maintain progress through the form.

- Research suggests that instructions and explanatory notes are read by little more than a third of respondents that should have read them.

c) principle of question routing
i.e. respondents jump directly to a new question if asked to do so

- Guidance must be clear, and precede the relevant question. It is too late to give instructions or explanations after the respondent has moved on to the next question.

d) principle of question omission
i.e. respondents miss out the questions that don't seem to apply to them

- You do not have the advantage of dialogue when using a postal questionnaire. The respondent cannot query anything they are unsure of. When in difficulty, the respondent may omit the question or answer it incorrectly. This can only be avoided if the question is succinct, well-written, uses clear definitions and provides for all possible answers, including not applicable, zero, etc.

- Keep questions on related topics together on the questionnaire. If respondents become confused over a question they will often read the next question or review their interpretation of earlier questions.

Questionnaire design

8.16 There are a number of guidelines to follow and pitfalls to avoid when considering what questions to ask and how to ask them. These apply no matter who is carrying out the survey, whatever the subject matter or whoever is responding.

8.17 The following list is by no means exhaustive but should be helpful as a basis for successful questionnaire design:

1. **Make a good start**
   - The introduction and opening questions should succeed in interesting and involving the potential respondent in the survey. This is particularly important for self completion forms.

   - The opening questions should relate directly to the survey objectives and if possible to points made in the introduction. They should be applicable to all respondents and be particularly easy to complete. Their style and easy nature should encourage the respondent to want to proceed with the remainder of the survey.

2. **Ask the right questions**
   There are two main types of question: **open** and **closed**.

   - **Open questions** invite the respondent to answer in their own words, usually by either filling in a blank space on the form or by discussing a topic with an interviewer. They allow respondents to interpret a question as they see fit and answer freely. They are therefore most useful in assessing attitudes and as such they are commonly used in interviewer-administered surveys. However, they are often not popular with respondents, as they are time-consuming for businesses and individuals to complete. They will also take longer to analyse.

   - **Closed questions** require the respondent simply to tick a box or choose an answer from a range of options, i.e. multiple choice. They therefore inhibit wider comments but are usually easier to

answer. Closed questions are more suitable for self-completion surveys or any survey gathering facts.

- If you find it is difficult or impractical to cover all possible choices within a closed question, the list of alternatives should end with *Other....please specify,* i.e. a partially closed question.

- Use closed questions and tick boxes wherever possible in postal questionnaires.

3. Be clear

Plain English is vital at all times, not just for surveys of the general public or non-experts in the subject matter. Ensure you:

- avoid ambiguous or misleading questions.
- avoid the use of abbreviations, jargon or specialist language.
- avoid undefined or misleading terms or concepts
- avoid leading or loaded questions

4. Be direct

Questions should be as clear and specific as possible.

- avoid vague, abstract or hypothetical questions.
- avoid complex or technical language and jargon
- use proper sentences rather than note form
- avoid multiple questions
- avoid double negatives
- use active rather than passive verbs

5. Be logical

- Ask questions in a natural, logical order for the respondent. Use effective filtering to clearly guide the respondent to only those parts of the form they need complete. Group questions into areas of related topics and ask all questions related to one topic before moving onto the next.

6. Be relevant

- Questions should always be relevant to respondents, wordings should be familiar and response categories meaningful, mutually exclusive and exhaustive. If some questions are not relevant to all respondents, make this clear on the form. Respondents feel uncomfortable if instructed to answer in a way that does not reflect the reality of their own situation.

7. Be brief

- Questions and guidance should be short and punchy. Instructions should usually contain sentences of fewer than 25 words, averaging less than 20 and contain only one verb. Use short, simple words - if

you can use words of one or two syllables, do so. Keep paragraphs short.

8. Be helpful

- Where appropriate, complete questions for which you already have information before sending the questionnaire, e.g. recipient's name and address, the nature or size of business etc. State the source of such information, e.g. a previous survey, a tax return or a trade directory and merely invite respondents to check such information.

- Important note: It is best practice not to link questionnaires to individuals, whether this is by serial number or name. This is particularly so when ascertaining views about customer satisfaction as respondents may be unwilling to give adverse comment if they think it will be held against them later.

- Phrase questions in a way which minimises the writing needed to answer them. Where possible, ask closed questions. If banded ranges of figures will suffice, use these rather than ask for precise estimates.

- Give clear guidance on how to complete the form. Instructions should be short and clear; guidance should be easy to find and, where possible, close to the relevant questions. Structure any assistance into the order in which things need considering or actions need taking. Direct respondents to the information source they should use, if known.

- Give a contact name, address and telephone number for enquiries. Make clear the date by which a response is required. Tell the respondent what to do after completing the form and include a postage paid addressed envelope for easy return.

- Provide the questionnaire in whichever form is most helpful to the respondent. Survey forms to respondents in Wales usually need to be available in Welsh, or bilingually, in accordance with the principles advanced by the *Welsh Language Act, 1993*.

- Provide room for comments. This will enable the respondent to pass on any extra information they may think relevant. It may also prevent the need for time-consuming queries.

9. Be understanding

- Keep the audience in mind. Identify with them. Put yourself in their place and try to understand the burden you are imposing. Consider the location on the questionnaire of questions that might be sensitive to the respondent. Generally, such questions should not be placed at the beginning of the form. If possible, place them in a

section where they are more meaningful in the context of other questions. Do not ask unnecessary or potentially embarrassing questions, indeed doing so may endanger response to the whole survey.

- Do not ask questions which involve unreasonable demand on respondents' memories - you may get unreliable results! What respondents can recall will depend on the importance to them of an event as well as how long ago it occurred.

10. Be courteous

- Write in a courteous manner. Try to sound personal unless there are valid reasons for not doing so.
  e.g. *Please complete this form* rather than *you must complete this form* - but use *you* rather than *applicants* or *respondents* etc.

- At the end of the survey, include an expression of appreciation thanking the respondent for giving up their time.

- Provide tailored feedback to respondents where possible. At the very least, make consolidated or aggregated results available to those businesses providing information, if requested and if readily available in summary form.

- Ensure that some summary information can be made available free of charge.

Questionnaire layout

8.18 Having decided upon the questions to ask and the order in which they will appear, you will need to consider the look, layout and style of the questionnaire.

8.19 Ensure the questionnaire layout helps, not hinders, response. A cramped or badly presented form will deter potential respondents from completing it, no matter how good the questions.

8.20 A well designed questionnaire should:

- appear interesting and easy to complete
- be respondent-friendly
- be interviewer friendly (if relevant)
- appear professional and business-like
- create a positive impression
- provide titles or headings for each separate section
- have all questions numbered
- provide plenty of room for answers
- ensure tick boxes are evenly spaced and close to the relevant options

- guide respondents through the form
- provide space for additional comments

8.21 A few other tips are to: use lower case rather than upper; bold type rather than italics for emphasis, use black type on white or lightly tinted paper, use 10pt. or larger type size etc. The use of colour may also have a positive effect.

8.22 Improving the form design will add value to the questionnaire and almost certainly improve response rates and the quality of results. Contact the Economics and Statistics Unit for advice and assistance.

Electronic forms

8.23 As more companies make use of their existing computer systems to provide statistical data, so there is a greater need to ensure electronic forms are designed with these systems in mind. This often requires the involvement of specialist computer forms design companies so that information can be readily accessed from existing software packages, i.e. accounting packages designed to provide information to Companies House. Such systems are particularly beneficial for large regular surveys.

Guidance notes

8.24 Most respondents read only what they think is necessary. If they look at the instructions, they read the bold type first and then decide whether they need to read further. In practice, they rarely read guidance notes or instructions at all, making straight for the questions and referring to the instructions only when they get into difficulty. As a result, they miss important instructions or definitions.

8.25 Errors in answering the questionnaire are often caused either by a lack of appropriate instructions or by a misunderstanding of what to include or exclude.

8.27 In drafting guidance, try to follow these simple guidelines:

- ensure instructions are short and clear
- put instructions close to the relevant questions
- provide definitions at the beginning of a questionnaire or, better still, as part of the relevant question
- use bold type to emphasise important items
- specify what should be "included" or "excluded" as part of the question, not in separate instructions.

9. Consultation, tests and pilot surveys

9.1 Before any survey goes ahead it is important to ensure that it has been carefully tested and thorough consultations have taken place. This section discusses how to test or pilot surveys and who best to consult.

Consultation

9.2 Consultations with users are vital to ensure that the survey and all the questions in it are appropriate, genuinely necessary and likely to meet their requirements.

9.3 Businesses should be consulted on survey design to ensure meaningful and compatible terms, definitions, statistical categories and formats. This is particularly important if the survey is to be repeated at regular intervals or if cross-survey analysis is to be conducted. The use of standard definitions and classifications will also assist those who wish to use the data in the future, perhaps eliminating the need for a new survey. The relevant Trade Associations should also normally be consulted on the scope, aims and targeting of surveys. Their involvement may ultimately help produce higher returns and lower costs.

9.4 It is important to have carried out consultations and settled the questions to be included in the survey before the subsequent evaluation stages (i.e. testing and pilot survey) take place. Otherwise much of the evaluation work may be wasted.

Testing

9.5 Tests and pilot surveys will help to confirm the feasibility of plans and procedures. They may also help to determine the statistical variability of items to be measured or to confirm response rates and costs. This in turn will help to determine the appropriate sample size for the final survey. It is important to check that survey questions meet objectives, are consistent and provide information for users as intended.

9.6 How much to test will depend on factors such as,

- the type, size and importance of the survey
- the extent to which there is successful experience of previous similar surveys
- the resources available for the survey
- the timetable
- knowledge of the survey population
- whether the survey is to be run on a continuing basis.

9.7 Testing can save large amounts of time and money for Government and respondents by identifying mistakes which might otherwise only be discovered in

the course of conducting the main survey. For example, it might reveal that firms in a certain industry record their output by units, when you had planned to ask them for it by weight.

9.8 Testing can take various forms. For example, it may involve interviews or the debriefing of interviewers or sometimes specialised cognitive methods. Where possible, it should involve observation i.e. watching people actually fill in draft questionnaires and encouraging them to think out loud whilst they do so.

9.9 At its simplest, testing at some stages may only require critical appraisal through a fresh pair of eyes. Preferably, this should be done by someone who has nothing to do with the survey in their usual work and certainly not someone involved in the design itself.

9.10 Small scale evaluations can identify problems that would not necessarily be discovered in a full-scale pilot but successful testing relies on full and frank criticism. Many ambiguities may potentially be discovered at this stage.

9.11 Conduct tests on real respondents to get a realistic assessment of the likely success of the survey and of the potential problems.

9.12 It is vital to see not only whether the questionnaire is likely to work for respondents but also whether it works for interviewers, coders, data entry staff and others involved in processing the results. Do all the questions have the meaning intended?

Pilot surveys

9.13 Pilot surveys should be carried out if at all possible. As a general rule such surveys, like dress rehearsals, should be used to fine tune the smooth running of a survey, although they may also be used for testing alternative survey procedures or designs by using appropriately split samples.

9.14 Pilot surveys can be used to detect any problems that may arise in the survey design or in the processing system. They can also be used to estimate costs and timings if these are not already known. They should not be used for last minute radical experimentation. Pilots should normally only follow thorough pre-testing.

Error analysis

9.15 Since errors occur during the completion of most forms, the design of a form will almost always be improved if you evaluate how well or how badly it has performed in the past.

9.16 You can analyse errors by counting or tabulating the number and type of errors that occurred on a sample of forms. Such analysis provides evidence for making improvements to subsequent similar forms and provides a benchmark for comparing one form against another.

9.17 There are four key types of error:

- **omission** - respondents fail to answer
- **commission** - respondent gives information they were not asked for
- **mistakes** - respondent gives incorrect information
- **transcription** - error by staff in entering data

9.18 Where possible, each error on a form should be allocated to one of these four types. By tabulating the four error types against each question number a pattern may begin to emerge showing the frequency of errors and the reasons for them. Although there will always be more errors on a form than can be identified through error analysis, this information will often be sufficient to improve an existing form or to improve a range of similar forms.

9.19 In short, there are three key principles when evaluating a questionnaire:

a) always evaluate the performance of a form before you change it.
b) if necessary, change the form to improve it's performance.
c) evaluate the form after you have changed it, to see if it has improved.

10. Maximising response

10.1 It is clearly important to maximise response to surveys. There are various measures that can help, for example:

1. Make the respondents task as easy as possible

- Ensure the respondent has ample time to complete and return the form within the required time. This involves proper planning, well-written recruitment and introductory letters and good questionnaire design.

2. Give warning that the questionnaire is coming

- Consider sending an introductory letter in advance, preferably a few weeks before sending the questionnaire (if applicable) so that respondents have time to prepare. As with any introductory letter, inform the potential respondent why the information is needed and how they will benefit (if they will). Ask for their co-operation in providing the information quickly, tell them how long you expect them to take to complete the form and assure them that the information will be confidential.

3. Make appointments

- Arrange with respondents a convenient time in which to carry out the interviews. Do not "cold call" unless absolutely necessary. Offer to conduct the interview at a more convenient time if the respondent would prefer.

4. Issue reminders

- The longer a questionnaire remains unanswered, the less likely it is that it will ever be completed. The key factor in achieving a high level of response is often simply the persistence of the researcher. Many people have to be reminded at least once to fill in a form and return it and failure to take such action will inevitably lead to higher non-response.

- Generally, two reminders may be needed before response reaches an acceptable level. To make this cost-effective, it may be best to issue a standard reminder letter first (usually automatically generated), followed soon after by a personal telephone call and, if necessary, the issue of a fresh copy of the questionnaire. Do not persist in reminding recipients if the survey is voluntary.

- Build in an appropriate amount of time for the respondent to complete and return the form. The timing of reminder action will vary according to the particular needs of the survey but generally response chasing should not start within two weeks of despatch of the questionnaire, even if the timeliness of the data is particularly important. Hasty reminder action may irritate would-be respondents and actually deter them from completing the form.

5. Give a clear assurance about confidentiality

- Inform respondents that the information they provide will be treated confidentially. For example, it will not be used in a form which identifies them individually, nor will it be passed to others without their prior agreement, it will be used only for statistical purposes, and be archived securely.

6. Advertise any incentives

- If the respondent is likely to benefit from the survey, or if they will receive a summary of the results, tell them of the fact early in the introduction.

7. Offer help

- Include a contact name, address and telephone number for enquiries. Encourage the respondent to discuss any difficulties they may have in completing the form. The alternative may be an incorrect or incomplete return, or no return at all.

- For regular surveys, offer to visit respondents individually. Take the opportunity both to discuss any difficulties and to observe how the form is completed. Consider whether a form can be personalised or adapted to suit the particular needs of an individual contributor, especially if some aspect of the standard form is causing difficulties.

- Offer respondents alternative ways of supplying data, for example electronically.

8. Statutory surveys

- As a last resort, if it is vital to get a full response to a survey and it would be difficult to achieve on a voluntary basis, then Departments can consider making the survey statutory (if the potential authority exists). Think carefully before doing so. Statutory surveys are unpopular with respondents.

- This option should only be considered when absolutely necessary and when it is known that measures such as those listed above would not be enough to elicit a full response.

- Making a survey statutory will clearly require full Ministerial support.

- The Forestry Commission currently has no statutory surveys. The Forestry Act gives the Commissioners powers to collect statistics, but does not mention statutory surveys.

Sheila Ward
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APPENDIX A

ADVANTAGES AND DISADVANTAGES OF USING ADMINISTRATIVE SOURCES

1. Given the vast amounts of information stored on government computers, there are no doubt cases where administrative data are under-used for statistical purposes.

'Administrative data' is defined here as information collected systematically for the purposes of individual rather than anonymous treatment of respondents.

2. Apart from the advantage of avoiding (statistical) burdens on respondents, the advantages of administrative sources compared with statistical surveys are:

- Low costs of obtaining data from an existing source.
- Faster analysis, i.e. more timely figures can be obtained (in particular the time between an event occurring and its recording by the respondent will usually be shorter than with a statistical survey).
- More frequent analysis is possible.
- Sometimes more detailed figures are available e.g. for geographical areas (although the available types of variables may be limited).
- No statistical sampling errors.
- No non-response bias.
- Problems of memory recall may be avoided (which may be especially useful for conducting longitudinal studies).
- Systems may give accurate indicators of change (though note the potential problems of discontinuities caused by administrative changes- see below).
- Administrative questionnaires can sometimes yield more factually accurate information than statistical questionnaires as there may often be more obligation and/or incentive to give the right answer (e.g. for tax purposes).

3. The are also many potential disadvantages of administrative sources which need to be considered:

- Effort may be needed to make administrative sources useable for statistical purposes. For example it may be necessary to combine data extracted from various sources using good linking and estimation procedures (which may depend on adequate identification number systems). Efforts may also be required to fill gaps or to weed out redundant data.
- Data may be subject to distortion especially if results are used as performance indicators by which the success of those controlling the system may be judged.
- Definitions and classifications may often not be ideal for the statistical purpose. Coverage of the data may also be limited and it may be difficult to make comparisons with other statistics.
- The instability of a system or inconsistencies may cause discontinuities. There may be some danger of interruption to the supply of data.

- There may be constraints on the use of data, e.g. legal obstacles or safeguards for confidentiality, though often acceptable arrangements may be found for statistical use.

APPENDIX B

A CHECKLIST OF KEY POINTS OF GOOD PRACTICE

The following list is not exhaustive but is given as brief checklist of key points of good survey practice. They are also the most important points to consider if you want to clear surveys quickly through the survey control procedures.

1. Does the introduction to the survey :
   - explain clearly the purpose of the survey and why the information is needed?
   - mention prominently what benefits there may be to the respondent?
   - make it clear that the survey is voluntary or statutory?
   - give an estimate of the time required to comply with the survey?
   - provide assurance regarding the confidentiality of information obtained?

2. Does the questionnaire:
   - ask simple questions that are easy to understand?
   - ask questions in a logical sequence?
   - provide adequate room for answers?
   - avoid unnecessarily open questions? (multiple choice questions e.g. using tick boxes are preferable)

3. Are the guidance notes
   - clear?
   - simple?
   - easy to understand?
   - close to the relevant questions?

4. Has a compliance cost assessment been provided?

5. Has special consideration been given to the impact on small firms where applicable?

6. Have trade associations and businesses been consulted as appropriate

7. Have enquiries been made to explore
   - other possible sources of the information?
   - the possibility of sharing data?
   - making greater use of sampling techniques?